AHS | AMERICAN HERNIA SOCIETY℠

FINAL PROGRAM

AMERICAN HERNIA SOCIETY

2024 ANNUAL MEETING

Sept. 12–14, 2024

Swissôtel Chicago

www.americanherniasociety.org

#AHS24

TELABIO®

SCIENCE. VALUE. INNOVATION.

OVITEX®
REINFORCED TISSUE MATRIX

Minimizing Retained Foreign Body
Consistently Low Recurrence Rates

VENTRAL/AWR

2.6 % | DeNoto, et al.[1] 2022 92 patients/24m**

INGUINAL

1.6 % | Ankney, Szotek, et al.[2] 2021 306 patients/1.36m**

Visit **booth 118** to get hands-on experience with the OviTex® Reinforced Tissue Matrix Portfolio!

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*TELA Bio sales data. ** Followup months.

1. DeNoto,G III, Ceppa, EP, PacellaSJ, Sawyer, M, Slayden, G, Takata, M, Tuma, G, Yunis, J. 24 Month Results of the BRAVO Study: A prospective, multi center study evaluating the clinical outcomes of ventral hernias treated with OviTex® 1S Permanent Re-Inforced Tissue Matrix. American Hernia Society Annual Meeting Podium Presentation. September 14-16, 2022.

2. Ankney C, Banaschak C, Sowers B, Szotek P (2021) Minimizing Retained Foreign Body in Hernia Repair Using a Novel Technique: Reinforced Biologic Augmented Repair (ReBAR). Maples. 2021 July.

AHS wishes to recognize and thank the following companies for their commercial promotion of this educational activity:

Silver

Allergan Aesthetics, an AbbVie Company
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Join AHS – Online Application

WHY JOIN THE AMERICAN HERNIA SOCIETY?

The American Hernia Society (AHS) is recognized as the worldwide authority on hernia surgery. The purpose of the Society is to advance the science and treatment of hernia and abdominal core health, and to promote the highest standards of professional skills and competence among surgeons who perform abdominal wall reconstruction.

Meetings

Receive discounted meeting registration for the AHS Annual Meeting covering all areas of abdominal wall reconstruction. The meeting includes faculty from around the globe who are leading educators in hernia surgery.

Online Member Search

Surgeons can connect with colleagues through the AHS website. Be included in our online "Find a Hernia Surgeon" directory. As a member, you have control of the information available on your surgeon profile.

Hernia Journal

Subscription to Hernia is included in your annual dues. AHS members receive 6 electronic editions of Journal Hernia each year. Members receive access to download Journal Hernia articles online at no additional cost.

AHS WiSE "Web Information and Social Media Education" Library

Enjoy curated video content from renowned hernia faculty worldwide! The WiSE Library is an educational resource designed to be the premier academic resource for all things hernia. Content has been invited and peer reviewed to provide AHS members with convenient access to the best video education to advance the science and treatment of hernia.

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CME INFORMATION

Joint Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by Amedco LLC and the American Hernia Society. Amedco LLC is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physicians

Amedco LLC designates this live activity for a maximum of ***17.25 AMA PRA Category 1 Credits TM*** for physicians. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

American Board of Surgery (ABS) MOC

Successful completion of this CME activity, which includes participation in the evaluation component, enables the learner to earn credit toward the CME and/or Self-Assessment requirements of the American Board of Surgery's Continuous Certification program. It is the CME activity provider's responsibility to submit learner completion information to ACCME for the purpose of granting ABS credit. Max of 17.25 Accredited CE MOCs.

You must request your certificate within 45 days of the activity to meet the deadline for submission to PARS. Credits are generally reported during the first week of each month for those who claimed during the month prior.

Click Here to View Disclosures

2024 SCHEDULE

Thursday, September 12

8:00am - 8:30am	**Breakfast in Exhibit Hall** *Zurich Ballroom*
8:30am - 8:45am	**Welcome & Announcements** *Vevey*
8:45am - 9:15am	**Nyhus-Wantz Lecture** *Vevey*
9:15am - 9:45am	**Keynote Lecture** *Vevey*
9:45am - 10:30am	**Presidential Address** *Vevey*
10:30am - 11:00am	**Morning Break in Exhibit Hall** *Zurich Ballroom*
11:00am - 12:30pm	**Across the Pond: Advances in Hernia Surgery** *Vevey*
11:00am - 12:30pm	**Contemporary Strategies for Teaching and Learning** *Montreux 2&3*
11:00am - 11:45am	**Abstract Session – Biomaterials** *St. Gallen 1&2*
12:45pm - 1:30pm	**Lunch & Learn** *St. Gallen 1&2* / Lucerne
1:00pm - 1:30pm	**Attendee Lunch in Exhibit Hall** *Zurich Ballroom*
1:45pm - 3:45pm	**Inguinal Hernia Mastery** *Vevey*
1:45pm - 2:45pm	**Everything But the Operation** *Montreux 2&3*
2:45pm - 3:45pm	**Hernia Research** *Montreux 2&3*
2:45pm - 3:45pm	**Abstract Session - Ventral Hernias** *St. Gallen 1&2*
3:45pm - 4:15pm	**Afternoon Break in Exhibit Hall** *Zurich Ballroom*
4:15pm - 5:45pm	**Live-Cadaveric Dissection** *Vevey*
4:15pm - 5:45pm	**ACHQC** *Montreux 2&3*
4:15pm - 5:45pm	**Abstract Session - Preoptimization and Postoperative Care** *St. Gallen 1&2*
5:45pm - 7:00pm	**Welcome Reception in Exhibit Hall** *Zurich Ballroom*

Friday, September 13

7:30am - 8:15am	**Breakfast-On the Menu** St. Gallen 1&2 / *Lucerne*
8:00am - 8:30am	**Attendee Breakfast in Exhibit Hall** *Zurich Ballroom*
8:30am - 9:30am	**Mini-Conferences** *Vevey*
8:30am - 9:30am	**AW Open Video Session** *Montreux 2&3*
9:30am - 10:30am	**HERnias** *Vevey*
9:30am - 10:30am	**My Resident & I** *Montreux 2&3*
9:30am - 10:30am	**QoL Session** *St. Gallen 1&2*
10:30am - 11:00am	**Morning Break in Exhibit Hall** *Zurich Ballroom*
11:00am - 12:30pm	**AW MIS Video Session** *Vevey*
11:00am - 12:30pm	**Career Building in Abdominal Wall Surgery** *Montreux 2&3*
11:00am - 11:45am	**Abstract Session - Inguinal Hernia Repair** *St. Gallen 1&2*
12:45pm - 1:30pm	**Lunch & Learn** St. Gallen 1&2 / Lucerne
1:00pm - 1:30pm	**Attendee Lunch in Exhibit Hall** *Zurich Ballroom*
1:45pm - 3:45pm	**Planning Your Next Complex Hernia Repair** *Vevey*
1:45pm - 2:45pm	**Understanding Mesh Options in 2024** *Montreux 2&3*
2:45pm - 3:45pm	**Hernia Jeopardy** *Montreux 2 & 3*
2:45pm - 3:45pm	**Abstract Session - How I Do It with Inguinal Hernia Repair** *St. Gallen 1&2*
3:45pm - 4:15pm	**Afternoon Break in Exhibit Hall** *Zurich Ballroom*
4:15pm - 5:45pm	**Where Are We with Diastasis Recti Management?** *Vevey*
4:15pm - 5:45pm	**Emergencies: The Hernia Repair on Call** *Montreux 2&3*
4:15pm - 5:45pm	**Abstract Session - How I Do It with Ventral Hernia Repair** *St. Gallen 1&2*
5:45pm - 6:45pm	**Residents & Fellows Reception** Currents
6:00pm - 7:30pm	**Attendee Reception** *Eleve*

Saturday, September 14

7:30am - 8:15am	**Breakfast-On the Menu** St. Gallen 1&2
8:00am - 8:30am	**Attendee Breakfast in Exhibit Hall** *Zurich Ballroom*
8:30am - 10:30am	**When Things Go Wrong: Presidents Against the Wall** *Vevey*
8:30am - 9:30am	**Mini-Conferences** *Montreux 2&3*
9:30am - 10:30am	**Algorithms/Decision-Making in AWS** *Montreux 2&3*
9:30am - 10:30am	**Video Session - Intercostal and Diaphragmatic Hernias** *St. Gallen 1&2*
10:30am - 11:00am	**Morning Break & Hernia Olympics Final Round in Exhibit Hall** *Zurich Ballroom*
11:00am - 12:30pm	**Quick Hot Topics in AWS** *Vevey*
11:00am - 12:30pm	**Painful for Patients and Surgeons: Chronic Pain Before or After AWS** *Montreux 2&3*
11:00am - 12:30pm	**Abstract Session - Ventral Hernias II** *St. Gallen 1&2*
12:30pm - 1:00pm	**Awards & Business Meeting** *Vevey*

SCIENTIFIC PROGRAM

Thursday, September 12

8:00am - 8:30am
Zurich Ballroom
Breakfast in Exhibit Hall

8:30am - 8:45am
Vevey
Welcome & Announcements

8:45am - 9:15am
Vevey
Nyhus-Wantz Lecture
Introduction: Archana Ramaswamy MD | Loma Linda Veterans Administration Hospital
Presenter:
Yuri Novitsky MD | Columbia Surgery

9:15am - 9:45am
Vevey
Keynote Lecture
Introduction: Flavio Malcher MD, MSc | NYU Langone Health
Implicit Bias in Surgery
Aurora Pryor MD, MBA | Brown University

9:45am - 10:30am
Vevey
Presidential Address
Introduction: Flavio Malcher MD, MSc | NYU Langone Health
Good Enough
Archana Ramaswamy MD | Loma Linda Veterans Administration Hospital

10:30am - 11:00am
Zurich Ballroom
Morning Break in Exhibit Hall

11:00am - 12:30pm
Vevey
Across the Pond: Advances in Hernia Surgery
Moderators:
Filip Muysoms MD, PhD | AZ Maria Middelares
Sonia Ribas MD | CH Póvoa de Varzim-Vila do Conde
Yes We Can! Adopting Robotic AWS in Europe
Mette Willaume MD | Zealand University Hospital, Koege
Peritoneal Flap Technique
Fernando Ferreira MD | Porto CUF Hospital - Portugal
Registries in Abdominal Wall Surgery: Today and the Future
Ferdinand Kockerling MD | Vivantes
TARUP
Maarten Simons MD, PhD | OLVG, Amsterdam
Fasciotens: Could TAR Be On Its Way Out?
Ramana Balasubramaniam MS, DNB | Goulburn Valley Health
Hernia Centers: Defining and Implementing Excellence
Salvador Morales-Conde MD | University Hospital Virgen Macarena
Specialization: The European Experience and the Vision for the Future
Nadia Henriksen MD, PhD | Herlev University Hospital, University of Copenhagen

11:00am - 12:30pm
Montreux 2&3
Contemporary Strategies for Teaching and Learning
Moderators:
Matthew Goldblatt MD | Medical College of Wisconsin
Courtney Collins MD | The Ohio State University Wexner Medical Center

Web-Based Platforms
Vahagn Nikolian MD | Oregon Health & Science University
How and Why to Develop Intraoperative Videos
Lucas Beffa MD | Cleveland Clinic
Web-Based Conferences
Salvador Docimo DO | USF Health
Proctoring, Case Observations and Courses: How and Why?
Jacob Greenberg MD, EdM | Duke Health
Beyond a Hernia Course: How to Build Upon Your Experience
Melissa Phillips MD | UT Medical Center
Improving Resident and Fellowship Education in Hernia Surgery
Abhishek Parmar MD | University of Alabama at Birmingham
Is an AWS Fellowship Mandatory? The Role of Fellowship Training
Megan Melland-Smith MD, MSc | University of Toronto

11:00am - 11:45am
St. Gallen 1&2
Abstract Session - Biomaterials
Moderators:
Kimberly Coughlin MD | Ascension St. John Hospital
Sean Orenstein MD | OHSU

1. Macroscopic and Microscopic Changes Induced by the Application of Mesh Positioned in Different Compartments of the Abdominal Wall in Rats
Fernando Ponce Leon General Surgeon UFRJ | Universidade Federal do Rio de Janeiro
2. Comparative Analysis of Biologic Mesh Outcomes in Abdominal Wall Reconstruction
William Lorenz MD | Atrium Health Carolinas Medical Center
3. Implant Illness: A Patient Survey
Cherin Oh BA | Beverly Hills Hernia Center
4. Cyanoacrylate glue mesh fixation in hernia surgery. A single center experience of postoperative and patient reported outcomes.
Pericles Joseph Chrysocheris MD | Hygeia Hospital
5. Initial report of HERNIACLINIC-qol: Abdominal wall hernia surgery registry from a single center in Brazil – 2 years follow up
Paulo Barros MD | HerniaClinic

12:45pm - 1:30pm
St. Gallen 1&2
Lunch & Learn – BD
Sponsored by BD, all welcome, first come - first served!
Scott Roth MD | University of Kentucky
Priya Rajdev MD | University of Arizona

12:45pm - 1:30pm
Lucerne
Lunch & Learn - My Experience with OviTex Reinforced Tissue Matrix: Even the Most Challenging Hernia Repairs are Possible
Sponsored by TELABio, all welcome, first come - first served!
Marja Boermeester PhD | Amsterdam UMC

1:00pm - 1:30pm
Zurich Ballroom
Attendee Lunch in Exhibit Hall

1:45pm - 3:45pm
Vevey
Inguinal Hernia Mastery
Moderators:
Edward L. Felix MD | Marian Hospital
Marcelo Furtado PhD | Sao Paulo, Brazil

Inguinal Anatomy
Yohann Renard MD, PhD | CHU Robert Debré - Reims
Open Tissue Repair
Megan Melland-Smith, MD | University of Toronto
Open Mesh Repairs
Katherine Cordero MD | Universidad de Costa Rica
Basis for MIS Repair
David Lourie MD | Huntington Health
Strategies for Recurrent Hernias
Conrad Ballecer MD | Creighton Phoenix Division
Inguino-Scrotal Hernias
Dina Podolsky MD | Columbia University Medical Center
Prior Pre-Peritoneal Surgeries
Vahagn C. Nikolian MD | Oregon Health and Science University

1:45pm - 2:45pm
Montreux 2&3
Everything But the Operation
Moderators:
Kamal Itani MD | VA Boston Health Care System, Boston University and Harvard Medical School
Heidi Miller MD | Maine Medical Center

Optimization Pendulum: Has It Swung Too Far in the Opposite Direction?
Mazen Al-Mansour MD | University of Florida
Preoperative Medication Management
Alexandra Maki Erwin MD | Louisville, KY
The Older Patient: Optimizing Outcomes in Geriatric Populations
Sharon Bachman MD, MPH | Inova Health System
When to Say No: End-Stage AW Disease
Todd Heniford MD | Carolinas Medical Center
Ergonomics: Optimizing Hernia Surgery Ergonomics
Arielle Perez MD, MPH, MS | UNC General and Acute Care Surgery Clinic
Postoperative Recovery After Hernia Surgery - What is the Evidence*?*
Megan Nelson MD | Mayo Clinic
ERAS in AWS: Is It Really Necessary?
David Halpern MD | NYU Langone Health

2:45pm - 3:45pm
Montreux 2&3
Hernia Research
Moderators:
Jeremy Warren MD | University of South Carolina School of Medicine Greenville & Prisma Health Upstate
Mary Ann Hopkins MD | NYU Langone Health

Why Don't We Have Higher Quality Data in Hernia Surgery?
Desmond Huynh, MD | Cedars-Sinai Medical Center
Tracking Your Outcomes and Establishing a Surveillance Program
Clayton Petro MD | Cleveland Clinic
Collaborative Research
Monica Polcz MD, MS | Baptist Health South Florida
Funding Opportunities, Partnership with Industry and Keys to Success
Benjamin Poulose MD | The Ohio State University Wexner Medical Center
Impact of PROs on Clinical Practice and Outcomes
John P. Fischer MD | University of Pennsylvania

Hernia Outcomes in Database Studies
Nadia Henriksen MD, PhD | Herlev University Hospital, University of Copenhagen
Key Opinion Leaders vs. Evidence - Influence vs. Data
Kamal Itani MD | VA Boston Health Care System, Boston University and Harvard Medical School

2:45pm - 3:45pm
St. Gallen 1&2
Abstract Session - Ventral Hernias
Moderators:
Wen Hui Tan MD | Medical College of Wisconsin
Rana Higgins MD | Medical College of Wisconsin

6. Abdominal Wall Closure with a Novel Suture Tension Distribution Device after Oncologic Laparotomy
Juan Camilo Correa Cote MD | Clinical Las Americas
7. Postoperative Outcomes of Concurrent Panniculectomy in Ventral Hernia Repair: A Systematic Review and Meta-Analysis
Diego Lima MD, MSc | Federal University of the Southern Border
8. Laparoscopic Repair of Umbilical With Inguinal With Femoral Hernia
Vishakha Patil MD | SMBT IMS RC Dhamangaon Nashik
9. A Study Comparing the Operative Outcomes of Extraperitoneal (eTEP) Retrorectus Access Laparoscopic and Robotic-Assisted Ventral Hernia Repairs
Vivek Bindal MBBS, MS, FNB | Max Healthcare, New Delhi
10. Correlation Between Obesity and Pneumoperitoneum in Initial Trocar Access for eTEP
Nitin Baste MD | SMBT IMS RC Dhamangaon Nashik
11. Results and Analysis of The Implementation of an Abdominal Wall Hernia Service in a Public University Hospital in Brazil
Fernando Ponce Leon MD, MSc, PhD | Universidade Federal do Rio de Janeiro

3:45pm - 4:15pm
Zurich Ballroom
Afternoon Break in Exhibit Hall

4:15pm - 5:45pm
Vevey
Live-Cadaveric Dissection
Moderators:
Andrea Pakula MD | Adventist Health Simi Valley
Leandro Totti Cavazola MD | Universidade Federal do Rio Grande do Sul

Logistics & Future of Cadaveric Training
Jignesh Gandhi MD | KEM Hospital
Retromuscular and TAR
Yuri Novitsky MD | Columbia Surgery
Open Groin & Neurectomies
David Chen MD | UCLA
Anterior Releases/Preperitoneal Dissection/Panniculectomy
Vedra Augenstein MD | Atrium Health

4:15pm - 5:45pm
Montreux 2&3
ACHQC
Moderators:
Arielle Perez MD, MPH, MS | UNC General and Acute Care Surgery Clinic
Nicole White MD | University of Washington

How CPT Coding Has Changed the Landscape of Hernia Surgery - Using the QC to Optimize Patient Outcomes and Reimbursement
Mazen Al-Mansour MD | University of Florida
Long-Term Results of a Randomized Control Trial Comparing Open Retromuscular Keyhole Versus Sugarbaker Parastomal Hernia Repairs with Synthetic Mesh
Petro Clayton MD | Cleveland Clinic

Updates From the Opioid Reduction Task Force - How to Optimize Postoperative Patient Care With Opioid Reduction Strategies
Michael Reinhorn MD | Boston Hernia
Understanding the Interplay of Healthcare Inequities and Hernia Surgery Outcomes - What Can I Do to Optimize Patient Outcomes?
Courtney Collins MD | The Ohio State University Wexner Medical Center
Heavyweight Mesh in Contaminated Fields - Risk/Benefit of Pushing the Limits
Lucas Beffa MD | Cleveland Clinic
What are the Incisional Hernia Trends? Real World Data Over 9 Years from the ACHQC Database
Diego Lima MD, MSc | Montefiore Medical Center

4:15pm - 5:45pm
St. Gallen 1&2
Abstract Session - Preoptimization and Postoperative Care
Moderators:
Jana Sacco MD | University of Florida Jacksonville
Jeffrey Lipman MD | NYU Langone/Bellevue Hospital

12. Limited or Lasting: Is Preoperative Weight Loss Maintained after Open Ventral Hernia Repair?
Alexis Holland MD | Atrium Health Carolinas Medical Center
13. Impact of Glucagon-Like Peptide-1 Agonists in Optimizing Abdominal Wall Reconstruction Patients
Daylon Farias MS | Baylor University Medical Center
14. Age is Just a Number: Sex Is a Greater Predictor of Inguinal Hernia Presentation and Outcomes
Harry Wong MD, MS | Beverly Hills Hernia Center
15. A Review of Post-Operative Care for Ventral Hernia Repair
Jack Nadaud | University of Tennessee, Knoxville
16. Fistulizing Metastatic Squamous Cell Carcinoma: An Acceptable Cost of Over-optimization in Ventral Hernia Repair?
Kara Button DO | Maine Health
17. Is Sarcopenia Associated with Worse Outcomes Following Ventral Hernia Repair? A Systematic Review and Meta-Analysis
Carlos Silveira MD | Montefiore Medical Center
18. Does Progressive Preoperative Pneumoperitoneum Aid Fascial Closure in Loss of Domain Hernias? A Retrospective Review
Benjamin Reed MD | Prisma Health System, University of South Carolina School of Medicine
19. Six Months of Patient Optimization Reduces the Risks of Complications in Abdominal Wall Reconstruction Surgery
Tara Ranjbar MD | Northwell Health
20. Assessment of Risk Factors for Incisional Hernia (IH): A Meta-Analysis of Retrospective Cohort Studies with Development of a Predictive Scale"
Luis Fernández Vázquez-Mellado MD | IMSS Bienestar Hospital regional de Alta Especialidad del Bajio
22. Transversus Abdominis Plane (TAP) Block for Postoperative Pain Management after Ventral Hernia Repair: A Systematic Review and Meta-analysis
Ana Caroline Rasador MD | Montefiore Medical Center

5:45pm - 7:00pm
Zurich Ballroom
Welcome Reception in Exhibit Hall

Friday, September 13

7:30am - 8:15am
Lucerne
Breakfast-On the Menu: Corza

7:30am - 8:15am
St. Gallen 1&2
Breakfast-On the Menu: Duramesh Mesh Suture: Think Beyond the Common Thread
Sponsored by Mesh Suture – all welcome, first come - first served!
Gregory Dumanian MD | Northwestern Medicine
Eric Pauli MD | Penn State Health

8:00am - 8:30am
Zurich Ballroom
Attendee Breakfast in Exhibit Hall

8:30am - 9:30am
Vevey
Mini-Conferences
Moderators:
Igor Belyansky MD | Luminis Health
Kaela Blake MD | University of Tennessee Medical Center
Component Separation: Where Are We After 20 Years?
Fernando Ferreira MD | Porto CUF Hospital - Portugal
The EMB for Robotics in Modern Abdominal Wall Surgery
Manuel Lopez-Cano MD | University Hospital Vall d'Hebron

8:30am - 9:30am
Montreux 2&3
AW Open Video Session
Moderators:
Hobart Harris MD, MPH | UCSF
Vedra Augenstein MD | Atrium Health
Flank Hernia
Rana Higgins MD | Medical College of Wisconsin
Transversus Abdominis Release
Kimberly Coughlin MD | Ascension St. John Hospital
Anterior Component Separation
Michael Wes Love MD | Prisma Health
Pre-Peritoneal Repair
Brittany Mead MD | Atrium Health
Intra-Operative Fascial Traction
Sonia Ribas MD | CH Póvoa de Varzim-Vila do Conde
Open Tissue Repair Inguinal Hernia Repair
Michael Rosen MD | Cleveland Clinic
AHS SAFE STEPS: The Amid-Lichtenstein into Practice
Natália Pascotini Pereira MD | Oswaldo Cruz German Hospital

9:30am - 10:30am
Vevey
HERnias
Moderators:
Jenny Shao MD | University of Michigan
Nadia Henriksen MD, PhD | Herlev University Hospital, University of Copenhagen
Consideration of Sex and Its Importance/Impact on Hernia Repair
Gina Adrales MD, MPH | Johns Hopkins University School of Medicine
Differences in Hernia Outcomes and QOL Based on Gender: What Are We Missing?
Dina Podolsky MD | Columbia University Medical Center

Inguinal Pathology: Optimal Ways to Diagnose, Approach, and Repair
Flavio Malcher MD, MSc | NYU Langone Health
Technical Considerations for Ventral Hernia Repair in Women
Hany Takla MD | Orlando Health
Hernia Repair During Pregnancy or Women of Child-Bearing Age
Ivy Haskins MD | University of Nebraska Medical Center
Mesh Considerations in Female Patients
Charlotte Horne MD | PennState Health
Cosmesis & Hernia Surgery: Is It Just a Hernia Repair?
Kaela Blake MD | University of Tennessee Medical Center

9:30am - 10:30am
Montreux 2&3
My Resident & I
Moderators:
Conrad Ballecer MD | Creighton Phoenix Division
Bonnie Lee MD | University of South Alabama

A Residents Guide to Navigate the Learning Curve of Robotic Inguinal Hernia Repair
Nick Hrdlicka MD | Memorial Health University Medical Center
Simultaneous Surgical Management of Incisional Hernia and Ureteral Stenosis Following Kidney Transplant
Chi Zhang MD | Mayo Scottsdale
Robotic eTEP Abdominal Wall Reconstruction
Gina Kim MD | University of Southern Alabama
Open Thoracoabdominal Hernia Repair
Eric Moyer MD | Penn State
Robotic Repair of a Thoracoabdominal Hernia
Michael Turturro MD | Columbia University
Robotic Transabdominal Subdiaphragmatic Retrorectus Repair (TASDRR) of a Large Epigastric Hernia
Amber Sandoval MD | Banner University Medical Center
Robotar For A Multiply Recurrent Incisional Hernia
Alice Gamble MD | Tampa General Hospital
Open Preperitoneal Abdominal Wall Reconstruction
Alynna Wiley MD | Atrium Health
The Perils of Plug and Patch: A Case of Migration of Inguinal Mesh Plug Causing Strangulated Hernia
Michael Stolz MD | Hackensack University
Robotic Repair of an Anterior Perineal Hernia
Mark Bailey MD | UCLA

9:30am - 10:30am
St. Gallen 1&2
QoL Session
Moderators:
Salvatore Docimo DO | USF Health
Monica Polcz MD | Baptist Health South Florida

Introduction to Quality of Life in Hernia Repair
Alice McDonald DO | University of South Florida
A Review of Quality of Life Grading Scales
Hobart Harris MD | UCSF
Implementing QoL Measurements into Ventral Hernia Repairs
Nicole White MD | University of Washington
Implementing QoL Measurements into Inguinal Hernias Repairs
Filip Muysoms MD, PhD | AZ Maria Middelares
QoL and Recurrence - Future of Evaluating Hernia Outcomes?
John P. Fischer MD | University of Pennsylvania

10:30am - 11:00am
Zurich Ballroom
Morning Break in Exhibit Hall

11:00am - 12:30pm
Vevey
AW MIS Video Session
Moderators:
Agustin Ignacio Alvarez Plaza MD | Clinica Santa Maria
Samuel Szomstein MD | Cleveland Clinic

Laparoscopic Intracorporeal Rectus Aponeuroplasty and More
Salvador Morales-Conde MD | University Hospital Virgen Macarena
Totally Extra Pre-Peritoneal
Hector Valenzuela Alpuche MD | Cirugia y Salud Digestiva
MILA
Ezequiel Palmisano MD | Instituto Metropolitano
Single-Dock Bilateral TAR
Xavier Pereira MD | NYU Langone Health
Robotic ACS
Eduardo Parra-Davila MD | Good Samaritan Medical Center
Sub-Xiphioid Hernia
Flavio Malcher MD, MSc | NYU Langone Health
Intercostal Hernia
Sabrina Drexel MD | Northwest Minimally Invasive Surgery
Lumbar Hernia
Alexander Morrell MD | Sao Paulo, Brazil
Parastomal Hernia
Monica Polcz MD | Baptist Health South Florida
Robotic Extended Transabdominal Preperitoneal (eTAPP) Ventral Hernia Repair
Brian Fry MD, MS | Michigan Medicine

11:00am - 12:30pm
Montreux 2&3
Career Building in Abdominal Wall Surgery
Moderators:
Charlotte Horne MD | PennState Health
Vahagn C. Nikolian MD | Oregon Health and Science University

Focused Practice Designation
Ivy Haskins MD | University of Nebraska Medical Center
Hernia Billing, Beyond the RVUs: Alternative Strategies for Reimbursement in AWS
Philip George MD | Columbia University
Establishing a Private Practice: Pearls & Pitfalls
Michael Reinhorn MD, MBA | Boston Hernia
Improving Diversity in Hernia Surgery (HeForShe, ILookLikeASurgeon, DEI)
Jacob Greenberg MD, EdM | Duke Health
Academic Careers in Hernia Surgery
Gregory Dumanian MD | Northwestern Medicine
Landing Your First Job: Contracts and more
Ryan Juza MD | Medical College of Wisconsin School of Medicine and Public Health

11:00am - 11:45am
St. Gallen 1&2
Abstract Session - Inguinal Hernia Repair
Moderators:
Brian Jacob MD | Laparoscopic Surgical Center
Pilar Hernandez-Granados MD | SERMAS

23. Treating the Female Indirect Inguinal Hernia by Using Single-Port Laparoscopic Percutaneous Internal Ring Suture – From Children To Adults
Shihhsien Wang MD, PhD | ChangGung Memorial hospital, Chiayi

24. Transabdominal Preperitoneal Inguinal Hernia Repair with the Dexter® Robotic System: Setup Description with Safety and Performance Data
Lukas Gantner MD | Cantonal Hospital of Winterthur
25. Are Femoral Hernias Slipping Through the Cracks in Women? A Systematic Review and Proportional Meta-Analysis
Ana Caroline Rasador MD | Montefiore Medical Center
26. Do Female Patients Suffer Worse Outcomes than Male Patients after Inguinal Hernia Repair? An ACHQC Study
Sunjay Kumar MD | Thomas Jefferson University Hospital
27. Operative Recurrence After Inguinal Hernia Repair and Healthcare Expenditures: Propensity Score Matched Analysis of Large US Claims Database
Luis Arias Espinosa MD | New York University Langone Health

12:45pm - 1:30pm
St. Gallen 1&2
Lunch & Learn - Mastering the Art of Hernia Repair with da Vinci 5
Sponsored by Intuitive - all welcome, first come - first served!
Flavio Malcher MD, Msc | New York University Langone Health
Andrea Pakula MD, MPH | Adventist Health Simi Valley, CA
Michael Blea MD | Lovelace Medical Group

12:45pm - 1:30pm
Lucerne
Lunch & Learn - Algorithm of Ventral Hernia Repair
Sponsored by Medtronic - All welcome, first come - first served!
Moderator: David Chen MD | UCLA Health
Panelists:
Matthew Goldblatt MD | Medical College of Wisconsin
Brian Jacob MD | Laparoscopic Surgery Center of New York
Archana Ramaswamy MD | VA Loma Linda Healthcare System

1:00pm - 1:30pm
Zurich Ballroom
Attendee Lunch in Exhibit Hall

1:45pm - 3:45pm
Vevey
Planning Your Next Complex Hernia Repair
Moderators:
Todd Heniford MD | Carolinas Medical Center
John P. Fischer MD | University of Pennsylvania
Preoperative Imaging Predictive Models
Eric Pauli MD | Penn State Health Milton S. Hershey Medical Center
Risk Stratification and AI
Vinayak Rengan MBBS, MS | Curiam.life
Multi-Recurrent Ventral Hernias: Managing Old Mesh and Prior Sublay Repairs
Bola Aladegbami MD, MBA | Baylor, Scott & White
Iatrogenic Abdominal Wall Injuries: Denervation, Avulsions, and Atypical Hernias
Joana Fernandez Correia MD | Pedro Hispano Hospital
Skin and Soft Tissue Considerations: Panniculectomy, Tissue Rearrangement, Expanders
Antonio Espinosa de los Monteros MD | National Institute of Medical Sciences and Nutrition - Mexico City
Concurrent Procedures: Visceral Resections, Oncologic Resections, GYN & GU
Jana Sacco MD | University of Florida - Jacksonville
BTA + PPP
Bonnie Lee MD | University of South Alabama

1:45pm - 2:45pm
Montreux 2&3
Understanding Mesh Options in 2024
Moderator(s):
Sharon Bachman MD, MPH | Inova Health System
Fareed Cheema MD | NYU Langone

Mesh Constructs - Permanent Materials
Sean Orenstein MD | Oregon Health and Science University
Biologic and Bioresorbable Meshes: Here to Help or Not?
Jenny Shao MD | University of Michigan
The Mesh or the Mesher: Mesh Complications and Litigation
Artem Shmelev MD | Stony Brook Medicine
Putting Ourselves in Others' Shoes: The Patient Perspective
Shirin Towfigh MD | Beverly Hills Hernia Center
Does Mesh Size Matter? A Mesh to Defect Overlap to Evaluate Ventral Hernia Recurrence Using the ACHQC Database
Diego Lima MD, MSc | Montefiore Medical Center

2:45pm - 3:45pm
Montreux 2 & 3
Hernia Jeopardy
Hosts:
Talar Tejirian MD | Kaiser Permanente
Gabriel Arevalo MD | Houston Methodist Willowbrook

2:45pm - 3:45pm
St. Gallen 1&2
Abstract Session - How I Do It with Inguinal Hernia Repair
Moderators:
Mary Ann Hopkins MD | NYU Langone
Natália Pascotini Pereira MD | Oswaldo Cruz German Hospital

28. Loss of Domain Inguinoscrotal Hernia Repair with Preoperative Pneumoperitoneum
Patrick Vallance MD | McGovern Medical School at UT Health Houston
29. Robotic Transabdominal Preperitoneal Inguinal and Umbilical Hernia Repair
Katherine Hoener DO | Creighton University, Arizona
30. De Garengeot Hernia: A Rare Form of Appendicitis Within Femoral Hernia (Case Report)
Fridien Tchoukoua DO | Inspira Medical Center
31. Hernia Sac Management in Minimally Invasive Inguinal Hernia Repair: Abandonment or Reduction? An Updated Systematic Review and Meta-Analysis
Carlos Silveira MD | Montefiore Medical Center
32. Laparoscopic eTEP in Giant Type 2 InguinoscrotalHernia- Case Study
Vinod Patil MBBS | SMBT IMS RC Dhamangaon Nashik
33. Robotic Inguinal Hernia Repair After Transverse Rectus Abdominis Muscle (TRAM) Flap Reconstruction
Jamie Benson MD | University of Wisconsin

3:45pm - 4:15pm
Zurich Ballroom
Afternoon Break in Exhibit Hall

4:15pm - 5:45pm
Vevey
Where Are We with Diastasis Recti Management?
Moderators:
Christiano Claus MD, PhD | Nossa Senhora das Graças Hospital
Katherine Cordero MD | Universidad de Costa Rica

Linea Alba and DR Anatomy
Yohann Renard MD, PhD | CHU Robert Debré - Reims

DR and Abdominal Wall Function: Fact vs. Myth
Philip George MD | Columbia University
Management of DR Associated With Ventral Hernia
Pilar Hernandez-Granado MD | Fundacion Alcoron University Hospital
Open Approaches - When and How
Heidi Miller MD | Maine Medical Center
MIS Approaches - Which One and How
Prashanth Sreeramoju MBBS | Montefiore-Einstein Medical Center
Step-By-Step Posterior Robotic DR Repair
Ihsan Inan MD | FMH Swiss Board General and Digestive Surgery
Plastic or General Surgeon? Together or Against?
Kelly Bolden MD | Howard University
Outcomes of THT Repair of Rectus Abdominis Diastasis and Midline Defects with Poly 4-Hydroxybutyrate Mesh
Giorgio Soliani MD | University of Ferrara

4:15pm - 5:45pm
Montreux 2&3
Emergencies: The Hernia Repair on Call
Moderators:
Lucas Beffa MD | Cleveland Clinic
Diego Camacho MD | Montefiore-Einstein Medical Center

The Strangulated Inguinal Hernia
Pedro Henrique Amaral MD| Santa Casa de Sao Paulo
The Obstructed and Recurrent Ventral Hernia
Kathryn Schlosser MD | Beth Israel Deaconess - Plymouth
The Postoperative SBO
Prashant Sinha MD | Northwell Health
The Perforated Viscus in the Hernia
Andrea Pakula MD, MPH | Adventist Health Simi Valley, CA
Mesh vs. Primary Repair in the Emergent Setting
Crystal Totten MD | University of Kentucky
Unique Complications in AWR
Ramesh Punjani MS | Fortis Healthcare, Mumbai, India
Strangulated Garengeot's Hernia
Nicolas Ramos MD | Asociación Española- Montevideo- Uruguay

4:15pm - 5:45pm
St. Gallen 1&2
Abstract Session - How I Do It with Ventral Hernia Repair
Moderators:
Dina Podolsky MD | Columbia University Medical Center
William Hope MD | Novant Health

34. Robotic Total Extraperitoneal Sublay Anterior Repair for Midline Incisional Hernia
Michael Turturro MD | Columbia University
35. Robotic Sugarbaker for Ileal Conduit Parastomal Hernia - Complication and Management
Kimberly Woo MD | Cleveland Clinic Foundation
36. Robotic eTEP TAR for M1, L1, L2 Incisional Hernia Following Liver Transplantation
Andrew Kinahan MD | Creighton University, Arizona
37. Hybrid Laparoscopic and Open Perineal and Parastomal Hernioplasty Procedure
Raul Rodriguez | Hernia Especialistas
38. Robotic Sugarbaker Repair of a Multiply Recurrent Paraurostomy Hernia
David Morrell MD | Columbia University
39. Open Repair of Complex Incarcerated Ventral Incisional Hernia with Loss of Domain using Duramesh Suture
Dalya Ferguson MD | McGovern Medical School at UT Health Houston
40. Transabdominal Pre-peritoneal Repair of Arcuate Line Hernia
Jennifer Pan MD | New York University Long Island School of Medicine

41. Intermediate Outcomes of Mesh-Suture Repair in the Treatment of Ventral Hernias
McKell Quattrone MD | Penn State Health Milton S. Hershey Medical Center
42. Giant Ventral Hernia with Ischemia-Induced Colonic Atony
Jamie Benson MD | University Hospitals Cleveland Medical Center
43. Robotic Flank Hernia Repair: A Single-Institution Case Series
Margaux Mustian MD, MSPH | University of Alabama at Birmingham
44. Double Dock Robotic Preperitoneal Hernia Repair for a M1-M3-W3 Incisional Hernia. Saving Transversus and Retrorectus Space
Hector Valenzuela MD | Hospital Angeles Del Carmen

5:45pm - 6:45pm
Residents & Fellows Reception
Currents

6:00pm - 7:30pm
Reception
Eleve
Sponsored by TELABio - all welcome!

Saturday, September 14

7:30am - 8:15am
St. Gallen 1&2
Breakfast-On the Menu: Ready or Not: The NOPAIN Act Is Coming January
Sponsored by Pacira - All welcome, first come - first served!

7:30am - 8:15am
Lucerne
Breakfast-On the Menu: Integra LifeSciences
Sponsored by Integra LifeSciences - All welcome, first come - first served!

8:00am - 8:30am
Zurich Ballroom
Attendee Breakfast in Exhibit Hall

8:30am - 10:30am
Vevey
When Things Go Wrong: Presidents Against the Wall
Moderators:
Shirin Towfigh MD | Beverly Hills Hernia Center
Alexander Morrell MD | Sao Paulo, Brazil
Archana Ramaswamy MD | Loma Linda Veterans Administration Hospital
David Chen MD | UCLA Health
William Hope MD | Novant Health
Michael Rosen MD | Cleveland Clinic
Gina Adrales MD, MPH | Johns Hopkins University School of Medicine
Benjamin Poulose MD | The Ohio State University Wexner Medical Center

8:30am - 9:30am
Montreux 2&3
Mini-Conferences
Moderators:
Eduardo Parra-Davila MD | Good Samaritan Medical Center
Courtney Collins MD | The Ohio State University Wexner Medical Center
AI and AWS: Where Are We REALLY Going?
Todd Heniford MD | Carolinas Medical Center
Biostatistics in AWS: Why Are We Doing it Wrong?
Neil Smart MD, PhD | Royal Devon and Exeter Hospital

9:30am - 10:30am
Montreux 2&3
Algorithms/Decision-Making in AWS
Moderators:
Manuel Lopez-Cano MD | University Hospital Vall d'Hebron
Ramana Balasubramaniam MS, DNB | Goulburn Valley Health

Complex Inguinal Hernia
Jorge Daes MD | Clinical Portoazul
Primary Ventral Hernias
Victoria Rendell MD | University of Wisconsin School of Medicine and Public Health
Diastasis Recti
Leandro Totti Cavazola MD | Universidade Federal do Rio Grande do Sul
Incisional Midline Defects
Flavio Malcher MD, MSc | NYU Langone Health
Loss of Domain
Brittany Mead MD | Atrium Health
Lumbar Hernias
Jeffrey Lipman MD | NYU Langone Health
Athletic Pubalgia
Aali Sheen MD | Manchester Surgical Clinic
Mesh Choices for AWR
Matthew Goldblatt MD | Medical College of Wisconsin

9:30am - 10:30am
St. Gallen 1&2
Video Session - Intercostal and Diaphragmatic Hernias
Moderators:
Joana Correia MD |Pedro Hispano Hospital
David Halpern MD | NYU Langone Hospital - Long Island

45. Multiply Recurrent Left Diaphragmatic Hernia Repair
Diana Jimenez MD | Cleveland Clinic Foundation
46. Robotic TAPP for Left L1-L4 Intercostal Hernia
Luke Swaszek MD | Stony Brook University
47. Robotic Unilateral TAR for a Large Intercostal Lumbar Hernia
Nicole Salevitz MD, MHS | Creighton University, Arizona
48. Non-Traumatic Large Transdiaphragmatic Intercostal and Flank Hernia with Gastric Outlet Obstruction: A Case Report
Peyton Murdock MD | University of Tennessee, Knoxville
49. roboTAR for Recurrent Ventral Midline Incisional Hernia, Congenital Morgagni Hernia, and Right Spigelian Hernia
Kyle Leong DO | Creighton University, Arizona
50. Robotic Transabdominal Preperitoneal Lumbar Incisional Hernia Repair
Katherine Hoener DO | Creighton University, Arizona

10:30am - 11:00am
Zurich Ballroom
Morning Break & Hernia Olympics Final Round in Exhibit Hall

11:00am - 12:30pm
Vevey
Quick Hot Topics in AWS
Moderators:
Mette Williaume MD, PhD | Zealand University Hospital, Koege
Xavier Pareira MD | NYU Langone

Understanding the Semilunar Line
Yohann Renard MD, PhD | CHU Robert Debré - Reims
Management of the Posterior Sheath: Is Closure Necessary?
Igor Belyansky MD | Luminis Health

eTEP: We Can Go So Far!
Rahul Mahadar MD | Jeevanshree Hospital Minimal Access Surgery Center
eTEP: Have We Gone Too Far?
Victor Radu MD | Life Memorial Hospital, Medlife
TAR as a Means of Anterior Fascial Reapproximation: Fact or Fiction?
Benjamin Miller MD | Cleveland Clinic
The DIEP and TRAM Flap Hernias - What You Should Know
Sharad Sharma MD | Fortis Hospital, Navi Mumbai, India
Fistula Management: To Stage or Not to Stage?
Marja Boermeester MD, PhD | Amsterdam UMC
Inguinoscrotal Sac Management: Sac Reduction vs. Primary Sac Abandon
Christiano Claus MD | Nossa Senhora das Gracas Hospital
To Close or Not to Close: The Large Inguinal Hernia Defect Dilemma
Agustin Ignacio Alvarez Plaza MD |Clinica Santa Maria
Why Do We Still Fixate Mesh in MIS Inguinal Hernia Repair?
Pilar Hernandez-Granado MD | Fundacion Alcorcon University Hospital

11:00am - 12:30pm
Montreux 2&3
Painful for Patients and Surgeons: Chronic Pain Before or After AWS
Moderators:
David Chen MD | UCLA Health
Megan Nelson MD | Mayo Clinic

Is it Sports Hernia or Athletic Pubalgia? Proper Diagnosis and Management
Osvaldo Santilli MD | University of Buenos Aires
Prevention and Medical Management of PO Inguinal Chronic Pain
Aali Sheen MD | Manchester Surgical Clinic
Groin Mesh Explantation and Neurectomy: When and How
Ian MacQueen MD | Lichtenstein Amid Hernia Clinic at UCLA
ACNES
Kathryn Schlosser MD | Beth Israel Deaconess - Plymouth
Strategies to Manage Chronic Abdominal Pain After Complex AWR
Davide Lomanto MD | National University Health System
Listening and Understanding the Other Side: The Patient's Perspective
Brian Jacob MD | NYC Hernia
Hybrid Operative Approach for Chronic Groin Pain with Mesh Removal
Vanessa Buie MD, MBA | Mount Sinai Health System, Icahn School of Medicine

11:00am - 12:30pm
St. Gallen 1&2
Abstract Session - Ventral Hernias II
Moderators:
Nadia Henriksen MD, PhD | Herlev University Hospital, University of Copenhagen
Sabrina Drexel MD | Northwest Hernia Center

51. National Trends in Patient Demographics and Readmission after Elective Open Ventral Hernia Repair
William Lorenz MD | Atrium Health Carolinas Medical Center
52. Transabdominal Preperitoneal (TAPP) versus Intraperitoneal Onlay Mesh (IPOM) for Ventral Hernia Repair: An Updated Systematic Review and Meta-analysis
Ana Caroline Rasador MD | Bahiana School of Medicine and Public Health
53. Trends in Parastomal Hernia Repair – A 7-year National Review
Ashley Tran MD | Keck School of Medicine of USC
54. The Evolving Applications of Laparoscopic Intracorporeal Rectus Aponeuroplasty (LIRA) in Ventral Hernia Repair – A Systematic Review
Diego Lima MD, MSc | Montefiore Medical Center
55. Robotic Sugarbaker Parastomal Hernia Repair: Updated Series and Outcomes
Monica Polcz MD, MS | Atrium Health Carolinas Medical Center

56. Concomitant Gynecologic Procedures During Ventral Hernia Repair: Similar Outcomes to Hernia Repair Alone
Flavio Malcher MD, MSc | New York University Langone Health
57. Operative vs Non-Operative Management of Ventral Hernia: A Population Based Study of Long-Term Benefits and Consequences
Sourav Podder MD | Thomas Jefferson University Hospital
58. Midline Bulge After Robotic Ventral Hernia Repair via Retrorectus Approach
Jennifer Pan MD | New York University Long Island School of Medicine
59. Open versus Robotic Transversus Abdominis Release for Ventral Hernia Repair: An Updated Systematic Review and Meta-Analysis
Diego Lima MD, MSc | Montefiore Medical Center

12:30pm - 1:00pm
Vevey
Awards & Business Meeting

ORAL ABSTRACTS

1. Macroscopic And Microscopic Changes Induced By The Application Of Mesh Positioned In Different Compartments Of The Abdominal Wall In Rats

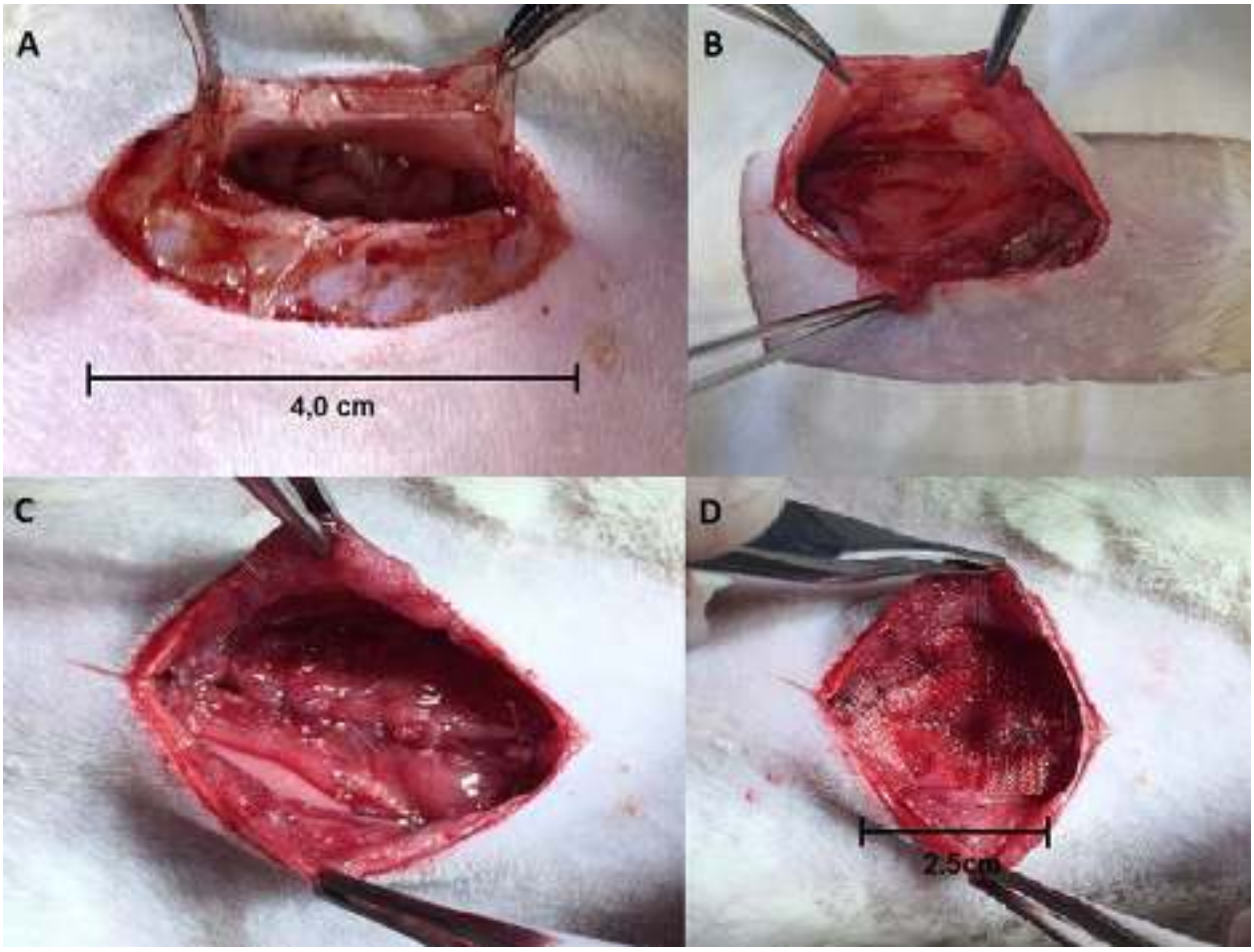
F Ponce Leon, N Barros, B Figueiredo, J Costa, J Manso
Universidade Federal do Rio de Janeiro

Background: Incisional hernia occurs when there is partial or total continuity of a previously incised and sutured fascia at the site of a previous surgical incision. Systematic reviews show that surgical treatment of incisional hernias has recurrence rates of approximately 16 to 24%. Meta-analyses have demonstrated the superiority of mesh positioning in hernia repairs in the retromuscular compartment, especially regarding the lower incidence of complications and recurrences, but without a pathophysiological explanation for this technique. We aimed to evaluate how the different techniques for mesh positioning on the abdominal wall in an experimental model can module the healing mechanisms.

Methods: Fifty Wistar rats were divided into five groups; control (CT) - no surgery; simulation (SM) - rats submitted to laparotomy, opening of the abdominal wall followed by primary synthesis with continuous suture; supra-aponeurotic (OL) – after laparotomy, the polypropylene mesh was positioned in a onlay fashion; retromuscular group (SL) – mesh positioned in a sublay fashion; intraperitoneal group (IPOM) – placement of the mesh adjacent to the fascia transversalis. Sixty days after, the animals were euthanized and adhesions formed were evaluated macroscopically, abdominal wall tensiometry was measured and histopathological evaluation was performed. The amount of collagen was verified, and the intensity of macrophage infiltration was measured through immunohistochemistry. Kruskal Wallis test followed by the Dunn or Tukey post-test for comparison between the groups was done as statistical analysis. Differences were considered significant when $p < 0.05$

Results: IPOM group exhibited more adhesions with significantly relevant results. The SL group had the highest values in the tensiometric evaluation. It was verified that the SL group had a greater number of polynucleated cells ($p < 0.05$ and $p < 0.01$ in comparison to the OL and IPOM groups, respectively). The IPOM group exhibited a greater number of multinucleated giant cells ($p < 0.005$). Greater amount and density of collagen were seen in the SL group, significantly ($p < 0.01$ and $p < 0.001$ SL vs OL and SL vs IPOM, respectively), as well as pixel counts compared to the groups, with statistical significance. The SL group exhibited a significant increase in CD68+ macrophages ($p < 0.001$) in addition to a greater number of macrophages polarized to M2 ($p=0.004$). The IPOM group also showed a higher M1 quantity compared to the SM group ($p < 0.05$).

Conclusion: The presence of the mesh in the retromuscular technique compartment caused an increase in tensiometry compared to the other groups. The intraperitoneal group presented tensiometry values lower than expected, with a greater intensity of tissue adhesions. The histological findings lead to the inference of an optimized signaling of fibrogenesis with the positioning of the mesh in the retromuscular compartment. The results of macrophage phenotyping demonstrated that both M1 and M2 macrophages are present in the mesh implantation site, regardless of their positioning. In conclusion, we can state that the positioning of the mesh in the retromuscular space generates an optimized fibrogenesis, leading us to infer that there will be greater efficiency in the reinforcement of the abdominal wall performed.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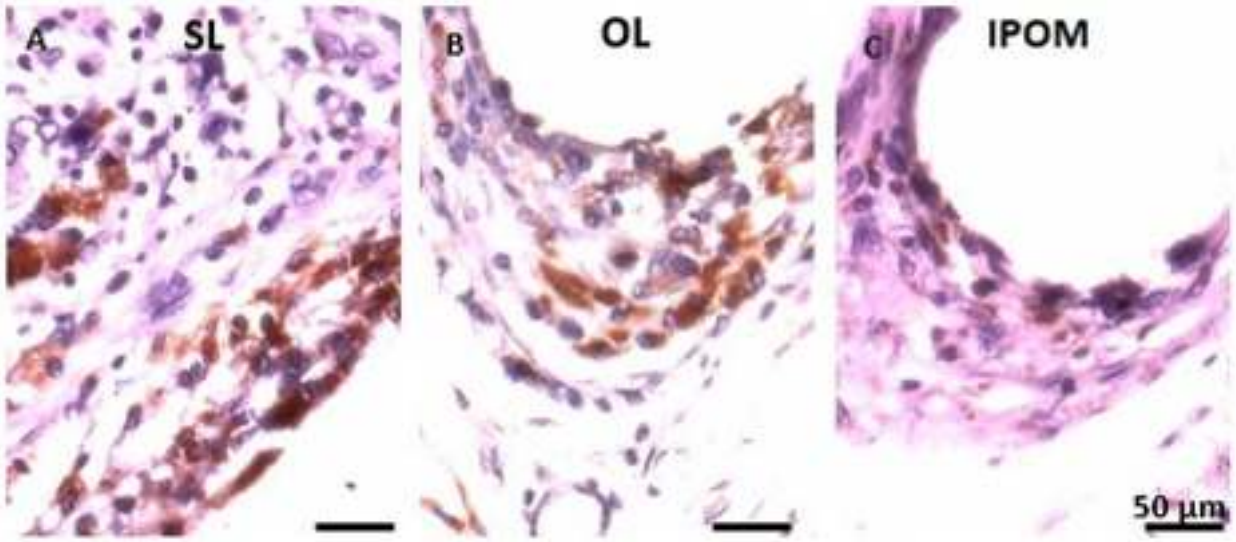
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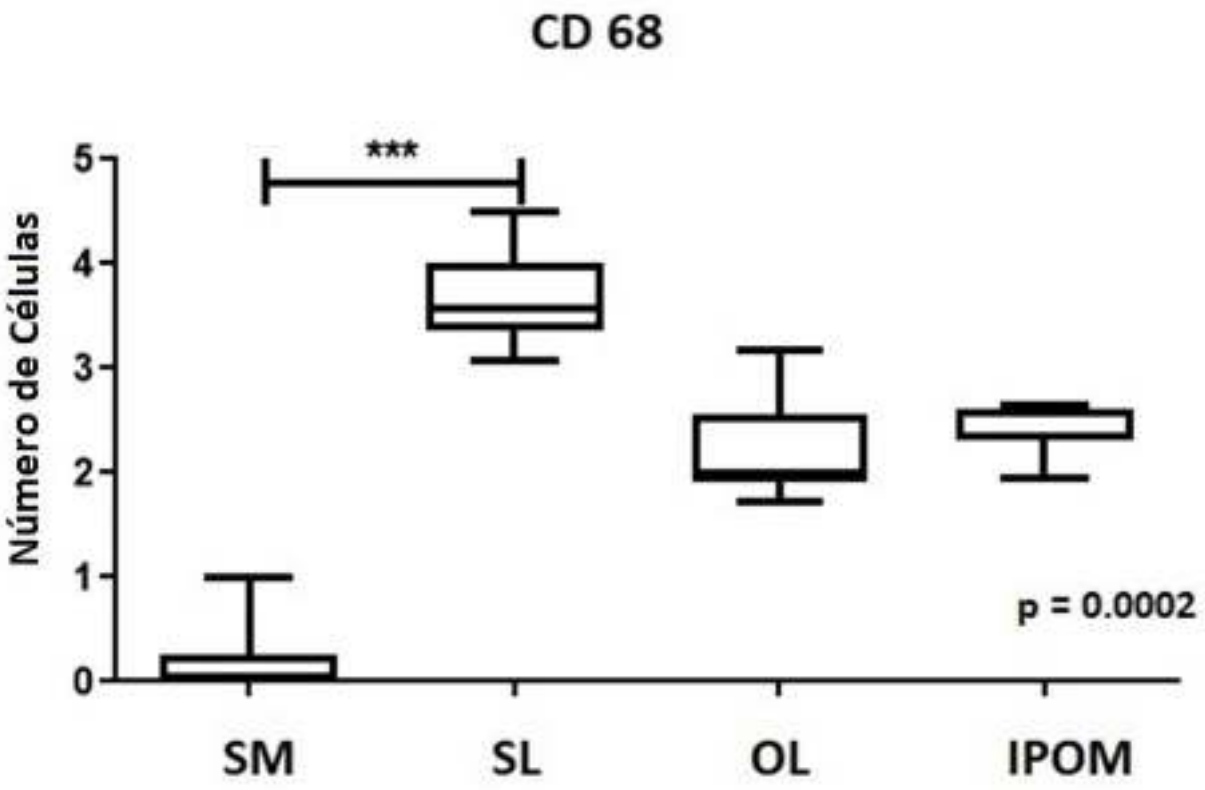
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2. Comparative Analysis Of Biologic Mesh Outcomes In Abdominal Wall Reconstruction

W Lorenz, A Holland, S Ayuso, G Scarola, B Heniford, V Augenstein
Atrium Health Carolinas Medical Center

Background: Mesh choice remains an active point of debate in abdominal wall reconstruction (AWR). Prior work at our institution demonstrated that biologic mesh provides a durable repair with similar outcomes to synthetic mesh across wound classes. There are variations in the origin of the graft (porcine vs bovine vs human), tissue source (dermis vs submucosa), and how the graft is processed (uncrosslinked or crosslinked to a varying degree). In 2016, our group published a review of single center biologic mesh outcomes; the purpose of the current study was to re-evaluate the durability of these repairs with long-term follow-up in a larger sample size.

Methods: A prospectively maintained institutional database was queried for patients who underwent AWR with biologic mesh between 2003-2023 and were stratified into Strattice or other biologic mesh (BioM) groups, which included FlexHD(50.0%), Xenmatrix(23.9%), Alloderm (21.7%), Permacol (2.2%), and Bovine patch (2.2%). Patients with bridging repair were excluded. Captured datapoints included patient demographics, intraoperative details, specifically, hernia details and mesh type, and postoperative outcomes. Standard descriptive and inferential statistics were performed. The primary outcome was recurrence; the secondary outcome was the rate of wound complications.

Results: In total, 380 patients were included; 334 with Strattice mesh were compared to 46 with other biologic mesh. Age, BMI, and comorbidities including history of chronic obstructive pulmonary disease(COPD) and diabetes were similar between groups (all P>0.05). Defect size was larger in Strattice (275.1±157.3 vs 158.4±133.8 cm2; P< 0.001), and mesh size was similar (638.4±281.6 vs 449.2±289.9 cm2; P=0.495). The rate of concomitant panniculectomy (24.9%vs26.1%; P=0.856) and component separation (57.8%vs43.5%; P=0.067) were similar between groups. There was no difference in wound class or operative time between groups. The Strattice group had a shorter length of stay but greater hospital charges. The overall wound complication rate was lower in the Strattice group (24.3%vs39.1%; P=0.031), and individually wound breakdown (9.0%vs21.7%; P=0.008) and wound infection (9.3%vs21.7%; P=0.011) were significantly lower in the Strattice group, but cellulitis (5.7%vs6.5%; P=0.821), seroma requiring intervention (9.3%vs17.4%; P=0.089), and mesh infection (1.2%vs2.2%; P=0.477) were not significantly different. Mean follow-up was 22.9±23.3 and 35.6±41.4 months for Strattice and BioM, respectively (P=0.559). Hernia recurrence was significantly lower in the Strattice group (5.4%vs19.6%; P< 0.001).

On multivariable regression for recurrence, BioM (OR[95%CI]: 3.514[1.323,9.332]; P=0.012) and wound complications (3.404[1.523,7.609]; P=0.003) were predictors of recurrence.

Conclusion: When compared to BioM, Strattice was used in more complex AWR but had similar overall rate of wound infections and a significantly lower recurrence rate. The only identified predictors of recurrence was the use of a BioM other than Strattice and wound complications. Strattice continues to have lower recurrence rates when compared to other biologic prothesis with an extended follow-up.

3. Implant Illness: A Patient Survey

C Oh, D Huynh, S Towfigh
Beverly Hills Hernia Center

Background: Implant Illness, formally known as ASIA or Schoenfeld's syndrome, is a poorly defined reaction to implants which manifests as adverse systemic symptoms due to a foreign body. We aim to survey patients who report ASIA (Autoimmune/Autoinflammatory Syndrome Induced by Adjuvants) after their implantation surgery to help qualify their symptoms and better understand the patient's complaints

Methods: An anonymous Implant Reaction survey was distributed on a wide range of social media platforms and with implant related patient advocacy groups. Patients self-identified to have undergone foreign body implants. They were surveyed about the type of implant and the adverse symptoms following the implant.

Results: 815 patients with surgical implants completed the survey. Patients were predominantly female (87.4%) with a mean age of 56.2 years and mean BMI of 27.6 kg/m2. Of the respondents, 302 (37.1%) had a pre-implantation diagnosis of an autoimmune disorder, and 90 (14.5%) reported a family history of autoimmune disorder.

Implanted products included hernia mesh, pelvic mesh, breast implants, dental implants, joint replacements, surgical clips, and other gynecologic implants (Table 1). Implant materials included polypropylene, polyester, cadaveric biologics, silicone, nickel, and titanium (Table 1). Patients reported 21 adverse symptoms following implantation (Table 2). The most common symptoms were pain (539, 66.1%), chronic fatigue (380, 46.6%), arthralgias/joint pain (353, 43.3%), sleep disturbances (327, 40.1%), and brain fog (324, 39.8%).

Symptoms commonly started immediately after implant surgery (232, 36.9%). Using regression analysis, immediate postoperative onset of symptoms was strongly associated with hernia mesh ($p=0.008$), pelvic mesh ($p=0.032$), and polypropylene material ($p=0.012$). Breast implants ($p=0.020$) and silicone material ($p=0.003$) were associated with a more indolent onset of symptoms, presenting most commonly more than 1 year post implant.

Hernia mesh was significantly associated with all 21 of the reported symptoms ($p< 0.05$, Table 3). Pelvic mesh was significantly associated with 17 of the 21 symptoms. Polypropylene was the only material that was significantly associated with 7 of the 21 symptoms.

Conclusion: This is the largest study of patients to help understand their perceived adverse reaction to implants, known as ASIA and Schoenfeld's syndrome. Mesh implants and polypropylene material were most strongly associated with an immediate onset of adverse symptoms. Common symptoms include chronic fatigue, joint pain, sleep disturbance, and impaired cognition, many of which may be inflammatory in nature. Interestingly more than 1 in 3 patients with ASIA already had personal history of autoimmune disorder.
The significant commonality of post-implant symptoms should be recognized by physicians to help them identify and treat patients with Implant Illness. In the meantime, studies to help objectively study ASIA are needed.

Implant Type	Total n=815
Pelvic Mesh (n [%])	333 [40.9%]
Hernia Mesh (n [%])	252 [30.9%]
Other Gynecologic Implant (n [%])	82 [10.1%]
Breast Implant (n [%])	60 [7.4%]
Surgical Clips (n [%])	48 [5.9%]
Joint Replacement (n [%])	13 [1.6%]
Dental Implant (n [%])	9 [1.1%]
Implant Material	
Polypropylene (n [%])	475 [58.3%]
Silicone (n [%])	53 [6.5%]
Titanium (n [%])	33 [4%]
Nickel (n [%])	29 [3.6%]
Polyester (n [%])	28 [3.4%]
Cadaveric Biologics (n [%])	18 [2.2%]

Table 1: Implant characteristics

Symptom	Total n=815
Pain (n [%])	539 [66.1%]
Chronic fatigue (n [%])	380 [46.6%]
Arthralgias/Joint pain (n [%])	353 [43.3%]
Sleep disturbances (n [%])	327 [40.1%]
Brain fog (n [%])	324 [39.8%]
Impaired concentration (n [%])	298 [36.6%]
Motor weakness (n [%])	298 [36.6%]
Bloating (n [%])	292 [36%]
Paresthesias (n [%])	239 [29.3%]
Flushing (n [%])	211 [25.9%]
Pruritis (n [%])	211 [25.9%]
Hair loss (n [%])	206 [25.3%]
Headache (n [%])	196 [24%]
Hyperhidrosis (n [%])	195 [23.9%]
Memory disturbances (n [%])	193 [23.6%]
Arthritis/Joint swelling (n [%])	192 [23.6%]
Nausea (n [%])	190 [23.3%]
Visual changes (n [%])	181 [22.2%]
Rash (n [%])	177 [21.7%]
Auditory changes (n [%])	167 [20.5%]
Dental disease (n [%])	148 [18.2%]
Change in taste (n [%])	75 [9.2%]

Table 2: Reported implant reaction symptoms

Implant Type	Associated Reaction Symtoms
Pelvic Mesh	Bloating, Brain fog, Chronic fatigue, Impaired concentration, Memory disturbances, Sleep disturbances, Hyperhidrosis, Dental disease, Hair loss, Arthralgias/Joint pain, Arthritis/Joint swelling, Nausea, Pain, Paresthesias, Motor Weakness
Hernia Mesh	Bloating, Brain fog, Change in taste, Chronic fatigue, Impaired concentration, Memory disturbances, Sleep disturbances, Hyperhidrosis, Dental disease, Flushing, Hair loss, Headache, Auditory changes, Arthralgias/Joint pain, Arthritis/Joint swelling, Nausea, Pain, Rash, Pruritis, Paresthesias, Motor Weakness
Other Gynecologic Implant	Sleep disturbances, Arthralgias/Joint pain, Pain, Paresthesias
Breast Implant	Bloating, Brain fog, Chronic fatigue, Impaired concentration, Memory disturbances, Sleep disturbances, Hyperhidrosis, Dental disease, Hair loss, Arthralgias/Joint pain, Arthritis/Joint swelling, Nausea, Pain, Paresthesias, Motor Weakness
Surgical Clips	Hyperhidrosis, Pruritis, Pain, Motor weakness
Joint Replacement	Bloating, Chronis fatigue, Hair loss, Headache, Pain
Dental Implant	
Implant Material	
Polypropylene	Bloating, Brain fog, Chronic fatigue, Impaired concentration, Sleep disturbances, Hyperhidrosis, Pain
Silicone	Dental disease, Arthralgias/Joint pain, Pain
Titanium	
Nickel	
Polyester	Arthralgias/Joint pain, Arthritis/Join swelling, Pain, Paresthesias
Cadaveric Biologics	

Table 3: Associations between implant type/material and reaction symptoms ($p<0.05$)

4. Cyanoacrylate Glue Mesh Fixation In Hernia Surgery. A Single Center Experience Of Postoperative And Patient Reported Outcomes

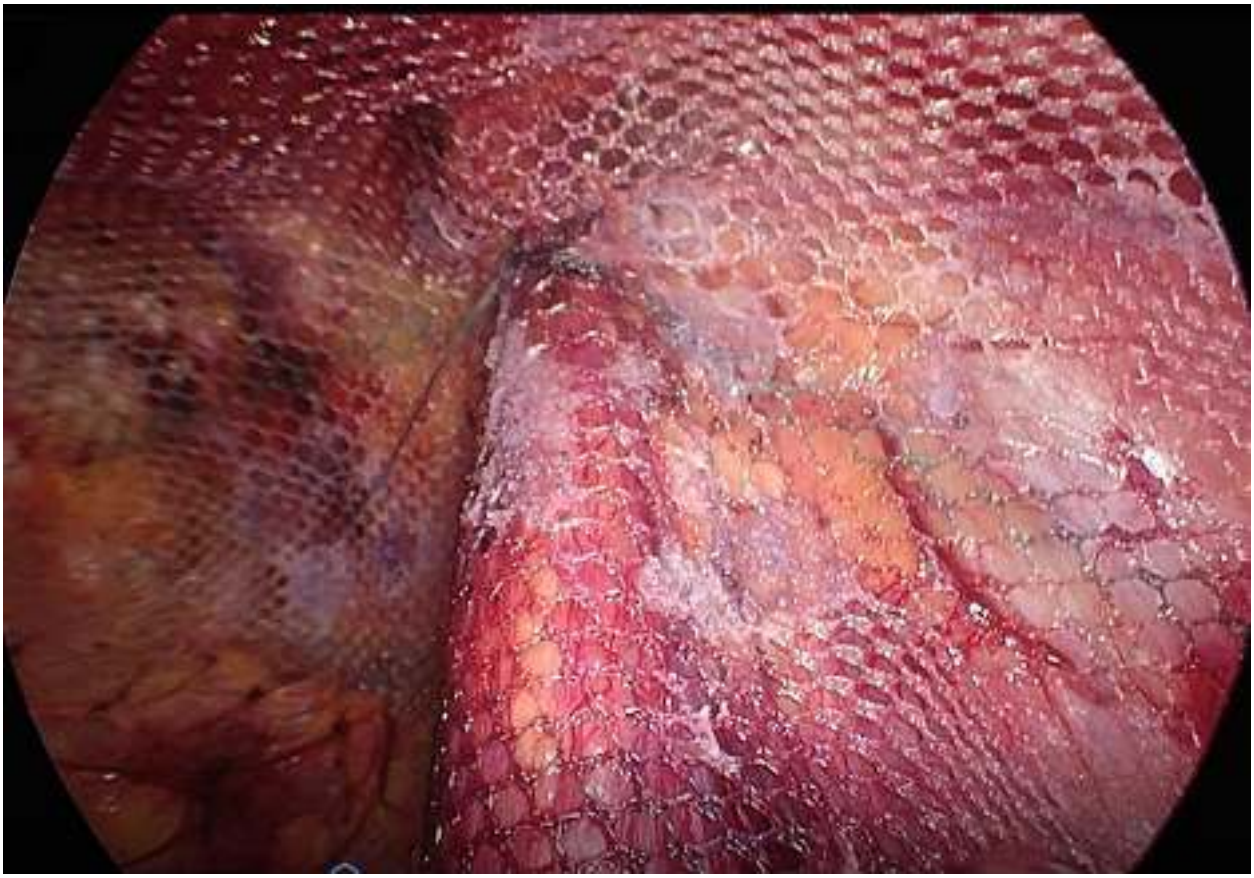
E Bakalinis, A Mathioulaki, M Emmanouilidis, A Kandyli, D Petridou, P Tzardis, P Chrysocheris
Hygeia Hospital

Background: Mesh fixation is an integral part of hernia repair. Hernia recurrence and post herniorrhaphy pain, although rare, are possible and mostly preventable complications through meticulous surgical technique. Sutures or tacks are commonly utilized as mesh fixatives, however they are accompanied with the inherent risk of hemorrhage and nerve injury or entrapment. The purpose of this study is to explore the use of cyanoacrylate glue as a mesh fixation method in inguinal and ventral hernia repairs and whether it confers comparable results to traditional fixation modules.

Methods: This is a retrospective study evaluating patients who underwent minimally invasive inguinal and ventral hernia repairs in a high volume center, located in Athens, Greece, in the time period between January 2022 and March 2024. Written consent was given from all participants. Quality of life data were noted by utilizing Carolinas Comfort Scale, a well validated patient reported outcomes questionnaire, accompanied by postoperative follow up visits if deemed necessary. Post herniorrhaphy pain and recurrence were the primary investigated results. Other complications such as seroma formation were also noted.

Results: Our study included 220 patients (mean age 51.2 years, male to female ratio 6.15:1). One hundred seventy eight inguinal hernia and forty two ventral hernia repairs were performed in the study period accordingly. The incidence of chronic pain after mesh fixation with cyanoacrylate glue was 1,3 % (n=3), seen only in ventral hernia repairs. In our series no incidence of chronic pain was seen following inguinal hernia repairs. Two recurrences were noted in the follow up period, also in the patient subgroup with ventral hernias. Patient reported outcomes were also disclosed.

Conclusion: Mesh migration is a concern of glue fixation opponents. The results of our study show that hernia mesh fixation with cyanoacrylate glue is both safe and effective, indicating lower incidence of post herniorrhaphy pain and low incidence of recurrence or other complications. These findings are consistent with those from other recent studies. Glue assists in optimal mesh deployment allowing fixation on or near delicate structures without the risk of injury. More randomized controlled trials are required to further evaluate the use of glue in mesh repairs.



5. Initial Report Of HERNIACLINIC-QOL: Abdominal Wall Hernia Surgery Registry From A Single Center In Brazil – 2 Years Follow Up

P Barros, N Pereira, B De Lucia Hernani, I de Abreu Neto
HerniaClinic

Background: To evaluate and improve the quality of treatment over time, several databases with surgical data from hernia repair surgeries have been implemented in many countries since 1992, with both public and private funding. The HERNIACLINIC-Qol database was created in novembrer 2020 by three surgeons from a private institution in São Paulo-Brazil, to record epidemiological data, intraoperative and postoperative outcomes, and data reported by patients (PROMs), in short and long term. The data collected were based on the guidelines of the European Hernia Society (EuraHS) and Americas Hernia Society Quality Collaborative (AHSQC). The aim of the present study is to report the data collected by HERNIACLINIC-Qol, including the population characteristics, surgeries performed, clinical and surgical outcomes, and those reported by the patients in a two-year follow-up period,

Methods: This is an observational retrospective and single center study of prospectively collected data from novembrer 2020 to abril 2024 from patients who underwent inguinal and/or ventral hernia repair. The outcomes selected for analysis were surgical procedure and hospital stay 30 days, 12 and 24 months after index procedure. The study data was collected and managed using Research Electronical Data Capture (REDcap) exported to the R environment (R Core Team, 2023) using the REDCapR package (Beasley, 2022).

Results: A total of 554 patients who underwent inguinal or ventral hernia repair were included. The loss of follow up was 5% on 30 days, 48% on 12 months 75% on 24 months. The average BMI was 27.15; 5.69% were diabetic and 9.19% were smokers. 95% were ASA I and II. 98.12% were elective surgeries.

42.7% were inguinal surgeries, 37.8% ventral hernias and 19.3% concomitant ventral and inguinal hernias. 86% of inguinal hernias were operated laparoscopically. The Lichtenstein technique was the most used for open repair. 72% of ventral hernias were primary and 28% incisional. Only 8.82% were not midline hernias. The hernia size was W1 26.36%; W2 57.36%, W3 16.28%. 95.48% of the meshes used were sublay: 7.43% intraperitoneal; 51.35% preperitoneal; 41.22% retromuscular. 13.94% of patients had a concomitant procedure, the main one being cholecystectomy (64.86%).

For ventral hernias, the median length of hospital stay was 1 day, 5 superficial surgical site infections, 9.59% of surgical site occurrences. There were 8 readmissions, 2 for pain, 1 hematoma, 1 deep wound infection, 1 DVT/TPE, 1 intestinal obstruction, 1 bladder injury and 1 pancreatitis. Four patients underwent surgical re-intervention. On the EuraHS-Qol scale, analyzing the total score, there were differences between T0 and T30, T365 and T730, but there was no significant difference between the groups, and they benefited equally from the intervention. Inguinal hernia patients had a better quality of life outcomes after 1 year.

Conclusion: HERNIACLINICqol is one of the first group efforts to follow patients over time in Brazil. It has proved to be effective for 30-day follow-up, with a record of readmissions and complications. However, in long-term follow-up, patients were lost and EuraHS-Qol was unable to measure an improvement in quality of life. Adjustments to the platform will be made after this first analysis.

Table 1

Demographic and registration data.

Variables	N = 554[1]
Gender	
Female	110 (19.86)
Male	444 (80.14)
Age	52.50 (14.11)
BMI	27.15 (3.96)
Smoker?	
current (within 1 month)	50 (9.19)
Ex-smoker (stopped over a year ago)	30 (5.51)
Ex-smoker (stopped less than a year ago)	2 (0.37)
No	462 (84.93)
Diabetes mellitus?	
No	514 (94.31)
Yes	31 (5.69)

[1]n (%); Mean (SD)

Table 2

Descriptive statistics by time for the EuraHS-Qol domains

Time	T30						T365						T730					
Domains	n	HV	n	IH	n	HV-IH	n	HV	n	IH	n	HV-IH	n	HV	n	IH	n	HV-IH
Pain	199	3.91 (4.97)	226	3.43 (4.60)	100	3.46 (4.31)	111	1.60 (3.61)	124	1.79 (3.36)	52	1.83 (4.09)	48	1.07 (3.48)	63	0.83 (2.02)	24	2.13 (5.63)
Restriction of activities	199	10.51 (11.52)	226	7.11 (9.25)	100	9.76 (11.47)	111	3.42 (7.69)	124	1.73 (4.29)	52	3.19 (5.77)	48	2.48 (6.98)	63	1.63 (4.10)	24	2.83 (5.94)
Esthetical discomfort	199	4.98 (5.54)	226	3.28 (4.80)	100	3.30 (3.89)	111	3.64 (4.69)	124	2.03 (4.41)	52	4.46 (6.18)	48	3.96 (6.04)	63	1.75 (4.10)	24	5.61 (7.63)
Total	199	19.39 (16.64)	226	13.83 (13.84)	100	16.52 (15.9)	111	8.65 (12.18)	124	5.55 (8.36)	52	9.48 (12.18)	48	7.50 (13.15)	63	4.20 (6.66)	24	10.57 (12.25)

[1] Mean (Standard Deviation); VH: Ventral Hernia; IH: Inguinal Hernia; T30: 30 days; T365: 365 days; T730: 730 days.

6. Abdominal Wall Closure With A Novel Suture Tension Distribution Device After Oncologic Laparotomy

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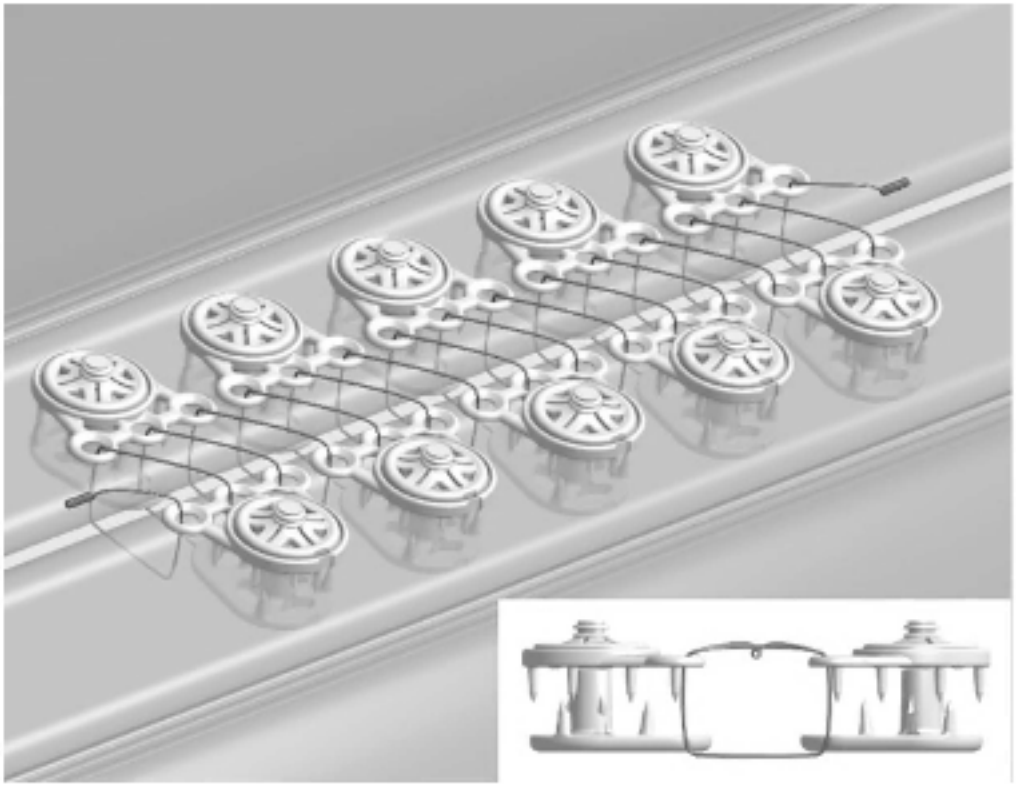
Clinical Las Americas

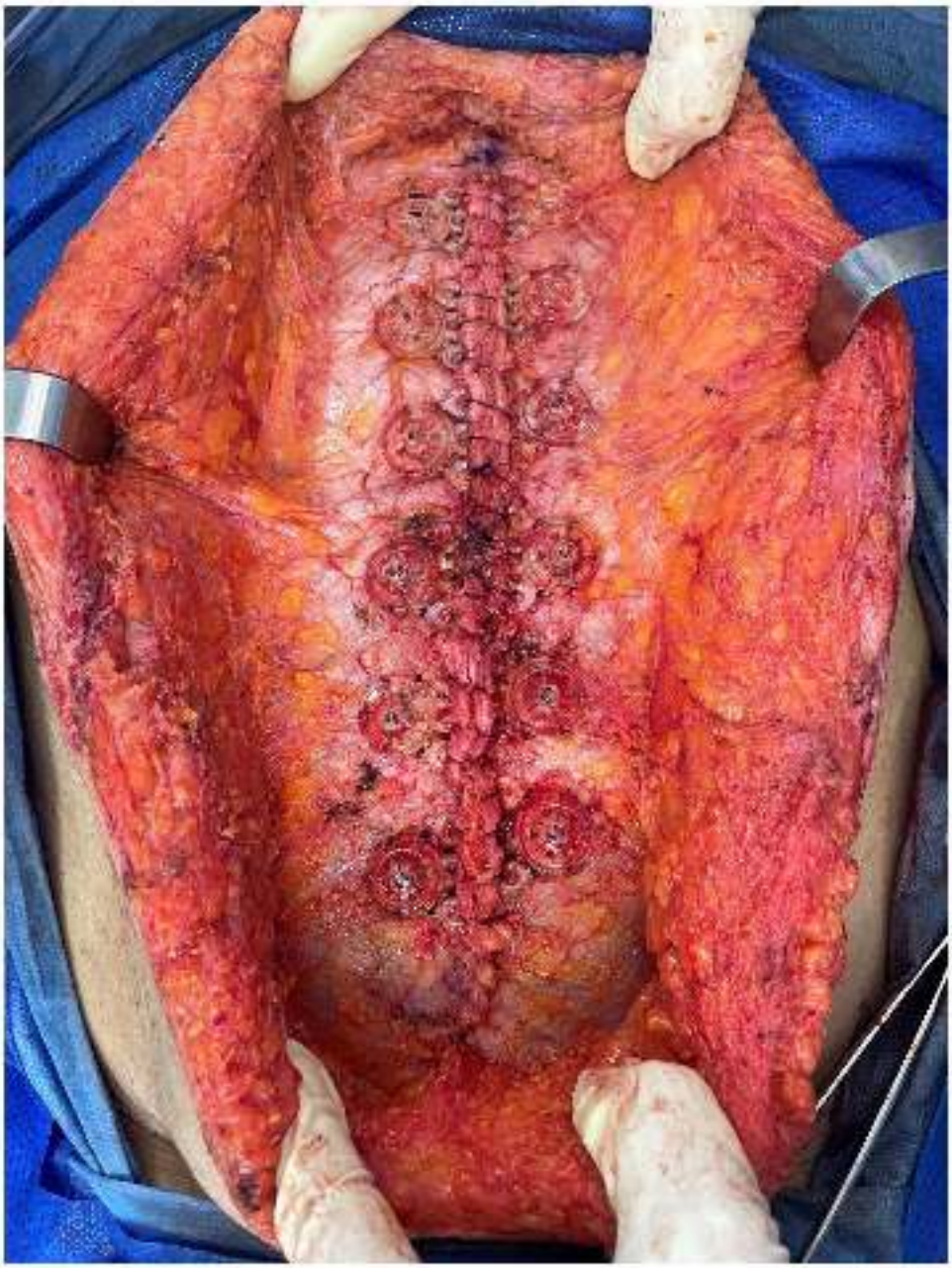
Background: Post-laparotomy incisional hernia has a profound impact on quality of life for cancer survivors already burdened by their diagnosis and treatment. The rate of incisional hernia identified by CT at 1 year in oncologic laparotomy has been reported at 41%, emphasizing the need for simple and safe enhancement of abdominal closure, especially in high-risk groups where compromise of the closure often leads to enduring morbidity. This is the first report of using a novel investigational medical device to distribute suture tension in abdominal wall closure after high-risk oncologic laparotomy.

Methods: Fifteen patients were studied in a prospective, multi-center, single-arm, first-in-human investigational device study. The study population consisted of oncology patients scheduled to undergo an elective, intent-to-cure laparotomy. The investigational device is a bioabsorbable suture anchor designed to distribute suture tension in abdominal wall closure (Figures 1). Following the oncology procedure, anchors were placed along the length of both sides of the incision and the abdominal wall was closed with running suture passing through the eyelets of opposing anchors across the midline (Figure 2). Abdominal exams were performed at 3, 6, and 12-months to assess the integrity of the abdominal wall. Standard of care imaging was evaluated to assess anatomy of the rectus abdominis muscles. Safety, pain, and quality of life data were collected.

Results: Participants were followed out to 12-months with no clinical evidence of hernia in 14 of 15 participants. Of the 15 participants, 12 have completed the study; one expired due to cancer recurrence; one is currently hospitalized with cancer recurrence; and one with technical challenges during device placement developed an incisional hernia. Results were confirmed with standard of care CT/MR scans (n=12) demonstrating no evidence of midline attenuation (inter-rectus distance > 20mm) or hernia in 11 of 12 (92%) imaging studies. No adverse events were reported as device related. Overall pain scores were low, averaging 1.3 on an 11-point numeric rating scale at discharge, 1.2 at 3-months, 0.3 at 6-months, and 0.1 at 12-months. Of note, 9 of 15 participants were discharged without opiates for pain control. Quality of life assessments were commensurate with the low pain scores.

Conclusion: In spite of the small cohort, the data demonstrates preliminary evidence of improved hernia rates in high-risk patients. Further studies are planned to confirm the results in a larger cohort of patients and assess device feasibility in hernia repair.





7. Postoperative Outcomes Of Concurrent Panniculectomy In Ventral Hernia Repair: A Systematic Review And Meta-Analysis

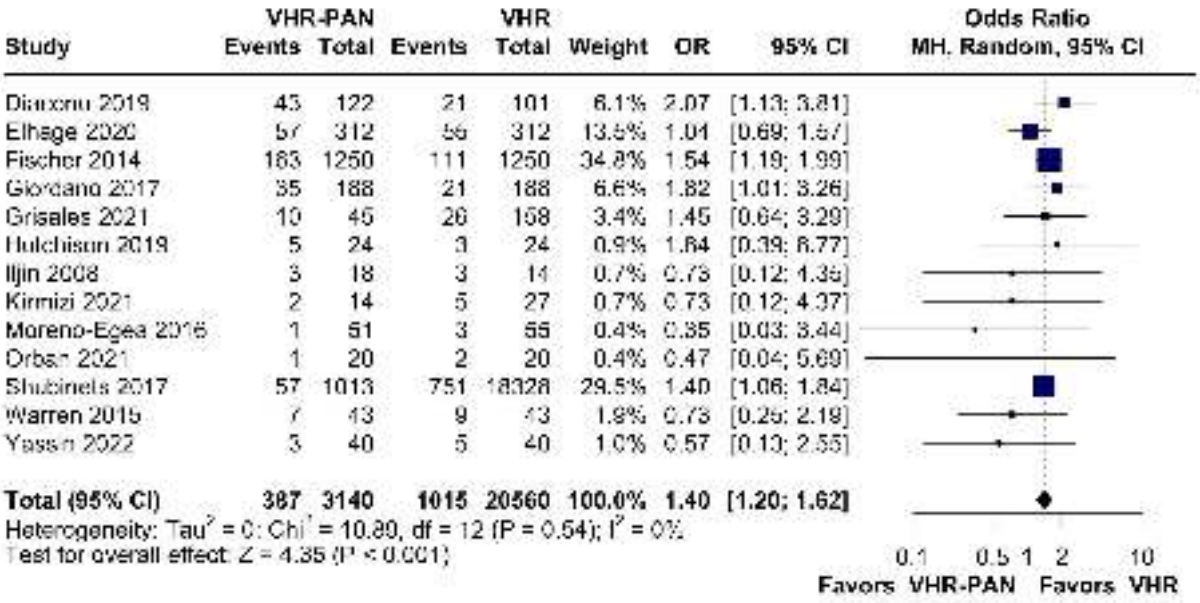
P Marcolin, D Lima, S Cañizares, S Mazzola Poli de Figueiredo
Federal University of the Southern Border

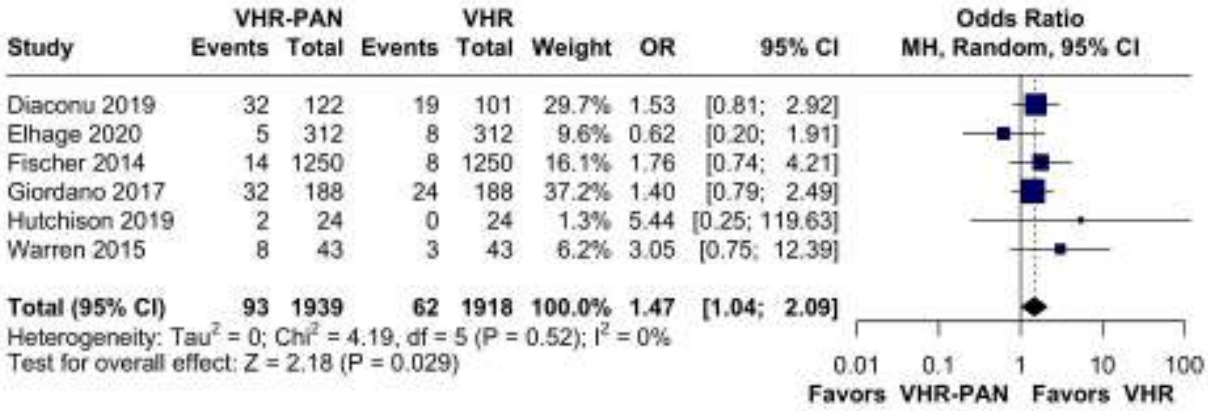
Background: Ventral hernia repair (VHR) is often performed in patients with obesity. While panniculectomy (PAN) improves cosmetic outcomes, it may increase complications, particularly wound-related adverse events. Despite its widespread use, the impact of concurrent PAN on postoperative complications in VHR remains unclear. This study aimed to assess whether concurrent PAN increases postoperative complications in VHR.

Methods: We conducted a systematic review and meta-analysis by searching PubMed, Scopus, Web of Science, and Cochrane databases for studies published up to April 2024 comparing surgical outcomes in patients undergoing VHR with and without concurrent PAN. Odds ratios (ORs) and mean differences (MDs) with 95% confidence intervals (CIs) were pooled for dichotomous and continuous endpoints, respectively. We performed a subgroup analysis for recurrence including only studies that had a mean follow-up of at least one year. Statistical analysis was performed using RStudio 4.1.2 using a random-effects model. We used I2 statistics to evaluate heterogeneity.

Results: Our search yielded 1,606 studies. After removing duplicates and excluding irrelevant studies based on titles and abstracts, 40 studies were fully reviewed and 12 observational studies and 2 randomized controlled trials were included, comprising 23,730 patients. Of these, 3,160 (13%) patients underwent VHR with concurrent PAN (VHR-PAN). The mean age ranged from 37 to 59 years, and 73% of the sample were women. The mean BMI varied from 27.84 to 45 kg/m2, and 75% of the patients underwent mesh repair. The mean defect area ranged from 36 to 389 cm2. Most repairs were performed using mesh (75%) in an underlay position (68%) and 28% underwent component separation. Compared to VHR alone, concurrent PAN was associated with increased surgical site infection (OR 1.40; 95% CI 1.20 to 1.62; p< 0.001; I2=0%; 12.3% vs. 4.9%; Figure 1), wound dehiscence (OR 1.47; 95% CI 1.04 to 2.09; p=0.029; I2=0%; 4.8% vs. 3.2%; Figure 2), surgical site occurrences (OR 1.92; 95% CI 1.33 to 2.77; p< 0.001; I2=42%; 42.5% vs. 29.3%), reoperation (OR 1.78; 95% CI 1.35 to 2.36; p< 0.001; I2=0%; 9.7% vs. 5.6%; Figure 3), and length of hospital stay (MD 0.84 days; 95% CI 0.33 to 1.35 days; p=0.001; I2=60%) compared with VHR only. There was no difference in deep venous thromboembolism, fistula, hematoma, operative time, readmission, seroma, or skin necrosis. Recurrence rates did not differ between groups (OR 0.85; 95% CI 0.61 to 1.20; p=0.360; I2=36%) with a follow-up ranging from 1 to 36 months. Furthermore, subgroup analysis of recurrence in studies with a mean follow-up of at least one year also showed no difference between groups (OR 0.97; 95% CI 0.53 to 1.80; p=0.932; I2=60%), with a follow-up ranging from 12 to 36 months.

Conclusion: Concurrent PAN in patients undergoing VHR is associated with increased wound morbidity and reoperation rates, without affecting recurrence. Surgeons should carefully weigh the risks and benefits of performing concurrent PAN in VHR patients.


Study
VHR-PAN Events Total
VHR Events Total
Weight
OR
95% CI
Odds Ratio MH, Random, 95% CI
Diaconu 2019 43 122 21 101 6.1% 2.07 [1.13; 3.81]
Elhage 2020 57 312 56 312 13.5% 1.01 [0.69; 1.47]
Fischer 2014 183 1250 111 1250 34.8% 1.54 [1.19; 1.99]
Giordano 2017 35 188 21 188 6.6% 1.82 [1.01; 3.26]
Grisales 2021 10 45 26 158 3.4% 1.45 [0.64; 3.29]
Hutchison 2019 5 24 3 24 0.9% 1.84 [0.39; 8.77]
Iljin 2008 3 18 3 11 0.7% 0.73 [0.12; 4.35]
Kirmizi 2021 2 14 5 27 0.7% 0.73 [0.12; 4.37]
Moreno-Egea 2016 1 51 3 55 0.4% 0.35 [0.03; 3.44]
Orbay 2021 1 20 2 20 0.4% 0.47 [0.04; 5.69]
Shubinets 2017 57 1013 751 18328 29.5% 1.40 [1.06; 1.84]
Warren 2015 7 43 9 43 1.9% 0.73 [0.25; 2.19]
Yassin 2022 3 40 5 40 1.0% 0.57 [0.13; 2.55]
Total (95% CI) 387 3140 1015 20560 100.0% 1.40 [1.20; 1.62]
Heterogeneity: Tau² = 0; Chi² = 10.80, df = 12 (P = 0.54); I² = 0%
Test for overall effect: Z = 4.35 (P < 0.001)
0.1 0.5 1 2 10
Favors VHR-PAN Favors VHR


Study
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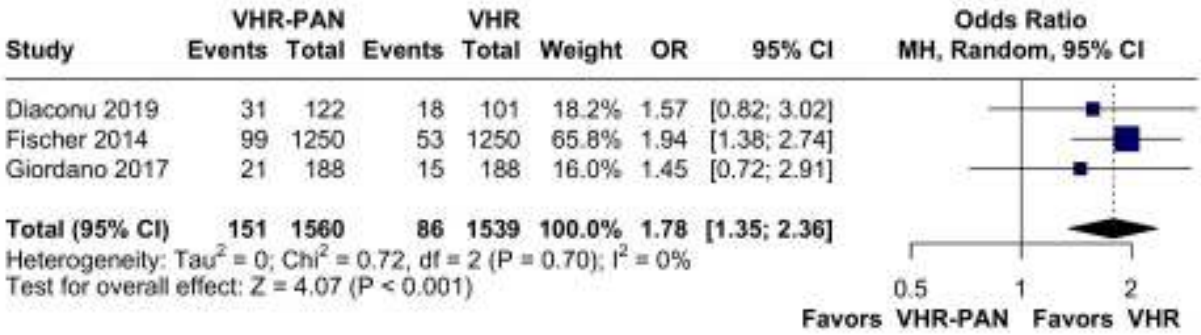
Fischer 2014 14 1250 8 1250 16.1% 1.76 [0.74; 4.21]
Giordano 2017 32 188 24 188 37.2% 1.40 [0.79; 2.49]
Hutchison 2019 2 24 0 24 1.3% 5.44 [0.25; 119.63]
Warren 2015 8 43 3 43 6.2% 3.05 [0.75; 12.39]
Total (95% CI) 93 1939 62 1918 100.0% 1.47 [1.04; 2.09]
Heterogeneity: Tau² = 0; Chi² = 4.19, df = 5 (P = 0.52); I² = 0%
Test for overall effect: Z = 2.18 (P = 0.029)
0.01 0.1 1 10 100
Favors VHR-PAN Favors VHR


Study
VHR-PAN Events Total
VHR Events Total
Weight
OR
95% CI
Odds Ratio MH, Random, 95% CI
Diaconu 2019 31 122 18 101 18.2% 1.57 [0.82; 3.02]
Fischer 2014 99 1250 53 1250 65.8% 1.94 [1.38; 2.74]
Giordano 2017 21 188 15 188 16.0% 1.45 [0.72; 2.91]
Total (95% CI) 151 1560 86 1539 100.0% 1.78 [1.35; 2.36]
Heterogeneity: Tau² = 0; Chi² = 0.72, df = 2 (P = 0.70); I² = 0%
Test for overall effect: Z = 4.07 (P < 0.001)
0.5 1 2
Favors VHR-PAN Favors VHR

8. Laparoscopic Repair Of Umbilical With Inguinal With Femoral Hernia

V Patil, N Baste, N Khairnar, N Dabhade
SMBT IMS RC Dhamangaon Nashik

Background: 65 year old male came with complaints of swelling in umbilical and inguinal region since 2 months. On examination patient was diagnosed with femoral with inguinal and umbilical hernia.

Methods: Surgery planned- Laparoscopic eTEP RS with large mesh placement

Results: Post operative period was uneventful. Patient discharged on 4th postoperative day

Conclusion: Laparoscopic eTEP RS is safe procedure in multiple hernias. The large mesh can accommodate retrorectus space which also covers myopectineal orifice of fruchaud.

9. A Study Comparing The Operative Outcomes Of Extraperitoneal (eTEP) Retrorectus Access Laparoscopic And Robotic-Assisted Ventral Hernia Repairs

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Background: This retrospective real-world study aims to evaluate the operative outcomes of laparoscopic and robotic-assisted extraperitoneal repair of abdominal wall defects via enhanced view total extraperitoneal (eTEP) retrorectus space access.

Methods: The primary objective was to assess intraoperative and postoperative outcomes after eTEP repair among laparoscopic and robotic-assisted surgery groups. Data on operative variables such as the size of the hernia defect, type of procedure, total operating time, mesh size, length of hospital stay, analgesics usage, complications, pain scores, and patient reported quality of life (QoL) scores were collected and analyzed.

Results: A total of 120 cases were collected, with 73 in the robotic group and 47 in the laparoscopic group. The robotic group had a significantly higher (P=0.0001) mean size of hernia defect than the laparoscopic group. The laparoscopic group had a longer operating room time (mean, 194 mins vs 152 mins in robotic arm, p =). The length of hospital stay, pain scores and analgesic usage were comparable between the groups. The postoperative complications were significantly lower in the robotic group (2.7% vs 12.8% in laparoscopic group, p=). When a subgroup analysis was done based on defect size (10 cms), the robotic group had significantly lower total operating time and pain score within 14 days following surgery for hernias less than 7 cm and 7-10 cm. The need of transversus abdominis release (TAR) was significantly less in robotic subgroup for hernias less than 7 cm and 7-10 cm. QoL scores/Patient well being scores within 14 days of surgery were also significantly better (P=0.0116) in the robotic group for hernias less than 7 cm.

Conclusion: When compared to the laparoscopic procedure, the robotic-assisted eTEP technique may be used to treat significantly larger hernia defects without the need for component separation using TAR. The robotic-assisted extraperitoneal repairs show improvement over laparoscopic approach in terms of operating time, post operative complications and pain and QoL, potentially improving outcomes for patients with complex ventral hernias.

Variable	Robotic (N=73)	Laparoscopic (N=47)
Technique-		
- eTEP-RS, n (%)	45 (61.64)	17 (36.17)
- eTEP-RS with Unilateral TAR, n (%)	25 (34.24)	21 (44.68)
- eTEP-RS with Bilateral TAR, n (%)	3 (4.10)	9 (19.14)
Total OT Time, mean ± SD, min	152.30 ± 52.22	194.94 ± 54.73
Length of Hernia, mean ± SD, cm	11.04 ± 4.25	7.21 ± 3.24
Width of Hernia, mean ± SD, cm	8.07 ± 3.17	5.21 ± 1.61
Area of Hernial Defect, mean ± SD, cm^2	79.49 ± 60.36	32.85 ± 20.82
Length of Mesh, mean ± SD, cm	28.63 ± 2.05	27.96 ± 1.92
Width of Mesh, mean ± SD, cm	20.68 ± 5.27	23.13 ± 6.58
Length of hospital Stay, mean ± SD, days	2.53 ± 0.76	2.21 ± 0.74
Post-op complications, n (%)	2 (2.74)	6 (12.77)
- Bruising at Port site	0 (0.00)	2 (4.26)
- Intestinal Obstruction	0 (0.00)	1 (2.13)
- Retention of Urine	0 (0.00)	1 (2.13)
- Seroma	1 (1.37)	2 (4.26)
- AKI, Chest Infection	1 (1.37)	0 (0.00)
Clavien-Dindo Classification		
- Grade I	1 (1.37)	6 (12.77)
- Grade II	1 (1.37)	0 (0.00)
No. of analgesics used per day prior to discharge, mean ± SD	5.04 ± 1.07	4.89 ± 1.48
Pain Score at 6 hours, mean ± SD	5.59 ± 0.66	5.72 ± 0.74
Pain Score at 24 hours, mean ± SD	3.90 ± 0.76	4.34 ± 0.69
Pain Score within 14 days of surgery, mean ± SD	2.11 ± 0.59	2.66 ± 0.56
QoL Score/Patient well being score within 14 days of surgery, mean ± SD	85.55 ± 5.62	82.38 ± 4.28
Re-admission within 30 days after surgery, n (%)	0 (0.00)	1 (2.13)

Table 3: Operative Outcomes of the Study Population Based on Hernia defect size

Hernia <7 cm (width)	Robotic (N=32)	Laparoscopic (N=35)	P-Value
Total operating time, mean ± SD, min	121.03 ± 34.16	182.60 ± 55.01	**0.0000***
Type of surgery - eTEP-RS - eTEP-RS U/L TAR - eTEP-RS B/L TAR	 32 (100.00) 0 (0.00) 0 (0.00)	 17 (48.57) 15 (42.86) 3 (8.57)	-
Length of mesh, mean ± SD, cm	27.91 ± 1.72	27.51 ± 1.79	0.3730
Width of mesh, mean ± SD, cm	17.09 ± 1.16	21.03 ± 5.37	**0.0002***
Length of hospital stay, mean ± SD, days	2.38 ± 0.60	2.17 ± 0.74	0.2285
Number of analgesics used per day before discharge, mean ± SD	4.88 ± 0.89	4.80 ± 1.62	0.8200
Length of analgesic usage, mean ± SD, days	4.91 ± 1.35	5.06 ± 0.89	0.5948
Pain score at 6 hours, mean ± SD	5.44 ± 0.66	5.66 ± 0.75	0.2172
Pain score at 24 hours, mean ± SD	3.75 ± 0.71	4.26 ± 0.73	**0.0060***
Pain score within 14 days of surgery, mean ± SD	2.03 ± 0.53	2.57 ± 0.55	**0.0001***
QoL score/Patient well being score within 14 days of surgery, mean ± SD	85.91 ± 5.52	82.66 ± 4.55	**0.0116***
Hernia 7-10 cm (width)	**Robotic (N=23)**	**Laparoscopic (N=12)**	**P-Value**
Total operating time, mean ± SD, min	153.78 ± 55.86	230.92 ± 34.13	**0.0002***
Type of surgery - eTEP-RS - eTEP-RS U/L TAR - eTEP-RS B/L TAR	 13 (56.52) 9 (39.13) 1 (4.35)	 0 (0.00) 6 (50.00) 6 (50.00)	-
Length of mesh, mean ± SD, cm	28.61 ± 2.35	29.25 ± 1.69	0.4218
Width of mesh, mean ± SD, cm	20.70 ± 4.94	29.25 ± 5.92	**0.0001***
Length of hospital stay, mean ± SD, days	2.70 ± 1.04	2.33 ± 0.75	0.3055
Number of analgesics used per day before discharge, mean ± SD	5.13 ± 1.33	5.17 ± 0.90	0.9262
Length of analgesic usage, mean ± SD, days	5.35 ± 2.18	5.08 ± 0.28	0.6870
Pain score at 6 hours, mean ± SD	5.74 ± 0.74	5.92 ± 0.64	0.4965
Pain score at 24 hours, mean ± SD	4.13 ± 0.80	4.58 ± 0.49	0.0903
Pain score within 14 days of surgery, mean ± SD	2.17 ± 0.70	2.92 ± 0.49	**0.0032***
QoL score/Patient well being score within 14 days of surgery, mean ± SD	85.35 ± 6.27	81.58 ± 3.23	0.0670

Table 4: Comparison of Operative Outcomes of Robotic (hernia >10 cm) and Laparoscopic (hernia 7-10 cm) eTEP with TAR

Variable	Robotic hernia >10 cm (N=18)	Laparoscopic hernia 7-10 cm (N=12)	P-Value
Total operating time, mean ± SD, min	206.00 ± 19.29	230.92 ± 34.13	**0.0203***
Type of surgery - eTEP-RS - eTEP-RS U/L TAR - eTEP-RS B/L TAR	 0 (0.00) 16 (88.89) 2 (11.11)	 0 (0.00) 6 (50.00) 6 (50.00)	-
Length of mesh, mean ± SD, cm	29.94 ± 1.43	29.25 ± 1.69	0.2524
Width of mesh, mean ± SD, cm	27.06 ± 3.94	29.25 ± 5.92	0.2486
Length of hospital stay, mean ± SD, days	2.61 ± 0.49	2.33 ± 0.75	0.2432
Number of analgesics used per day before discharge, mean ± SD	5.22 ± 0.92	5.17 ± 0.90	0.8752
Length of analgesic usage, mean ± SD, days	5.89 ± 1.66	5.08 ± 0.28	0.1194
Pain score at 6 hours, mean ± SD	5.67 ± 0.47	5.92 ± 0.64	0.2445
Pain score at 24 hours, mean ± SD	3.89 ± 0.74	4.58 ± 0.49	**0.0099***
Pain score within 14 days of surgery, mean ± SD	2.17 ± 0.50	2.92 ± 0.49	**0.0005***
QoL score/Patient well being score within 14 days of surgery, mean ± SD	85.17 ± 4.82	81.58 ± 3.23	**0.0376***

* Significant value

SD: Standard deviation; eTEP-RS: enhanced-view totally extraperitoneal rives-stoppa; eTEP-RS U/L TAR: eTEP-RS unilateral transversus abdominis release; eTEP-RS B/L TAR: eTEP-RS bilateral transversus abdominis release; QoL: Quality of life

10. Correlation Between Obesity And Pneumoperitoneum In Initial Trocar Access For eTEP

N Baste, V Patil, V Patil, S Bobade, Y Rahade
SMBT IMS RC Dhamangaon Nashik

Background: There are different techniques available to take initial trocar acess for eTEP RS. The commonly followed method is visi port access. But its very difficult to use disposable visiport intruments in general and charitable hospitals. In tribal and rural india ,open acess with steel trocar and canula is still the preferred method.

Methods: Prospective study of all eTEP procedures done in single institute has been conducted to see if patient has developed pneumoperitoneum just after initial trocar access for eTEP.

Results: Total 102 eTEP procedures done in our institute between march 2023 to april 2023.
Male patients were-75
Female patients were-27
Average BMI-23
Patients with BMI more than 30-25
Total number of patients in which pneumoperitoneum occurred-22
Total number of patients with BMI more than 30 in which pneumoperitoneum occurred-15
Total number of patients with BMI less than 30 in which pneumoperitoneum occurred-7

Conclusion: We have found that pneumoperitoneum occurred more in obese patients as there is thin posterior rectus sheath and peritoneum. BMI is good predictive indicator of pneumoperitoneum for eTEP surgery.

11. Results And Analysis Of The Implementation Of An Abdominal Wall Hernia Service In A Public University Hospital In Brazil

F Ponce Leon, L Valmon, C Barros, L Barbosa, J Ribeiro, J Manso
Universidade Federal do Rio de Janeiro

Background: Ventral hernia is a prevalent disease in the population and brings great morbidity to the patient, loss of quality of life and is linked to the possibility of acute and chronic complications. The main objective of this study is to prospectively analyze and evaluate ventral hernias and their outcomes carried out our universitary hospital in Brazil, between 2019 and 2023, taking into account the opening of a specific service for abdominal wall hernias (AWRS) in 2023.

Methods: This is a prospective, observational, single-center study, carried out with patients operated on for ventral hernia from January 2019 to December 2023, analyzing anthropometric data and outcomes.

Results: A total of 314 patients (median [IQR] age, 55 [25-92] years; 182 [58%] male) were observed between 2019 and 2023 and the follow-up rate was 65% at 12 months. Comparing the years pre AWRS, we had 194 ventral corrections with 33% primary repairs and 65% onlay ($p < 0,001$). In 2023, we had 120 ventral corrections with 42% retrorrectus repairs, 12% primary repairs and 42% onlay repairs ($p < 0,001$). The overall number of early complications were 66 patients (34%) in the pre AWRS period and 22 patients (20%) in the post AWRS period ($p < 0,05$). The recurrence rates in the pre AWRS period was 18% (35 patients) and in the post AWRS period was 8% (10 patients)

Conclusion: Despite a small number of patients and a pandemic period during the observation interval, we concluded that the opening of an Abdominal Wall Hernia service in a public brazilian universitary hospital brought benefits to postoperative outcomes with statistical relevance, observing a greater number of retromuscular repairs with a decrease in the number of global complications and hernia recurrence. There is a need for a longer observation interval to confirm the initial conclusions obtained

12. Limited Or Lasting: Is Preoperative Weight Loss Maintained After Open Ventral Hernia Repair?

A Holland, W Lorenz, M Katzen, S Kundu, D Rosas, B Mead, G Scarola, S Ayuso, V Augenstein, B Heniford
Atrium Health Carolinas Medical Center

Background: Obese patients are at higher risk for developing intraoperative and postoperative complications when undergoing elective surgery compared to healthy weight patients. Surgical issues involving obesity include technical difficulty, increased operative time, longer length-of-stay, cardiac events, thromboembolic disease, and surgical site infections, and in abdominal wall reconstruction (AWR), increased recurrence after repair. Given this, many institutions have implemented preoperative weight loss as a form of prehabilitation to improve patient safety. The perioperative efficacy of preoperative weight loss has been validated short-term, but few studies have examined long-term weight loss (WL) outcomes postoperatively following open AWR.

Methods: A prospective, single-institution AWR database was queried for patients with a BMI≥25kg/m2 on the day of surgery and minimum of 10lbs weight loss from initial consultation to time of elective AWR. Patients' weight was followed for two additional time points postoperatively: postoperative appointment at 6 months or later and their most recent documented weight in the medical record. Data were gathered from chart review and analyzed using standard descriptive statistics.

Results: A total of 257 patients met inclusion criteria; average age was 58.2±11.2years, 30.7% were diabetic, 1.6% were active smokers, and 67.7% were ASA class III or IV. At initial clinic consultation, the average BMI was 38.1±6.6kg/m2 and 34.0±5.8kg/m2 at time of surgery. Patients lost an average of 26.0±17.1lbs (10-120lbs) preoperatively over 9.9±13.5months. Between the initial clinic visit and surgery date, 45.9% of patients lost between 10-20lbs, 27.2% lost 20-30lbs, and 26.9 lost ≥30lbs of weight.

Intraoperatively, defect size averaged 290.4±205.8cm2, 53.3% of patients underwent component separation, and 61.1% underwent concurrent panniculectomy.

At the first postoperative time point, averaging 8.4±9.0months after surgery, patients' BMI was 33.6±5.8kg/m2 and had lost an additional 1.8±16.2lbs. At the latest postoperative follow-up, 42.0±36.1months following surgery, patients gained back 2.1±27.1lbs for a net loss of 24.0±31.9lbs since the original consultation. After surgery, 47.1% of patients continued to lose weight for an average of 18.6±26.4lbs (total net WL of 44.6lbs) and a corresponding decrease in BMI by another 2.5±3.6kg/m2; 0.8% maintained their same weight; and 23.0% gained back less than half of their preoperative WL, totaling 70.9% of patients with long-term optimization. Another 12.8% gained more than half of their WL but remained less than their consult weight (Figure 1).

Conclusion: Patients averaged losing 26 pounds prior to surgery and were an average of 24 pounds less than their initial consult weight 3.5 years later. Nearly half of the patients continued to lose weight after surgery. With long-term follow-up, more than 70% of obese patients' weight remained less than their original weight. These results demonstrate longevity to preoperative optimization of a patient's weight, which has the potential to benefit other aspects of health beyond hernia repair. This study serves as an example for elective AWR practices to support their patients through preoperative weight loss.

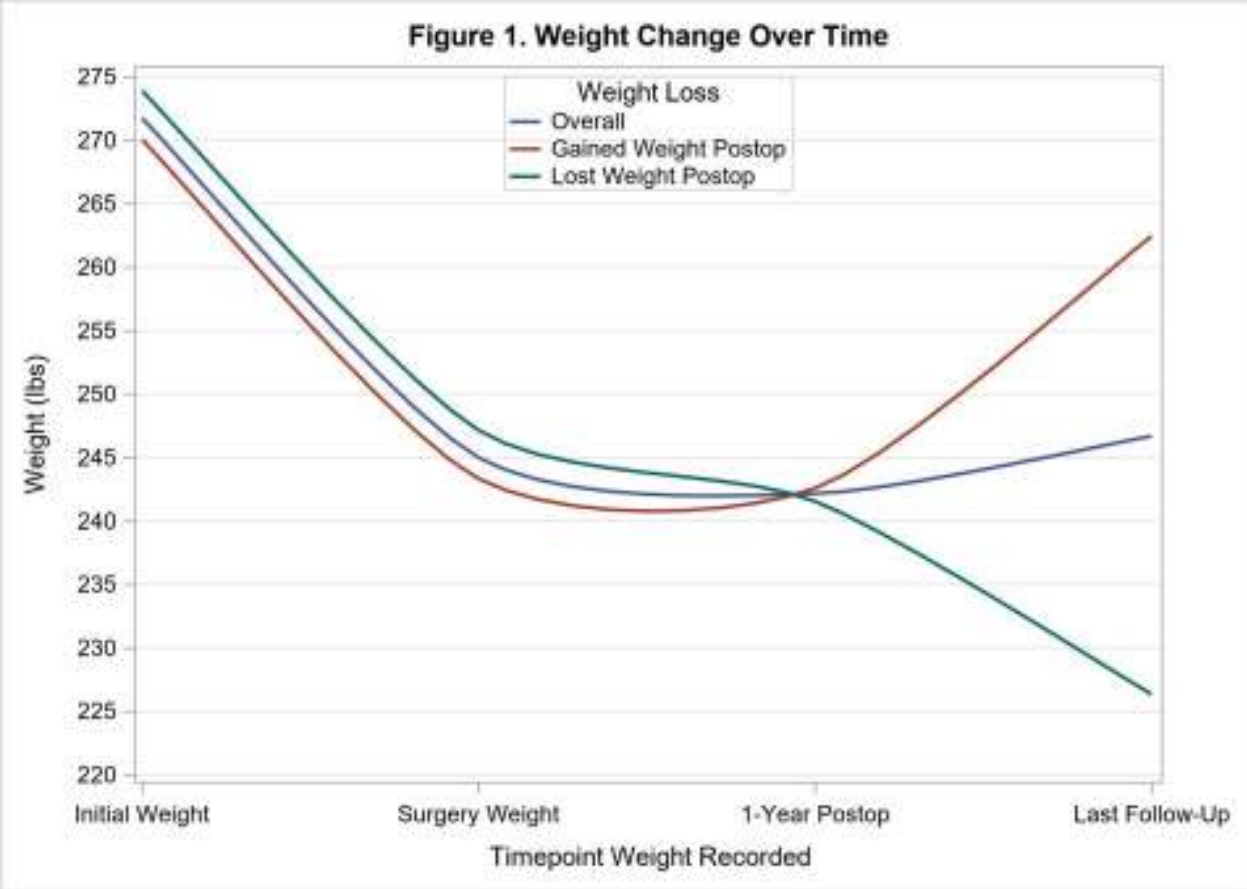
Figure 1. Weight Change Over Time
Weight Loss
Overall
Gained Weight Postop
Lost Weight Postop
275
270
265
260
255
250
245
240
235
230
225
220
Weight (lbs)
Initial Weight
Surgery Weight
1-Year Postop
Last Follow-Up
Timepoint Weight Recorded

13. Impact Of Glucagon-Like Peptide-1 Agonists In Optimizing Abdominal Wall Reconstruction Patients

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Background: Pre-optimization of obese patients prior to abdominal wall reconstruction (AWR) is essential in mitigating their increased preoperative risks. Traditionally diet, exercising, bariatric surgery are the tools typically prescribed for weight loss. The advent of glucagon-like peptide-1 agonists (GLP-1A) which stimulate insulin secretion and inhibit gastric emptying have improved the weight loss armamentarium. However, there is a limited amount of literature on GLP-1A effectiveness and postoperative outcomes in AWR patients. This study compares the efficacy of GLP-1A to Bariatric Surgery (BAS) in perioperative AWR patient.

Methods: A prospectively maintained database was retrospectively reviewed to identify all patients undergoing AWR at our institution between January 2021 and March 2024. We included patients who required GLP-1A or BAS for weight optimization prior to AWR. We excluded patients on GLP1-A or history BAS not performed for AWR pre-optimization. Basic demographics such as age, sex, race, weight and BMI at initial clinic visit and at surgery were compared. Primary endpoints included time to surgery, time to bowel recovery and length of stay (LOS). Time to surgery was defined as the number of months between the initial clinic visit and AWR. Time to bowel recovery was defined as the number of days it took for the first postoperative bowel function. Secondary endpoints included standard 30-days postoperative variables. Nominal variables were analyzed using a Fisher exact test and continuous variables were analyzed with Student's T test.

Results: 35 patients were included in this study (GLP-1A: 17, BAS: 18). The GLP-1A cohort had a lesser BMI at the initial clinic visit (40.8 vs 43.4, p = 0.188). GLP-1A cohort made it to the operating room faster (9.1 months vs 13.5 months, p = 0.06) from the first clinic visit; and (7.9 months vs 9.7 months, p = 0.4) from initiation of weight loss intervention. Albeit losing less weight (14.9 kg vs 27.1 kg, p = 0.008) with a lesser reduction in the BMI (4.69 vs 9.23, p = 0.004). The GLP-1A cohort showed a non-significant elevated LOS (5.2 days vs 3.6 days, p = 0.25) and an increased ileus rate (17.6% vs 0%, p = 0.1). However, there were no differences noted in time to bowel recovery (2.9 days vs 3.1 days, p = 0.76).

Conclusion: GLP-1A is effective in optimizing patients needing weight loss before AWR. They shorten the timeline to AWR intervention and have comparable peri-operative outcomes to BAS patients.

14. Age Is Just A Number: Sex Is A Greater Predictor Of Inguinal Hernia Presentation And Outcomes

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Beverly Hills Hernia Center

Background: Inguinal hernia repair is one of the most common operations performed in the US. With the increasing aging population and prevalence of inguinal hernias, it is essential to understand the impact of age and sex on patient presentation and expectations to optimize patient care. We report common preoperative symptoms from inguinal hernias, stratified by age and sex, in addition to differences in outcomes after tailored hernia repair.

Methods: A retrospective review of a hernia database was performed including all patients who underwent primary inguinal hernia repair from 2009 to 2022. Preoperative characteristics and postoperative outcomes were compared between patients who are ≥65 years old and the rest of the cohort. Multivariate regression analysis was used to adjust for age- and sex-based differences.

Results: A total of 494 patients were included, of whom 202 (40.9%) were female. Operative approach included open (30.3%), laparoscopic (65.8%), robotic (3.5%), and hybrid (0.4%) repairs. There were 120 (24.3%) patients who were 65 years of age or older. Older patients were significantly more likely to be asymptomatic (15.4% vs 6.5%, $p< 0.01$) with lower pain scores (2.7 vs 3.1, $p=0.04$) than the younger cohort. Furthermore, the older patients had significantly less shooting pain, back pain. Leg pain, scrotal/labial pain, and pain radiating to the groin (all $p< 0.05$). Open repair was more common in older patients (55.5% vs 22.3%, $p< 0.01$), who also had higher incidence of direct hernias (36.7% vs 20.9%, $p< 0.01$) and mesh repairs (98.3% vs 93.0%, $p=0.04$).

When controlling for sex, many of the age-related findings corrected, including presence of pain, pain scores, and mesh use (all adjusted $p>0.05$). Older patients continued to have significantly less leg pain, scrotal/labial pain, and pain radiating to the groin (all adjusted $p< 0.05$). Sex-adjusted rates of femoral hernias were similar between the two groups, and direct hernias remained more common in the older group ($p< 0.01$).

Postoperative pain scores were comparable between age groups (1.2 vs. 1.5, $p=0.26$), with older patients demonstrating superior symptom resolution (95.8% vs. 89.1%, $p=0.03$). However, this difference was not significant after adjusting for sex ($p=0.10$).

Conclusion: Patients ≥65 years old present differently than their younger counterparts, however we show that sex could be more influential than age alone on inguinal hernia symptomatology. Prior studies have examined differences in outcomes based solely on age or sex. However, by having a substantial female population, our research underscores the significance of considering both age and sex in understanding inguinal hernia characteristics and outcomes. Though at first it seems that younger patients have a more nuanced presentation, this is likely a consequence of sex-based differences rather than age-specific factors. Older patients are more likely to be asymptomatic or with local non-radiating symptoms. Recovery is expected to be similar across age groups.

15. A Review Of Post-Operative Care For Ventral Hernia Repair

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Background: Postoperative care for ventral hernia repair (VHR) has the potential to improve outcomes if used in an effective manner; however, there are difficulties in achieving this as many aspects of postoperative management lack evidence-based guidelines. This study provides a review of aspects of postoperative care including antibiotic prophylaxis, dressings and negative pressure, abdominal binders, and activity restrictions.

Methods: A literature search using EMBASE and PUBMED was done to include systematic reviews, meta-analyses, RCTs, and guideline papers relating to VHR. There were 388 papers included in the initial search results. After removing duplicates, conference abstracts, and other articles not relevant, there were 193 remaining studies. These were reviewed, and 12 articles were related directly to post-operative recommendations for VHR. These papers were divided into sections relating to antibiotic prophylaxis, dressings and negative pressure, abdominal binders, and activity restrictions.

Results: Postoperative antibiotic prophylaxis in VHR has been discussed in two articles which included 4,834 total patients. One review including 4 studies with 344 total patients supports for use of prophylactic antibiotics to decrease surgical site infection (SSI) rate (NNT=3.4, P< 0.01) with the strongest benefit occurring in subgroups with higher grade hernias and wounds; however, another recognized no significant impact when used broadly. Specifically, in VHR patients with closed suction drains, one study found that antibiotic prophylaxis has not been shown to provide benefit; however, they recognized a need for further studies. While the effectiveness of wound drains in incisional abdominal hernia repair has insufficient evidence to provide recommendations in three studies, there have been five reviews of negative pressure wound therapy (NPWT) in VHR. These reviews have an average of 1037 patients each and four found a significant decrease in SSI, seroma, skin necrosis, and wound dehiscence and the other (a primarily financial analysis) found increased upfront cost with potential cost savings. NPWT may not be needed in all patients but should be recommended in patients with a higher wound risk. One review on abdominal binders provided weak and limited evidence for any changes in outcomes after VHR. One review found limited data supporting specific timelines for activity restriction after VHR. However, the European Hernia Society recommends approximately 4 weeks of restrictions after VHR with an emphasis on consideration of patients' risks.

Conclusion: Although every patient receives postoperative recommendations and care, there is little evidence to provide recommendations specifically for VHR patients. With effective evidence-based implementation of postoperative adjuncts, recommendations have the potential to decrease SSI, pain, and other negative outcomes especially in high-risk patients. Therefore, it is important to continue to evaluate the emerging evidence and develop guidelines for their use.

16. Fistulizing Metastatic Squamous Cell Carcinoma: An Acceptable Cost Of Over-Optimization In Ventral Hernia Repair?

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Maine Health

Background: The benefits of preoperative optimization for ventral hernia repair are well documented. Controlling risk factors such as diabetes, tobacco use and obesity can reduce the risk of wound complications, morbidity associated with surgical site infections, and potentially recurrence. More recently the costs of optimization, including the creation of disparities in care has become an active topic in the literature. We present a case of a patient who developed metastatic squamous cell carcinoma (SCC) due to a chronic ulcer over a ventral hernia which was left unaddressed due to her obesity.

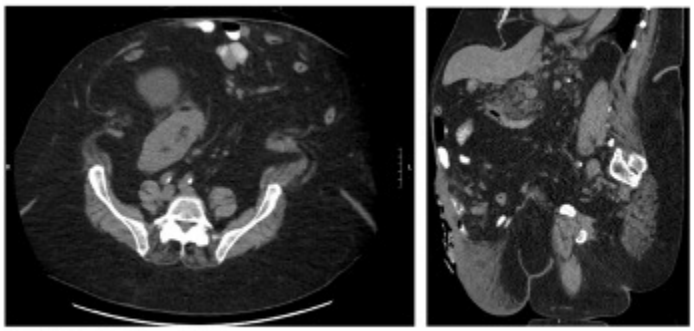
Methods: A 72-year-old morbidly obese (BMI >50) female with a complex surgical history starting with a primary umbilical hernia repair (2002) followed by four further repairs eventually leading to a mesh infection (2011). This was treated with mesh excision, a bridged vicryl repair and a wound vac. Over the next 12-years she was followed for a large recurrent ventral hernia and treated for a non-healing wound to the anterior abdominal wall. She participated in a bariatric program where she lost 40 pounds in 2018, but regained this weight. In 2023 she presented again to the surgical office for reevaluation of her ventral hernia and chronic wound. She was encouraged to lose weight and was referred for further wound management. Months later, she was admitted with a fungating wound and an enterocutaneous fistula. She underwent an exploratory laparotomy with intraoperative findings of a fungating mass eroding though the adjacent soft tissue, abdominal wall and small bowel. She underwent resection of the mass, enterocutaneous fistula takedown, small bowel resection with primary anastomosis, abdominal closure with bridging vicryl mesh and superficial wound VAC placement. Final pathology demonstrated metastatic SCC with invasion into the small bowel and with mesenteric lymph nodes positive for disease. She had a prolonged post-operative course. Ultimately, she elected to pursue hospice and succumbed four months after her operation.

Results: Malignant transformation of chronic wounds, commonly termed Marjolin's Ulcers, is a rare complication with an estimated incidence of 1-7%. This condition can lead to an aggressive form of SCC. Chronic inflammation, repeated re-epithelialization, and poor vascularization are contributing factors and are characteristics of ischemic ulcers overlying hernia defects. This case supplements others presented in the literature of SCC associated with chronic mesh infections.

Although there are numerous studies demonstrating favorable outcomes in patients who undergo preoperative optimization, data on emergent complications for those not achieving optimization is limited. There is even less data about patients suffering from chronic, morbid conditions secondary to lack of treatment due to inability to reach optimization goals.

Conclusion: Preoperative optimization is a valuable concept that offers significant benefit to patients; however, the true cost of optimization is unknown. Not all patients are successfully optimized, and prolonging the time to surgery can cause serious consequences. There is a clear need for further investigation into the impacts of optimization and the risks of non-operative management, as well as a push towards individualized optimization goals.

Wound Progression



CT Abd/Pelvis Sept 2023

17. Is Sarcopenia Associated With Worse Outcomes Following Ventral Hernia Repair? A Systematic Review And Meta-Analysis

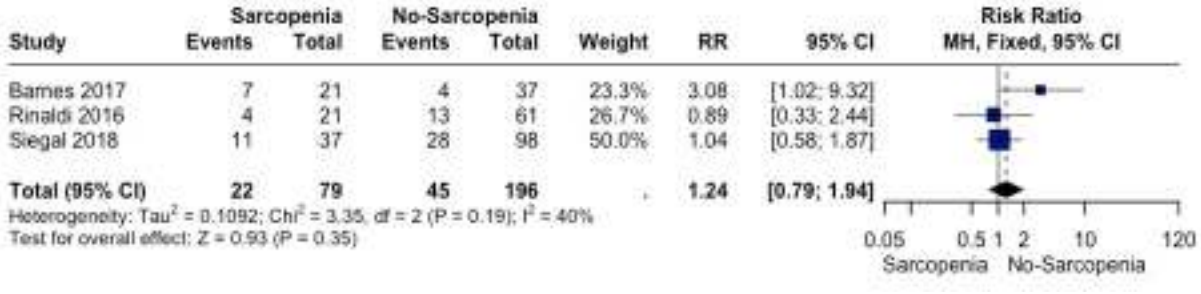
C Silveira, D Zamata-Ovalle, A Rasador, J Kasakewitch, D Lima, F Malcher
Montefiore Medical Center

Background: The concept of preoperative prehabilitation has garnered attention as a means to manage the comorbidities of patients undergoing ventral hernia repair (VHR). In this regard, some comorbidities have been studied as potential risk factors for postoperative complications following ventral hernia repair, such as diabetes, immunosuppression, and smoking. However, evidence regarding the impact of sarcopenia, defined by reduced muscle mass and highly associated with frailty syndrome, remains a gap. We aimed to perform a systematic review and meta-analysis analyzing the impact of sarcopenia on VHR outcomes.

Methods: Cochrane Central, Embase, PubMed, MEDLINE, and Web of Science were searched for studies analyzing the impact of sarcopenia on VHR from inception until April 2024. Outcomes assessed were recurrence, surgical site occurrences (SSO), surgical site infection (SSI), and hospital length of stay (LOS). Data analysis was done using RStudio 4.1.2 Software.

Results: The initial search yielded 263 results, of which 172 were screened after the exclusion of the duplicates. The full-text review was done for eight studies, of which three were included after applying the eligibility criteria. Our sample comprised 275 patients, of which 79 (28,7%) presented with sarcopenia. All included studies used radiologic muscle findings to define sarcopenia. Our analysis showed no differences in recurrence rates, with a follow-up between 9 and 17 months, between patients with sarcopenia and controls (27.8% vs. 22.9%; RR 1.24; 95% CI 0.79 to 1.94; P = 0.35) (Figure 1). Furthermore, no differences were found in SSI (20.7% vs. 28.9%; RR 0.7; 95% CI 0.39 to 1.25.; P = 0.23). Interestingly, a higher SSO rate was noted for patients without sarcopenia (24.1% vs. 40.9%; 95% CI 0.35 to 0.96; P = 0.04). No differences were found in LOS (MD 4.7 hours; 95% CI -0.67 to 10.1; P = 0.4).

Conclusion: Our analysis showed a reduced SSO for patients with sarcopenia. However, no differences were found in recurrence, SSI, and LOS following VHR.



18. Does Progressive Preoperative Pneumoperitoneum Aid Fascial Closure In Loss Of Domain Hernias? A Retrospective Review

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Prisma Health System, University of South Carolina School of Medicine

Background: Ventral hernias with loss of abdominal domain are a challenging surgical problem, and multiple adjuncts have been proposed to increase the chances of fascial closure and successful hernia repair. Progressive preoperative pneumoperitoneum (PPP) is one such adjunct, though the degree to which this technique aids in definitive hernia repair is debated.

Methods: A retrospective review was conducted at a tertiary referral center in the US. Patients who underwent herniorrhaphy for ventral hernia with loss of domain from 2008-2024 were included. Loss of domain was defined as hernia sac : abdominal cavity ratio (HS:AC) > 20%. Data were collected on demographics, comorbidities, and anatomic characteristics of the abdominal wall and hernia. Patients were stratified according to whether or not they underwent PPP.

Results: 78 patients were included - 47 patients (60%) underwent PPP prior to definitive repair, while 31 patients (40%) did not. There were no significant differences between patient groups with regard to basic demographics or comorbidities. Patients who underwent PPP had larger hernias, with significantly larger median width (18 vs 15 cm, $p< 0.01$), narrower rectus muscles (5.1 vs 8.1 cm, $p< 0.01$), and larger median HS:AC ratio (0.5 vs 0.3, $p< 0.01$). There were no significant differences in patients requiring external oblique (PPP 49% vs 29% no-PPP, $p=0.10$) or transversus abdominis release (PPP 38% vs 48% no-PPP, $p=0.48$). There was no difference in the rate of successful fascial closure (PPP 72% vs no-PPP 84%, $p=0.28$). Patients undergoing PPP did have higher rates of reoperation (27% vs. 6.5%, $p=0.02$) and SSO (53% vs 29%, $p=0.4$), whiles the rate of recurrence (PPP 17% vs. no-PPP 3.2%, $p=0.08$) and SSI (PPP 28% vs. no-PPP 13%, $p=0.17$) were higher in the PPP group but did not reach statistical significance. Reoperations in the PPP group were primarily for wound complications (9 of 13, 69%) or recurrence (4 of 13, 31%). There were 9 patients (19%) who suffered complications attributable to PPP, including severe crepitus or pneumomediastinum requiring cessation of insufflation (2 patients), transient hypotension (2 patients), misplaced catheter (2 patients), SBO (1 patient), small bowel ischemia requiring resection at the time of herniorrhaphy (1 patient), and hemorrhage requiring laparotomy (1 patient).

Conclusion: In this retrospective analysis of patients with loss of abdominal domain, PPP was not associated with increased rates of fascial closure, though anatomic markers of hernia complexity were higher among patients undergoing PPP. Patients undergoing PPP had a median HS:AC ratio of 0.5, significantly larger than traditionally suggested in literature. Given possible complications associated with the method and undetermined benefit, surgeons may consider a higher threshold for recommending PPP to patients with loss of abdominal domain.

19. Six Months Of Patient Optimization Reduces The Risks Of Complications In Abdominal Wall Reconstruction Surgery

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Northwell Health

Background: A ventral hernia is a protrusion of abdominal tissue or organs through a weakened area in the abdominal wall. Larger ventral hernias often require open abdominal wall reconstruction (AWR) via component separation and mesh reinforcement to regain abdominal wall integrity; however, the advent of robotic surgery has facilitated minimally invasive approaches. Our purpose is to demonstrate the impact of a standardized, minimally invasive AWR program while analyzing the effect of preoperative counseling on high risk patients over a 6 month period.

Methods: 53 patients underwent AWR at a single institution from January 2017 to November 2023. Modifiable risk factors (smoking status, HbA1C level, and excess body weight) as well as procedure metrics (botox use for larger hernias and hernia size defect) were obtained from patient records at the time of initial clinic evaluation and the date of surgery. At the initial visit, patients were counseled on improving their modifiable risk factors prior to undergoing surgery to reduce the risk of complications, which was collected through the Carolinas Equation for Determining Associated Risks (CeDAR) application. The data was analyzed using a paired t-test with the statistical significance set at $p< 0.05$.

Results: The average duration between initial visit and surgery was 187 days. 40% of our patients have previously undergone a prior ventral hernia or umbilical hernia repair. After counseling, 87.5% of our smoking cohort underwent cessation prior to surgery. The reduction in HbA1C ($p=0.017$), excess body weight ($p=0.0102$) and complication risks ($p=0.0014$) were statistically significant, while the change in BMI is approaching statistical significance ($p=0.06$).

Conclusion: This study serves as a foundation to develop a nationwide, standardized, and reproducible model for minimally invasive AWR for high risk patients. Extensive counseling for modifiable factors were emphasized, which reduced the CeDAR percent risk of complication prior to undergoing surgery. All patients underwent successful closure with no documented readmissions or complications. Of our 53 patients, two had a recurrence of their ventral hernia demonstrating a 3.7% recurrence rate as opposed to the 44.9% recurrence rate in patients with prior mesh repair and 73.7% in patients without prior mesh repair in the general population. Further project development and patient registry expansion is important in understanding the full impact that these steps have on surgical outcomes.

Table 1: Preoperative Modifiable Risk Factors

	First Visit	Date of Surgery	% Change	Significance
Active Smokers (n=8)	8 (15%)	1 (2%)	-87.5%	
HbA1C (n=13)	7.41 ± STD 1.77	6.3 ± STD 1.3	-14.7%	p=0.017**
Excess body weight (kgs) (n=53)	27.10 ± STD 14.60	25.40 ± STD 13.26	-6.3%	p=0.0102**
BMI (kg/m^2) (n=53)	31.06 ± STD 5.21	30.63 ± STD 4.92	-1.3%	p=0.0683
CeDAR Scores				
Risk of Complications (%)	43.82 ± STD 0.139	42.06 ± STD 0.135	-4.0%	p=0.0014**

STD= standard deviation
**Statistically significant

Table 2: Patient Demographics

Gender	56% Female (30/53)
Average Age	59 years old
Average Number of Previous Surgeries Prior to AWR	2 surgeries
Previous Hernia Repair	40% (21/53)
Average Hernia Defect Size	68.01 cm^2

Table 3: Averages of procedure metrics

Average Length of Counseling	187 days
% Received Botox	50% (26/53)
% Stayed MIS	47% (25/53)
Average Hernia Defect Size	68.01 cm^2

20. Assessment Of Risk Factors For Incisional Hernia (IH): A Meta-Analysis Of Retrospective Cohort Studies With Development Of A Predictive Scale

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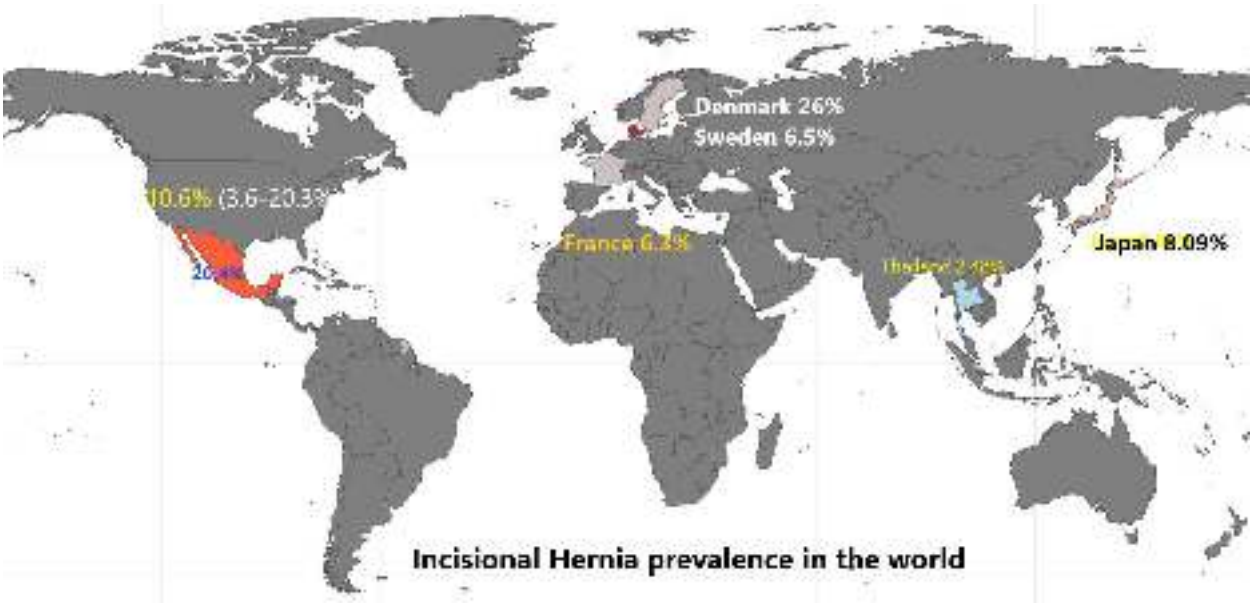
IMSS Bienestar Hospital regional de Alta Especialidad del Bajio

Background: IH is the primary complication following a laparotomy, associated with high morbidity and mortality as well as significant clinical impact. For its prevention, prophylactic mesh is recommended in high-risk patients. However, determining which patients are at high or low risk remains challenging. This study aims to evaluate the risk factors described in studies where a predictive scale is developed and to determine which factors are related to the occurrence of this complication.

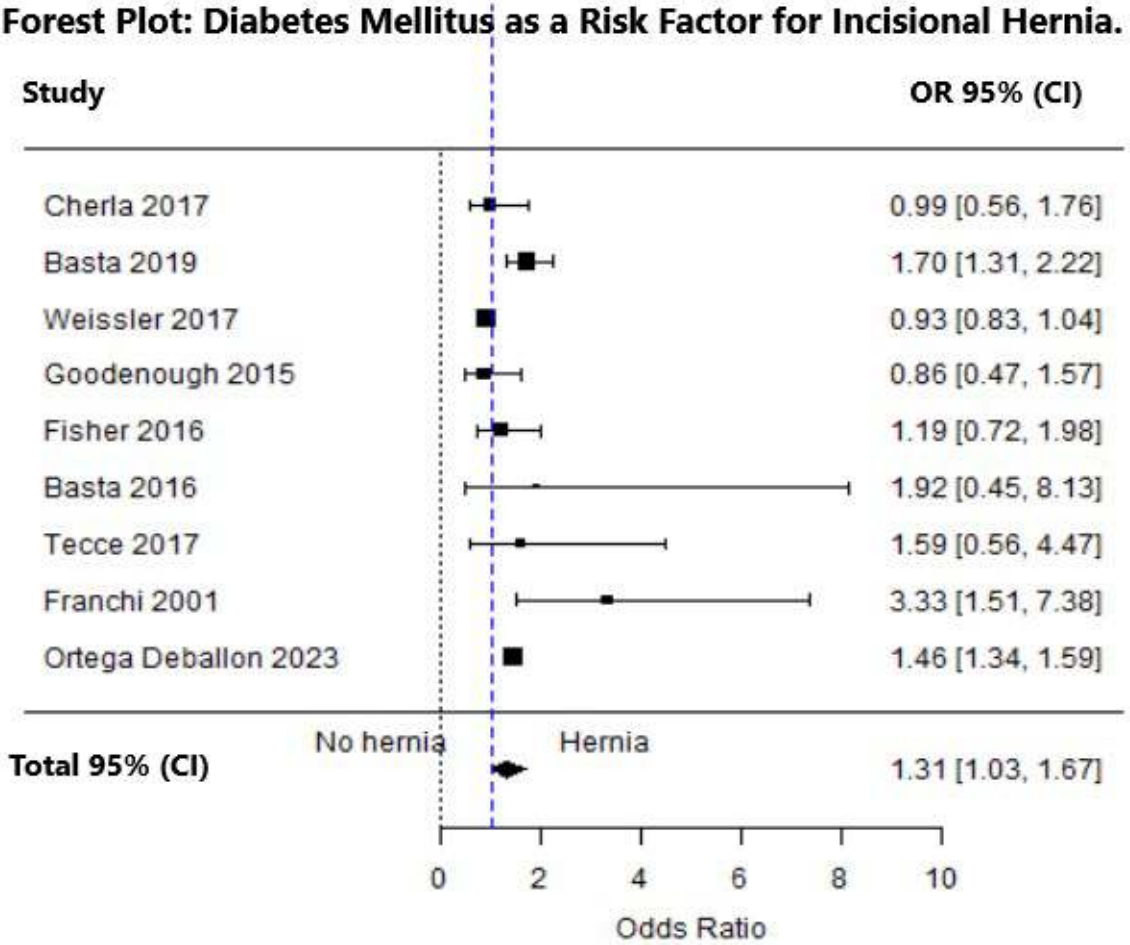
Methods: A meta-analysis was performed following the PRISMA guidelines. We included retrospective cohort studies that reported on the prevalence of incisional hernia and associated risk factors. The primary objective was to determine the prevalence of incisional hernia (IH) and differentiate the risk factors associated with the occurrence of this complication. We used the random effects model to account for both within-study and between-study variance, employing the DerSimonian and Laird methods. Heterogeneity was assessed using the I^2 statistic and Tau^2 tests, and potential sources of heterogeneity were explored through subgroup analyses based on patient age, gender, and type of surgery. The risk of bias for each study was evaluated using the Newcastle-Ottawa Scale.

Results: A total of 16 studies were included (10 from the USA, and one each from Mexico, Thailand, Denmark, Japan, France, and Sweden). The studies comprised 806,017 patients, of whom 43,135 developed incisional hernias. The overall prevalence (total patients with hernia divided by total patients) was 5.3%, while the average prevalence reported by the studies was 9.8%. A total of 86 different variables used in the studies were analyzed. It was found that the presence of Surgical Site Infections (SSI), Diabetes, and Obesity (BMI > 30 k/m2) were factors associated with the occurrence of this complication. No differences were found in the variables age, male gender, and diabetes, which are traditionally considered risk factors.

Conclusion: The prevalence of IH was 9.8%. The risk factors associated with the occurrence of IH were the presence of Surgical Site Infections (SSI) and obesity, determined by a BMI greater than 30 kg/m^2.


Denmark 26%
Sweden 6.5%
10.6% (3.6-20.3%
France 6.2%
Japan 8.09%
Incisional Hernia prevalence in the world

Forest Plot: Diabetes Mellitus as a Risk Factor for Incisional Hernia.



Heterogeneity: $\tau^2 = 0.07$ $\chi^2 = 53.37$ DF 8 p= 0.0001 $I^2 = 83.34\%$

Test for overall effects: Z=2.17 P=0.0295

22. Transversus Abdominis Plane (TAP) Block For Postoperative Pain Management After Ventral Hernia Repair: A Systematic Review And Meta-Analysis

A Rasador, N Pereira, C Silveira, D Lima, F Malcher
Montefiore Medical Center

Background: The acute postoperative pain remains a common concern following ventral hernia repair, especially following open procedures. We aim to assess the effectiveness of the Transversus Abdominis Plane (TAP) block for the management of postoperative pain following ventral hernia repair.

Methods: Cochrane, EMBASE, MEDline, PubMED, and Web of Science were searched for studies comprising adults undergoing VHR with TAP block, compared to placebo and epidural analgesia. The outcomes selected were postoperative numerical rating scale (NRS), postoperative morphine milligram equivalents (MME) per day, and hospital length of stay (LOS). Subgroup analysis was performed for studies using the Liposomal Bupivacaine.

Results: 14 studies were included, comprising 9 retrospective cohort studies and 5 RCTs, totalizing 1,617 patients. Our meta-analysis revealed that the TAP block is associated with a shorter LOS compared to conventional pain measures (MD -1,14 days; 95% CI -2.05, -0.22; P=0.014) and to epidural analgesia (MD -2.02 days; 95% CI -2.67, -1.37; P< 0.001), and lower NRS scale in the day of surgery (MD -1.24; 95% CI -1.81, -0.68; P< 0.001) and in the POD1 (MD -0.63; 95% CI -1.18, -0.08; P=0.025) compared to placebo. No significant differences were seen between TAP block and either epidural analgesia or placebo for opioid consumption. No differences were seen between TAP block and epidural analgesia for the NRS scores. Subgroup analysis of Liposomal Bupivacaine showed similar results as the pooled analysis.

Conclusion: The TAP block is associated with shorter LOS compared to both placebo and epidural analgesia and is related to less early postoperative pain compared to the conventional pain measures. The TAP block should be considered as a pain management modality for ventral hernia repair, although cost-effective analysis is still required to address the feasibility of the routine utilization of this approach and to balance the benefits of its application in a financial manner.

23. Treating The Female Indirect Inguinal Hernia By Using Single-Port Laparoscopic Percutaneous Internal Ring Suture – From Children To Adults

S Wang, D Ho, J Yen
ChangGung Memorial hospital, Chiayi

Background: To assess the efficacy and safety of the single-port laparoscopic percutaneous internal ring suture (SPIRS) technique in repairing the indirect inguinal hernia of female adults.

Methods: The medical records of females who were clinically assessed to have inguinal hernia from Oct. 2016 to April 2024 were reviewed. Patients who received laparoscopic classification of the hernia types and customized treatment according to their type were included, excluding those who initially chose alternative surgical interventions. The patients were divided into the adult (A) and pediatric (P) groups based on their age. The demographic characteristics, hernia types, operation durations, and outcomes were analyzed between these two groups.

Results: A total of 88 adults and 84 children were included in this study. The median age was 39 years (range: 23-88) for group A and 3 years (range: 0.05-16) for group P. Indirect hernias were present in 80.6% of adults and 100% of children. All the indirect hernias were repaired by SPIRS uneventfully. Incidence of contralateral patent processus vaginalis was 25% in adults and 51% in children ($p=0.016$). The average operation time was 21.5/42 minutes (one/two sides) for the adults and 9/15 minutes (one/two sides) for the pediatrics ($p< 0.010$ for both). The overall complication rates were 4.2% and 2.3% for the adult and pediatric group respectively ($p=0.106$). No recurrence was observed in the pediatric group, but two adults experienced recurrence and another had chronic postoperative inguinal pain, necessitating reoperation. The mean follow-up period was 44.6±15.4 months for adults and 48.8±18.9 months for children ($p=0.198$).

Conclusion: Our results support that the pathogenesis of indirect inguinal hernia for the female adults is due to the non-obliteration of a congenital processus vaginalis. Tailored treatment of the female IIH by using single-port laparoscopic percutaneous internal ring suture may be an alternative for the management of female IHs.

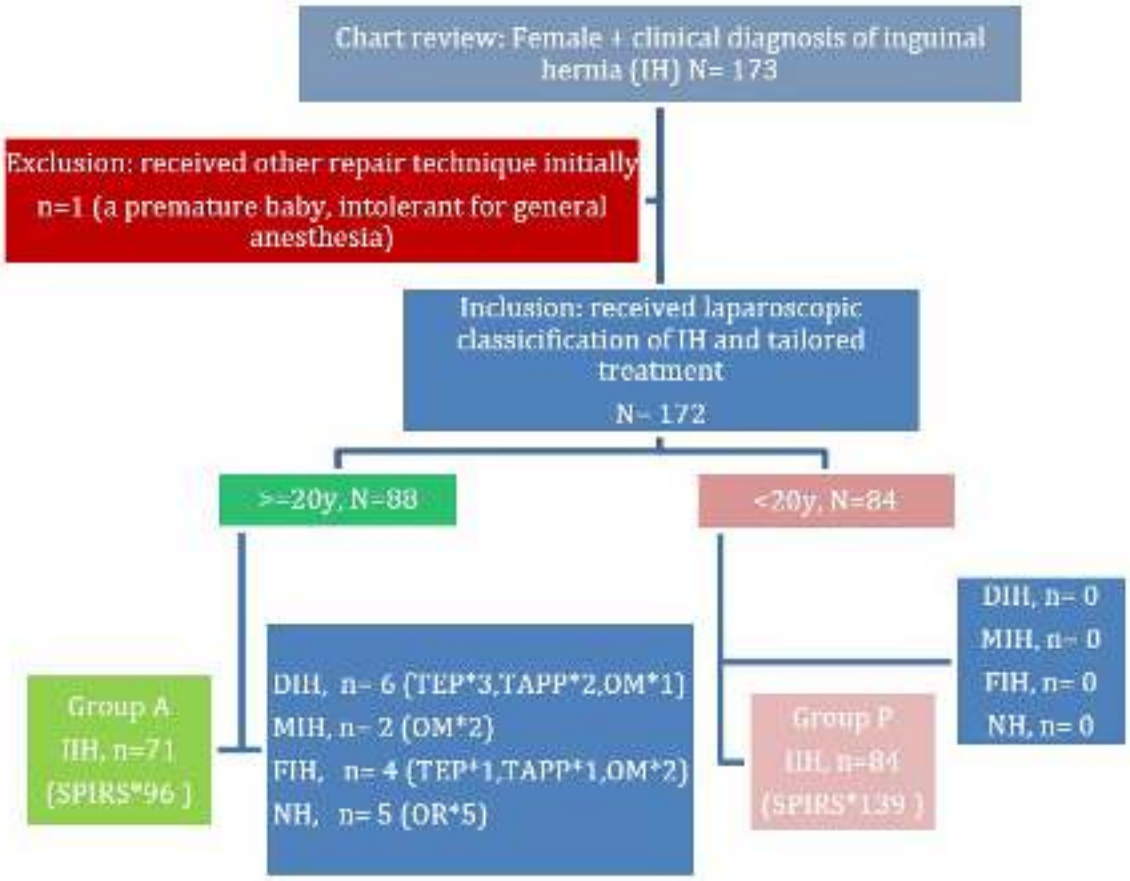


Chart review: Female + clinical diagnosis of inguinal hernia (IH) N= 173
Exclusion: received other repair technique initially
n=1 (a premature baby, intolerant for general anesthesia)
Inclusion: received laparoscopic classicification of IH and tailored treatment
N= 172
>=20y, N=88
<20y, N=84
Group A
IIH, n=71
(SPIRS*96)
DIH, n= 6 (TEP*3,TAPP*2,OM*1)
MIH, n= 2 (OM*2)
FIH, n= 4 (TEP*1,TAPP*1,OM*2)
NH, n= 5 (OR*5)
Group P
IIH, n=81
(SPIRS*1.39)
DIH, n= 0
MIH, n= 0
FIH, n= 0
NH, n= 0

24. Transabdominal Preperitoneal Inguinal Hernia Repair With The Dexter® Robotic System: Setup Description With Safety And Performance Data

L Gantner, H Mignot, J Pochhammer, F Grieder, S Breitenstein
Cantonal Hospital of Winterthur

Background: The Dexter robotic system is an innovative open platform with a sterile surgeon's console, two robotic instrument arms, and one robotic endoscope arm. Its modular structure and small format allow the system to be easily transferred between operating rooms or fit in ambulatory centers. The system is compatible with existing OR equipment including the imaging systems, energy generators and laparoscopic instruments. The operating surgeon is sterile at the console, which allows fast access to the patient and the best surgical technique. This patient's accessibility enables simple surgeries to be performed without an assistant surgeon present. This video is showing, step-by-step, how to perform a transabdominal preperitoneal (TAPP) inguinal hernia repair using the Dexter system. The video also presents the results of the first multicentric prospective clinical study on safety and performance of rTAPP repairs.

Methods: This video shows the system being installed in the OR before the surgery and the draping. The ports were placed in our familiar laparoscopic setup. The rapid docking of the robot is shown. The peritoneal flap was created using a monopolar scissors in the right arm and a bipolar Johann grasper in the left arm of the robot. The anatomical landmarks were identified, and the hernia sac and its content were reduced. The robotic arms were folded in the LAP mode of the robot to increase access to the trocars for the sterile surgeon during a large mesh insertion and positioning using laparoscopic tools to cover all potential defects. The robot arms were then unfolded back into position without the need for re-docking. The surgeon completed the procedure robotically, closing peritoneum using the robot needle driver in the right arm. The three surgeons who participated to the prospective study used similar techniques on the 50 subjects that participated.

Results: The mean age and BMI of the patients were 60 years (±15) and 25.7 kg/cm2 (±3.3). All 50 surgeries (33 unilateral, 17 bilateral hernia) were completed with no intraoperative complications and no conversions to open surgery. No device deficiency or adverse events of Clavien-Dindo Grade III to V occurred. The mean skin-to-skin operative times were 55 min (±14) for unilateral, 95 min (±22) for bilateral hernia. Docking time averaged 4 min (± 2), and robotic console times were 34 min (±12) for unilateral and 68 min (±21) for bilateral hernia.

Conclusion: The safety and effectiveness of rTAPP with the Dexter robotic system was demonstrated in this series of patients. This video showcases the Dexter robotic system as a valuable tool for safe and effective inguinal hernia repair.

25. Are Femoral Hernias Slipping Through The Cracks In Women? A Systematic Review And Proportional Meta-Analysis

A Rasador, C Silveira, D Lima, F Malcher
Montefiore Medical Center

Background: Given the nearly 4-times higher prevalence of femoral hernias among the female population compared to males, this diagnosis may be missed during inguinal hernia repair (IHR), causing increased risk of reoperation for pseudo recurrence of femoral hernias (FH). Minimally invasive approaches are suggested as potential reducers of missed FH since they provide a posterior view of all defect areas, despite studies suggesting that women receive less MIS than men. We aim to assess the possible missed FH during IHR and after reoperation for recurrence following IHR in women.

Methods: PubMED, Cochrane, and EMBASE databases were systematically searched for studies assessing patients undergoing recurrent IHR, analyzing the incidence of reoperation for FH and occult femoral hernias during IHR. Statistical analysis was performed using R software.

Results: From 6,226 records, 10 retrospective observational studies were included, totaling 15,863 patients (20% females). We found that 19.56 per 100 women (95% CI 8.34, 39.37) who are reoperated for an inguinal hernia are found as having a FH during the new repair. Compared to men, women were at a significant higher risk to be reoperated for FH after IHR (RR 8.97; 95% CI 7.35, 10.93; P< 0.001). Our analysis also showed that 20.7% of females received MIS approaches for groin hernia repair, while 79.3% received open procedures. Furthermore, our study found a pooled proportional incidence of occult FH during the initial IHR of 6.85 per 100 patients for both genders (95% CI 2.78, 15.90), which increased to 21.42 per 100 patients when assessing the female gender only (95% CI 15.46, 28.89).

Conclusion: Females are associated with a higher incidence of FH following reoperation for recurrence of inguinal hernia repair. Added to the high rate of occult FH encountered during inguinal procedures, this suggests a possible missed diagnosis of femoral hernias during IHR. The adoption of MIS IHR for women, following the indications of the latest guidelines on groin hernia, is fundamental to reduce the underdiagnosis of FH.

26. Do Female Patients Suffer Worse Outcomes Than Male Patients After Inguinal Hernia Repair? An ACHQC Study

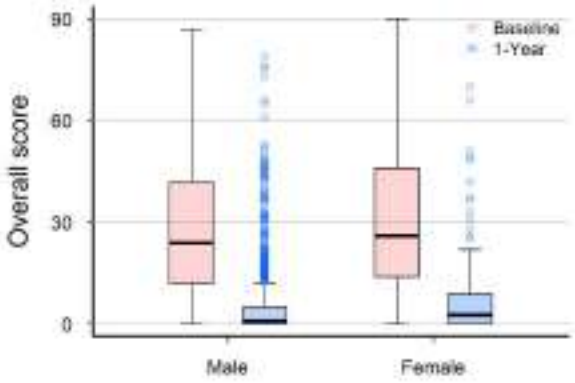
S Kumar, M Rama, S Podder, L Huang, S Tannouri, T Tatarian, F Palazzo
Thomas Jefferson University Hospital

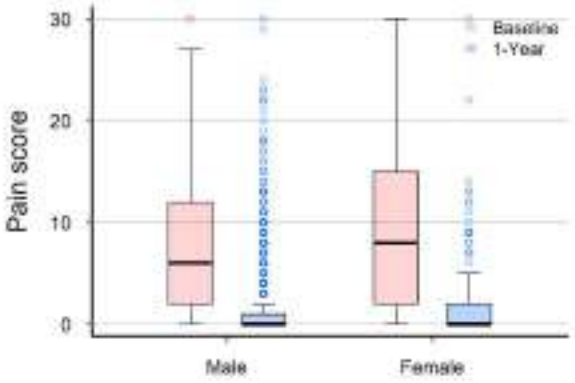
Background: Inguinal hernia repair (IHR) is one of the most common general surgical operations. Some evidence suggests that female patients are at higher risk of chronic postoperative pain and hernia recurrence. We investigated rates of chronic inguinal pain and recurrence after IHR in both male and female patients utilizing the Abdominal Core Health Quality Collaborative (ACHQC) database.

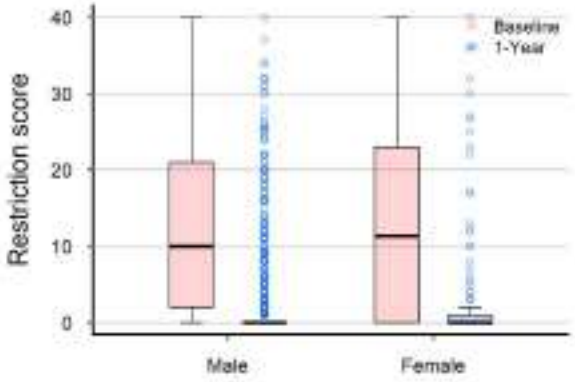
Methods: The ACHQC database was queried for patients undergoing elective, unilateral inguinal hernia repair with permanent synthetic mesh who completed 30-day clinical follow-up and baseline and 1-year European Registry for Abdominal Wall Hernias (EuraHS) surveys. Both open and minimally invasive (MIS) cases, including laparoscopic transabdominal preperitoneal (L-TAPP), laparoscopic totally extraperitoneal (TEP), and robotic transabdominal preperitoneal (R-TAPP) were included. Outcomes were compared via univariate analysis using Pearson and Wilcoxon tests for categorical and continuous variables, respectively. Multivariable linear regression models were then used to examine the outcomes of 1-year EuraHS pain, restrictions, and cosmesis scores while a logistic regression was used for recurrence.

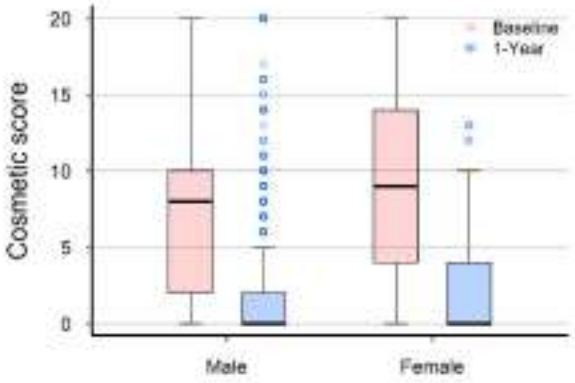
Results: The search identified a total of 1,582 subjects, 1,448 male and 134 female. Baseline characteristics of both groups were similar regarding age, medical comorbidities, operative approach, and operative time. In male patients, the approach was open in 41% and MIS in 59% (12% L-TAPP, 23% TEP, and 23% R-TAPP). In female patients, the approach was open in 35% and MIS in 65% (16% L-TAPP, 22% TEP, and 27% R-TAPP). Female patients more often had femoral hernias and the use of self-fixating mesh. Male patients more often had indirect hernias and underwent suture fixation. The ilioinguinal nerve was fully excised in 58% of female patients compared to 29% of male patients. Hernia recurrence rates were higher in female patients at both 1- and 2-year follow up (8% vs 4% p=0.03 and 8% vs 5% p=0.25). 1-year EuraHS overall and EuraHS pain scores were worse in female patients than male patients (p=0.004 and p=0.024, Figure 1). On multivariable regression analysis, female sex was associated with worse pain (adjusted effect size 0.76, 95% CI 0.16-1.36), restriction of activities (adjusted effect size 1.64, 95% CI 0.74-2.54), and cosmesis scores (adjusted effect size 0.77, 95% CI 0.21-1.32) compared to male sex. The odds of hernia recurrence in female patients undergoing their first IHR were similar to those of all patients undergoing repeat IHR (Figure 2). Furthermore, female sex may be a more important risk factor for recurrence than BMI or active smoking.

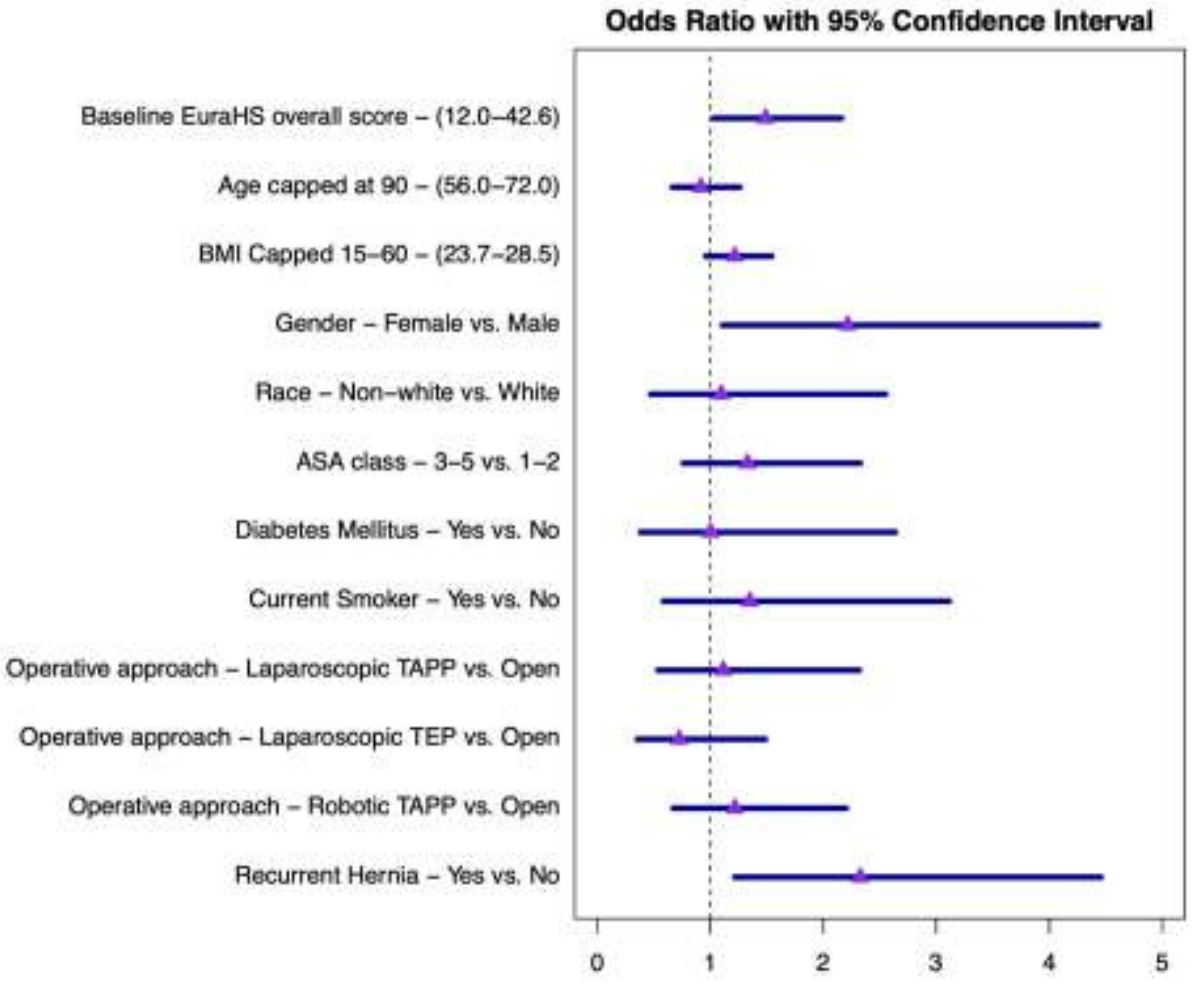
Conclusion: This study demonstrates that despite analyzing data from highly-trained hernia surgeons, who performed a greater proportion of minimally invasive IHR than is typically reported, recurrence and quality of life after IHR are strikingly worse in female patients. Identification of these disparities in outcomes is the first step towards achieving health equity in IHR.


Overall score
90
60
30
0
Baseline
1-Year
Male
Female


Pain score
30
20
10
0
Baseline
1-Year
Male
Female


Restriction score
40
30
20
10
0
Baseline
1-Year
Male
Female


Cosmetic score
20
15
10
5
0
Baseline
1-Year
Male
Female


Odds Ratio with 95% Confidence Interval
Baseline EuraHS overall score – (12.0–42.6)
Age capped at 90 – (56.0–72.0)
BMI Capped 15–60 – (23.7–28.5)
Gender – Female vs. Male
Race – Non–white vs. White
ASA class – 3–5 vs. 1–2
Diabetes Mellitus – Yes vs. No
Current Smoker – Yes vs. No
Operative approach – Laparoscopic TAPP vs. Open
Operative approach – Laparoscopic TEP vs. Open
Operative approach – Robotic TAPP vs. Open
Recurrent Hernia – Yes vs. No
0
1
2
3
4
5

27. Operative Recurrence After Inguinal Hernia Repair And Healthcare Expenditures: Propensity Score Matched Analysis Of Large US Claims Database

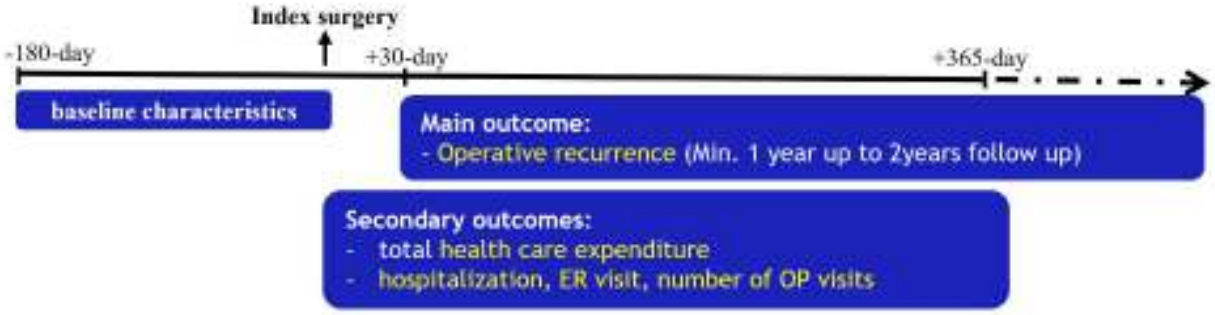
L Arias Espinosa, G Milky, H Bossie, H Atchison, I Shih, F Malcher
New York University Langone Health

Background: Over 20 million inguinal hernias repairs (IHR) are performed every year worldwide with approximately 750,000 occurring in the United States. Patients with recurrent hernias require a more complex repair and have a negative impact on quality of life. Factors that can prevent recurrence have been heavily studied, including the comparison of operative approaches. Minimally invasive surgery (MIS) has significant evidence of better outcomes such as less recurrence and lower patient reported pain compared to open procedures. A major limitation to widespread robotic-assisted repair is increased expenses compared to laparoscopic procedures. The aim of our study was to compare the 2-year operative recurrence rate and total healthcare expenditure between robotic-assisted IHR (R-IHR), laparoscopic (L-IHR) and open (O-IHR) approaches.

Methods: The MarketScan® research database was queried to retrospectively examine patients who underwent primary unilateral IHR at the outpatient setting between January 2015 and December 2021. We excluded patients who had incarcerated/strangulated hernia repair, concomitant pelvic procedures, metastasis, incomplete claim record, or outlier index expenditure. Outcomes assessed were 2-year operative recurrence, defined as a second IHR intervention in billing records, and 1-year total healthcare expenditure, defined as insurer and patient payments for provided healthcare for any cause. Surgical approaches (R-IHR vs L-IHR vs O-IHR) were compared after 1:1 propensity score matching based on baseline age, sex, area-level income, region, metropolitan residence, insurance plan type, benign prostatic hyperplasia, prostate cancer, Charlson's comorbidity, tobacco history, obese/overweight, and year of surgery.

Results: A total of 73,870 patients undergoing IHR (3,421 [4.6%] R-IHR, 30,858 [41.8%] L-IHR, and 39,591 [53.6%] O-IHR) were included. 2-year operative recurrence was found to be lower in patients that had a R-IHR (1.5% vs 2.6%, HR= 0.58, p= 0.002) and L-IHR (2.2% vs 2.7%, HR= 0.84, p< 0.001) as compared to O-IHR. Patients that underwent R-IHR also had less recurrence compared to L-IHR (1.5% vs 2.3%, HR= 0.67, p= 0.027). Both MIS approaches had higher total index expenditure than open approach (p< 0.001) and R-IHR had on average $615 higher total index expenditure than L-IHR (p= 0.004). However, R-IHR at 1-year post-index expenditure was about $763 lower than L-IHR, albeit not-statistically significant (p= 0.260).

Conclusion: Our results suggest that robotic IHR is associated with less operative recurrence than laparoscopic and open repairs at two years of follow up. Although index expenditure was higher in R-IHR compared to L-IHR, expenses at one year were similar.



Main outcome:
- Operative recurrence (Min. 1 year up to 2years follow up)

Secondary outcomes:
- total health care expenditure
- hospitalization, ER visit, number of OP visits

Figure 1: Study design

Table 1. Demographic characteristics of cohorts after Propensity Score Matching (PSM)

Table 2. Propensity score matched comparison of operative recurrence after inguinal hernia repair and healthcare expenditure by surgical approaches

	2-year Recurrence			Index expenditure			1-year post index expenditure		
	n (%)	HR (95% CI)	p-value	Adj. Mean	AMD (95% CI)	p-value	Adj. Mean	AMD (95% CI)	p-value
R-IHR vs. L-IHR			***0.027***			***0.004***			0.260
L-IHR (n=3421)	77 (2.3)	0.67 (0.47 to 0.96)		$13,221	$615 ($191 to $1,039)		$6,377	-$763 (-$2,092 to $567)	
R-IHR (n=3421)	52 (1.5)			$13,836			$6,615		
R-IHR vs. O-IHR			***0.002***			***<0.001***			0.360
O-IHR (n=3421)	89 (2.5)	0.58 (0.42 to 0.82)		$9,699	$4,137 ($3,725 to $4,541)		$6,111	-$497 (-$1,065 to $57)	
R-IHR (n=3421)	52 (1.5)			$13,836			$6,615		
L-IHR vs. O-IHR			***<0.001***			***<0.001***			0.055
O-IHR (n=30,356)	628 (2.7)	0.84 (0.75 to 0.93)		$9,697	$3,951 ($3,254 to $4,518)		$10,136	-$472 (-$951 to $9.97)	
L-IHR (n=30,356)	601 (2.2)			$13,075			$9,664		

Abbreviations
L-IHR: Laparoscopic inguinal hernia repair; R-IHR: Robotic inguinal hernia repair; O-IHR: Open inguinal hernia repair; HR: Hazard Ratio; CI: Confidence Interval; AMD: Adjusted mean difference

28. Loss Of Domain Inguinoscrotal Hernia Repair With Preoperative Pneumoperitoneum

P Vallance, E Chamely, S Naqvi, D Ferguson, T Clements, J Stulberg
McGovern Medical School at UT Health Houston

Background: Progressive preoperative pneumoperitoneum has been used from as early as the 1950s for large loss-of-domain ventral hernias. This technique minimizes the risk of developing abdominal compartment syndrome after hernia repair in appropriate patients who have herniation of more than 50% of their intro-abdominal volume. Its use in giant inguinal hernias has been less widespread but can have similar benefits.

The video depicts the repair of a large left-sided recurrent inguinal hernia in a 53-year-old male. The patient underwent an elective hernia repair seven years previously at an outside hospital, but it recurred less than six months later. The hernia contained most of his colon and small bowel. Given the size of the hernia, and the volume of intra-abdominal contents that had migrated into the hernia sac, we performed progressive pre-operative pneumoperitoneum therapy to help facilitate the return of his herniated contents into his abdominal cavity. After a laparoscopic peritoneal dialysis catheter placement, the patient insufflated 1L of air into his abdominal cavity every day for one week. This was done as an outpatient, and he then returned for his elective repair. We performed the repair robotically, and the left sided hernia sac was scarred and adherent to his previous mesh, which had to be excised. Given that his colon with plastered to the hernia sac, we could not abandon the sac in the scrotum, and the entire sac was dissected out. The scrotum was plicated from the inside. Once the old mesh was excised, the peritoneal flap created and the entire hernia sac reduced, a large sheet of polypropylene mesh was positioned and secured in place. The peritoneal flap was closed, and a drain placed into the left groin. The peritoneal catheter was also removed. He was discharged home on postoperative day one and seen again in clinic one week later where the drain was removed. He has had no known recurrence of the hernia to date.

29. Robotic Transabdominal Preperitoneal Inguinal And Umbilical Hernia Repair

K Hoener, C Ballecer
Creighton University, Arizona

Background: The concomitant inguinal and umbilical hernia poses a challenge for single stage robotic repair due to the remote nature of the two defects. Laterally docked port sites render the inguinal hernia challenging and a top dock approach is often not feasible due to limitations in the cephalad extent of mesh coverage and subsequent difficulty closing a peritoneal flap in close proximity to port sites. Here we present a case of concomitant inguinal and umbilical hernias with an incidentally found spigelian hernia, and the strategies we employed to provide a durable repair from a side dock approach. First, placement of port sites must strike a balance between being as lateral as possible to aid in eventual closure of the peritoneal flap, but still allow for access to the contralateral myopectineal orifice and space of retzius. Second, the contour of the peritoneal flap is essential to allow for access to the space of retzius without causing undo tension and tearing of the peritoneal flap. This is accomplished by curving the flap laterally towards the caudal trocar site. While this does make closure of the flap difficult, it is key for gaining access to the space of retzius and contralateral myopectineal orifice without creating peritoneal rents that can be near impossible to close. Finally, repairing an inguinal hernia from a lateral perspective poses unique challenges as the perspective is altered from the top dock approach. It is crucial to identify normal anatomical landmarks to safely complete the critical view of the myopectineal orifice. With the aforementioned techniques, we are able to effectively and efficiently repair concomitant umbilical and inguinal hernias. This is a case that was previously not feasible from a laparoscopic approach highlighting the utility of the robot and allowing the patient to avoid a two staged operative plan.

30. De Garengeot Hernia: A Rare Form Of Appendicitis Within Femoral Hernia (Case Report)

F Tchoukoua, D Park, N Andrews, C Bashian
Inspira Medical Center

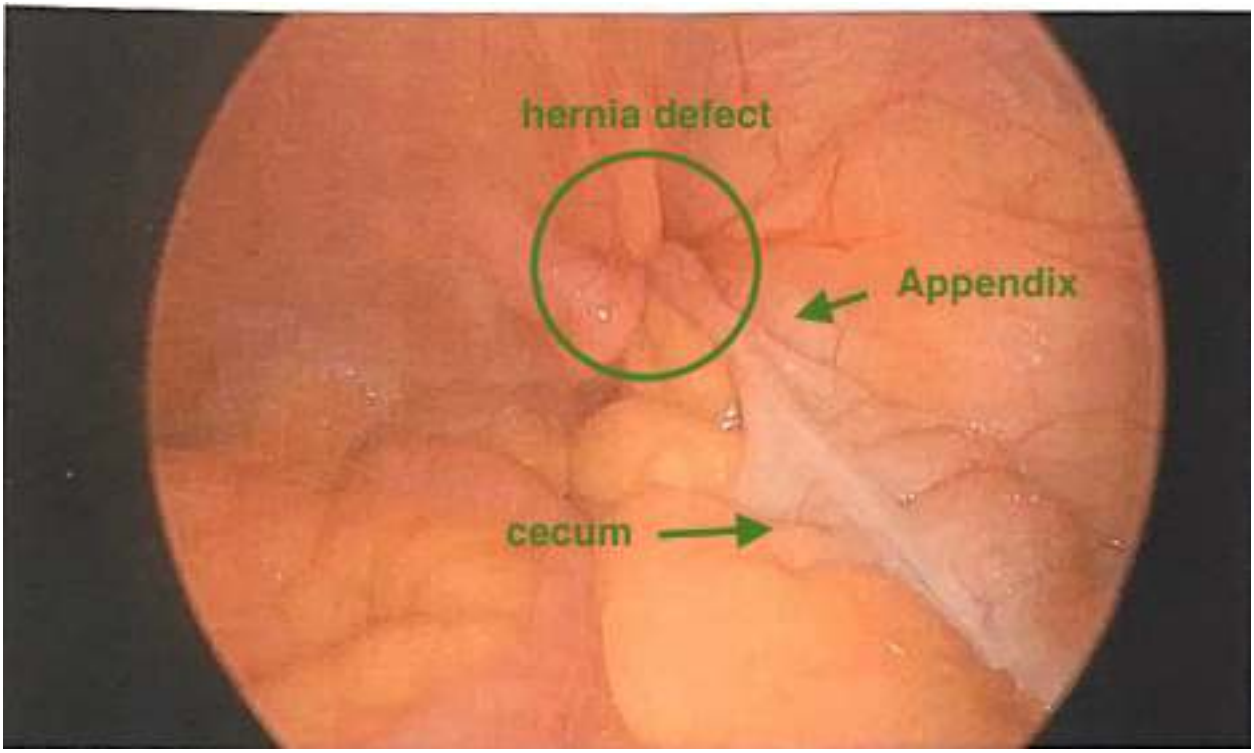
Background: First described in 1731, De Garengeot hernia is a condition with an incidence of 0.5-5% in which the appendix is contained within a femoral hernia. Of even rarer incidence at 0.08–0.13% is the manifestation of acute appendicitis within a femoral hernia sac, which warrants urgent surgical intervention due to increased risks of perforation, abdominal sepsis, and mortality.

Methods: Here we present the case of a 51-year-old female with a history of smoking who presented to the emergency department with 4 days of abdominal pain, nausea, and a lump in the right groin. Vitals and laboratory results were within normal limits. CT abdomen/pelvis revealed a small right femoral hernia containing a dilated, fluid-filled appendix with peri-appendiceal fat stranding suggestive of acute appendicitis. Surgical intervention was two-fold: laparoscopic appendectomy and robotic-assisted laparoscopic femoral hernia repair.

Results: First, a laparoscopic appendectomy revealed a nonperforated ischemic appendix incarcerated within a right femoral hernia. The patient was discharged home on postoperative day 1. She returned two weeks later for an elective robotic-assisted laparoscopic right femoral hernia repair with mesh. The patient tolerated both procedures and has recovered well postoperatively.

Conclusion: De Garengeot hernia is a sporadic condition that compounds two commonly encountered diseases in the field of general surgery: acute appendicitis and hernia. Often diagnosed incidentally, there is no gold standard for operative management. Appropriate operative planning is necessary with any index of suspicion for this pathology to reduce complication risks.


Appendix
Superficial femoral artery
Deep femoral artery


hernia defect
Appendix
cecum

31. Hernia Sac Management In Minimally Invasive Inguinal Hernia Repair: Abandonment Or Reduction? An Updated Systematic Review And Meta-Analysis

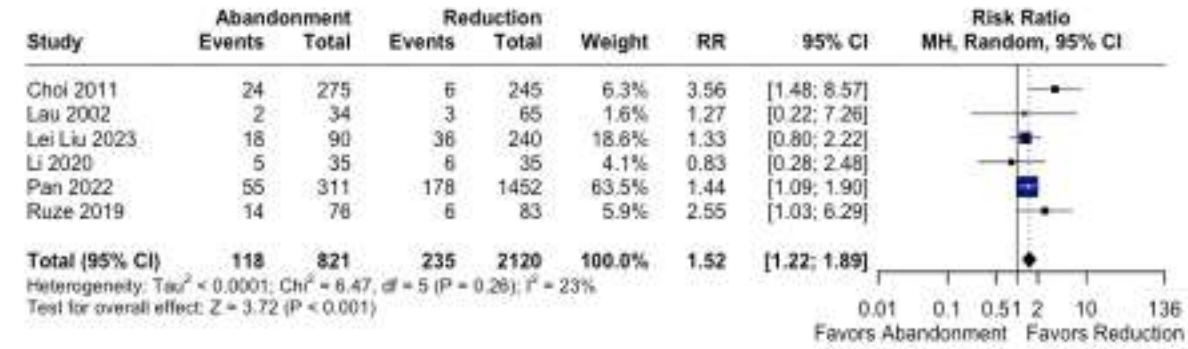
C Silveira, J Kasakewitch, A Rasador, G Lech, D Lima, F Malcher
Montefiore Medical Center

Background: Minimally invasive techniques for repairing inguinal hernias have become increasingly accepted, demonstrating superior outcomes over open procedures in postoperative complications. However, certain postoperative complications, such as seroma formation, remain a dilemma, with many attributing it to the management of the hernia sac, whether it is left in situ or reduced into the peritoneal cavity. We aimed to perform a systematic review and meta-analysis comparing the reduction versus abandonment of the hernia sac during laparoscopic inguinal hernia repair.

Methods: Cochrane Central, Scopus, Scielo, and PubMed were systematically searched for studies comparing the reduction and abandonment of the hernia sac in situ. Our primary outcome was seroma development. Secondary outcomes assessed were overall complications, postoperative pain, surgical site infection (SSI), recurrence, hospital length of stay (LOS), and operative time. We performed a subgroup analysis of transinguinal preperitoneal (TAPP) and totally extraperitoneal (TEP) techniques. Statistical analysis was performed with R Studio.

Results: 2,388 studies were screened and 49 were thoroughly reviewed. Seven studies were included, comprising 3,153 patients, of which 916 (29%) were in the abandonment group. We found higher seroma rates for the abandonment group (14.4% versus 11.1%; RR 1.52; 95% CI 1.22 to 1.89; P< 0.001) (Figure 1). Seroma rates were analyzed within 30 and 90 days postoperatively of follow-up. No differences were found in overall complications (RR 0.88; 95% CI 0.55 to 1.42; P=0.61), postoperative pain (3.22% vs. 2.86%; RR 1.15; 95% CI 0.46 to 2.87; P=0.76), and recurrence (0.59% vs. 0.3%; RR 2.67; 95% CI 0.51 to 14.05; P=0.25) rates (Figure 2). Also, no differences were found in operative time (MD -4.45 minutes; 95% CI -12.77 to 3.86; P=0.29) and LOS (MD -0.06 days; 95% CI -0.14 to 0.02; P=0.14). Subgroup analysis of seroma showed no statistically significant differences between the groups when analyzing TAPP (19.3% vs. 13%; RR 1.65; 95% CI 0.91 to 2.99; P=0.1) and TEP (9% vs. 4.3%; RR 1.69; 95% CI 0.62 to 4.6; P=0.3) procedures.

Conclusion: Our systematic review and meta-analysis support that hernia sac abandonment may be associated with increased early seroma rates following laparoscopic inguinal hernia repair, but limited data is available for technique-specific analyses.


Study
Abandonment Events Total
Reduction Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Choi 2011 24 275 6 245 6.3% 3.56 [1.48; 8.57]
Lau 2002 2 34 3 65 1.6% 1.27 [0.22; 7.26]
Lei Liu 2023 18 90 36 240 18.6% 1.33 [0.80; 2.22]
Li 2020 5 35 6 35 4.1% 0.83 [0.28; 2.48]
Pan 2022 55 311 178 1452 63.5% 1.44 [1.09; 1.90]
Ruze 2019 14 76 6 83 5.9% 2.55 [1.03; 6.29]
Total (95% CI) 118 821 235 2120 100.0% 1.52 [1.22; 1.89]
Heterogeneity: Tau² < 0.0001; Chi² = 6.47, df = 5 (P = 0.26); I² = 23%
Test for overall effect: Z = 3.72 (P < 0.001)
0.01 0.1 0.51 2 10 136
Favors Abandonment
Favors Reduction


Study
Abandonment Events Total
Reduction Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Choi 2011 1 275 0 245 27.0% 2.67 [0.11; 65.32]
Lau 2002 0 34 0 65 0.0%
Lei Liu 2023 2 90 2 240 73.0% 2.67 [0.38; 18.65]
Li 2020 0 35 0 35 0.0%
Ruze 2019 0 76 0 83 0.0%
Total (95% CI) 3 510 2 668 100.0% 2.67 [0.51; 14.05]
Heterogeneity: Tau² = 0; Chi² = 0.00, df = 1 (P = 1.00); I² = 0%
Test for overall effect: Z = 1.16 (P = 0.247)
0.01 0.1 0.51 2 10 136
Abandonment
Reduction

32. Laparoscopic eTEP In Giant Type 2 Inguinoscrotal Hernia- Case Study

V Patil, N Baste
SMBT IMS RC Dhamangaon Nashik

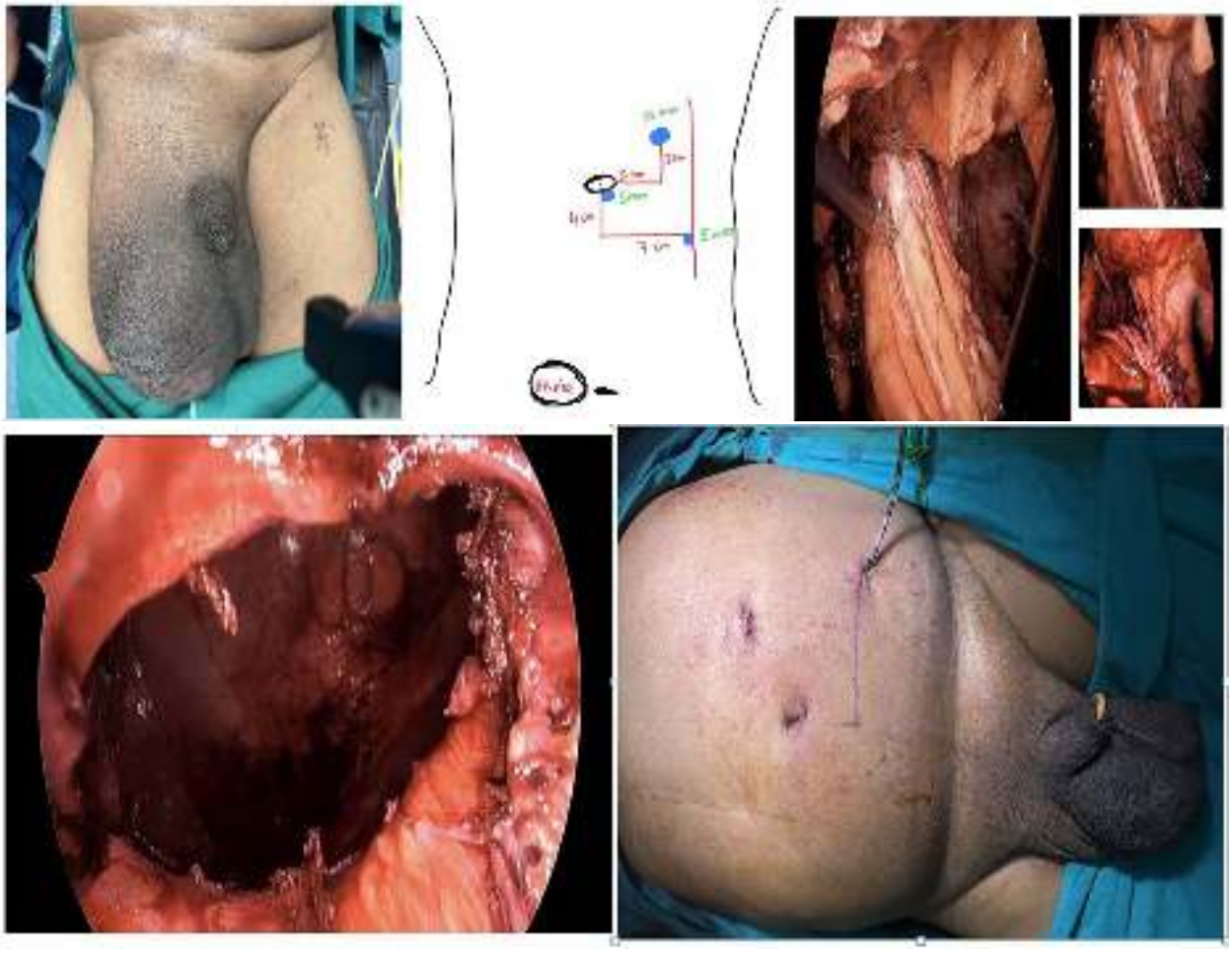
Background: There are three basic problems with these giant type of inguinoscrotal hernias.
1) loss of domain
2) high risk of recurrence
3)residual scrotal skin and scrotal hematoma.
CASE STUDY.
65/male, BMI- 30 with central obesity. Inguinoscrotal swelling since 15 years
Partial reducible swelling without any complications. P/h/o right paramedian laparotomy for ?perforation.

Methods: to manage these type of giant inguinoscrotal hernias with eTEP is really a Challenge! To reduce the contents and sac is a big job to be done in giant inguinal hernias.
in this case three ports were placed one from 3 cm above and 5 cm lateral to umbilicus (10mm) another port inserted from 4cm below and 7 cm lateral to umbilicus(5mm)
one port of 5 mm inserted from below umbilicus. all these ports were placed to oposite side of hernia.

Results: eTEP is the ideal, safe and standard procedure to be done in patients with giant inguinoscrotal hernia with no any post operative complications like recurrence or mesh infection. kindly go through pictures to know the results in large giant hernias.

Conclusion: With increasing evidence suggesting better results in the outcome (recurrence and SSI) with the retro-rectus mesh for inguinal hernias, many surgeons have tried to use this space with minimal access.

The eTEP technique was devised to tackle large groin hernias by Dr. Jorge Daes. The eTEP procedure involves opening of retro-rectus spaces along with the preperitoneal spaces of Retzius and Bogros at the groin level. with this large giant inguinoscrotal hernias can also be managed



33. Robotic Inguinal Hernia Repair After Transverse Rectus Abdominis Muscle (TRAM) Flap Reconstruction

J Benson, R Juza
University of Wisconsin

Background: Surgery for recurrent inguinal hernias or for inguinal hernias in prior operative fields can be challenging. An open anterior approach is typically recommended if a prior posterior approach was used in the treatment of an inguinal hernia, and vice versa, which is the consensus recommendation on international guidelines. There are, however, multiple studies to support the treatment of recurrent inguinal hernias by a posterior approach even after primary posterior surgery.

Methods: The patient is a 67 year-old female with bilateral inguinal hernias of several months duration. She has a past surgical history of a right-sided TRAM flap reconstruction with heavyweight microporous mesh which subsequently became infected and had to be completely excised through multiple open operations. She has no other pertinent medical/surgical history. A CT of the abdomen and pelvis was obtained and showed bilateral inguinal hernias along with the evidence of prior right-sided TRAM flap procedure. The patient was offered a robotic repair of her bilateral inguinal hernias.

Results: We began by creating a right-sided preperitoneal flap and carried this caudad. We started the flap laterally because we knew the medial side approaching the rectus sheath would be heavily scarred down. We dissected down to the pubis in the space of Retzius and lateral in the space of Bogros. There was noted scar tissue from the prior TRAM flap making dissection challenging medially and as we progressed towards the pubis.
It is important to note that despite all of the trauma above the posterior rectus sheath secondary to her prior TRAM flap, the pre-peritoneum and space of Retzius was still largely preserved. We then reduced a large direct sac making sure to protect the structures and nerves as we delineated the remainder of the inguinal anatomy. We then continued dissection posterior to the pubis in the space of Retzius. For a supportive measure we had a catheter in the bladder with a plan to backfill to distend the urinary bladder if needed to delineate between the bladder and the space of Retzius. Once the myopectineal orifice was cleared we brought our mesh into the appropriate space and positioned it over the defect. This was secured to Coopers ligament as well as to the fascial edges around the hernia defect. We completed the repair with closure of the pre-peritoneal flap.

Conclusion: The pre-peritoneal layer is robust which provides the ability to perform a safe and effective posterior dissection even in the presence of prior surgeries such as, primary posterior inguinal hernia repairs, TRAM flaps, and prostatectomies. In addition, when performing redo posterior inguinal hernia repairs the robotic approach offers enhanced visibility and improved dexterity, which may offer additional benefit in these more demanding cases.

34. Robotic Total Extraperitoneal Sublay Anterior Repair For Midline Incisional Hernia

M Turturro, Y Novitsky
Columbia University

Background: Retrorectus incisional hernia repair via eTEP access is an effective method for patients with midline incisional hernias wanting to undergo minimally invasive repair. However, patient height can be a limiting factor. In shorter patients, robotic access may not be possible from a lateral approach as it can result in collisions and an inability to reach the most caudal and cephalad aspects of the hernia. We present a case of a 47 year old female undergoing a Total Extraperitoneal Sublay Anterior Repair (TESAR).

Methods: This is a case of a 47 year old woman who presented with an M3, M4 hernia from the result of an exploratory laparotomy and small bowel resection for desmoid tumor. Patient wanted a minimally invasive approach and required a sublay repair given the defect size (12 x 6cm). Height measured at 149 cm (4 ft 9 in). A robotic TESAR was the procedure of choice. Similar to a SCOLA approach, robotic ports were placed in the subcutaneous space in the lower abdomen and a subcutaneous pocket was created cephalad to the hernia defect. The hernia was reduced and a retrorectus repair was performed from this approach. The medial anterior fascia was incised and continued into the retrorectus space. The retrorectus space was dissected medially to the perforators. This was done on the contralateral side as well. Visualization of the inferior most aspect was challenging. Additional ports were placed superiorly in the subcutaneous pocket and the inferior dissection was completed laparoscopically. The posterior sheath was closed robotically with an absorbable vlock. Midweight polypropylene mesh was sized to fit the retrorectus space and secured with Tissel. Anterior sheath was closed robotically with permanent Vlock and the umbilicus was attached to the fascia in the midline

Results: Patient was admitted to the hospital for pain control. She was discharged two days later with a subcutaneous drain which was removed two weeks post op.

Conclusion: TESAR is a viable option for patients who wish to undergo MIS sublay repair when eTEP access may not be an option in a shorter patient.

35. Robotic Sugarbaker For Ileal Conduit Parastomal Hernia - Complication And Management

K Woo, D Remulla, N Messer, C Petro
Cleveland Clinic Foundation

Background: Parastomal hernias adjacent to an ideal conduit can create challenging scenarios for surgeons during repair.

Methods: A 69-year-old male presents 2 years after a robotic cystectomy and ileal conduit creation with a small ventral and parastomal hernia with partial obstructive symptoms.

Results: Intraoperatively, a short ileal conduit with ureteral anastomoses within the hernia defect created a challenging scenario. We performed a robotic Sugarbaker with intraperitoneal mesh, lateralizing both ureters over the edge of the mesh repair. This resulted in ureteral obstruction requiring laparoscopic revision with intraoperative loopogram on post-operative day 12. The patient has a durable repair and unchanged kidney function at 1 year.

Conclusion: Utilization of intraoperative loopogram should be considered in parastomal hernias adjacent to ileal conduits, particularly in challenging cases.

36. Robotic eTEP TAR For M1, L1, L2 Incisional Hernia Following Liver Transplantation

A Kinahan, C Ballecer
Creighton University, Arizona

Background: The following is a video presentation detailing the preoperative assessment, operative management, and postoperative outcome of a patient who presented with a large incisional hernia following liver transplantation. Given the size and location of his hernia complex, unilateral TAR was required to obtain sufficient mesh overlap. Our presentation highlights the unique anatomical considerations and stepwise operative approach to a robotic assisted totally extraperitoneal approach for unilateral transversus abdominus release.

Methods: We performed a robotic unilateral eTEP TAR for a large incisional hernia following liver transplantation. Macroporous medium weight mesh was deployed for reinforcement of the visceral sac.

Results: Patient returned for follow-up. At 6 weeks, he had no evidence of recurrence, and was fully competent with his activities of daily living. Further, he had enrolled in an exercise program focused on core strengthening.

Conclusion: Minimally invasive robotic assisted laparoscopic totally extraperitoneal ventral hernia repair with transversus abdominus release is an advanced approach to incisional hernia repair with minimal in-hospital length of stay, postoperative pain, and durable repair.

37. Hybrid Laparoscopic And Open Perineal And Parastomal Hernioplasty Procedure

R Rodriguez, M Bolaños, S Magaña Monterroza
Hernia Especialistas

Background: Perineal and paraostomal hernias represent challenging complications in patients with a history of pelvic surgery, particularly those who have undergone abdominoperineal resection or ostomy formation. With the presentation of the following case we share our experience in the management of a hybrid technique (laparoscopic and open) for the management of perineal hernia and laparoscopic technique for the management of paraostomal hernia.

Methods: Perineal hernias occur through defects in the pelvic floor musculature, often resulting from weakened support structures due to previous surgeries or radiation therapy. Common symptoms include perineal discomfort, bulging, and difficulties with defecation. Paraostomal hernias, on the other hand, develop adjacent to stomas created during colorectal surgery, and are characterized by protrusion of abdominal contents through defects in the abdominal wall. Patients may experience pain, cosmetic concerns, and functional impairments related to pouching and stoma care. The present case is a 51-year-old female patient who underwent a laparoscopic abdominoperineal resection in 2017 and subsequently developed perineal and paraostomal hernia. Her main symptoms were pain and cosmetic disconfort of the perineal area.

Diagnosis of perineal and paraostomal hernias relies on clinical examination supplemented by imaging modalities such as computed tomography or magnetic resonance imaging. Treatment options vary depending on the severity of symptoms and patient comorbidities. However, surgical intervention remains the mainstay of treatment for symptomatic hernias.

Results: Surgical repair of perineal hernias often involves techniques aimed at reinforcing the pelvic floor, such as autologous tissue or mesh repair, with or without concomitant stoma revision. Paraostomal hernia repair presents unique challenges due to the proximity to the stoma and the risk of stoma-related complications. Various surgical approaches have been described, including primary repair, relocation of the stoma, and mesh reinforcement. The choice of technique should be tailored to individual patient factors and surgical expertise. In the present case, the correction of the perineal hernia was performed in a hybrid manner, the content of the hernia was reduced laparoscopically, then a double-layer mesh was placed and fixation was performed with separate points in the uterus, rounds ligaments, lateral muscles and sacrum, with care not to injure the ureters. Then the paraostomal hernia correction was performed with a double-layer mesh with the Sugar Baker technique, finally the patient was placed in a prone position and the perineal area was reconstructed by fixing the uterus to the coccyx and placing a polypropylene intermuscular mesh.

Despite advancements in surgical techniques, perineal and paraostomal hernias remain associated with significant morbidity and recurrence rates. Postoperative complications, including wound infection, mesh-related complications, and recurrence, necessitate careful perioperative management and long-term follow-up.

Conclusion: In conclusion, perineal and paraostomal hernias represent complex surgical challenges requiring a tailored approach to diagnosis and management. The use of the patient's own organs, in this case the uterus, to optimize the results of perineal hernia

management can be an option in these extremely difficult cases but Further research is warranted to elucidate optimal surgical techniques and to improve long-term outcomes in this patient population.

38. Robotic Sugarbaker Repair Of A Multiply Recurrent Paraurostomy Hernia

D Morrell, D Podolsky, Y Novitsky, P George
Columbia University

Background: Parastomal hernias are a challenging clinical entity with high rates of hernia recurrence.

Methods: A 36-year-old male with history of Down syndrome and neurogenic bladder status post ileovesicostomy presented with a multiply recurrent paraurostomy hernia. He had three prior hernia repairs with permanent synthetic mesh implanted in the onlay and retromuscular sublay positions.

Results: The patient successfully underwent a robotic Sugarbaker repair with composite macroporous PTFE with bioasorbable coating.

Conclusion: Management of parastomal hernias requires ability to perform multiple different types of repairs particularly in patients with recurrent hernias with prior repairs violating the planes of the abdominal wall.

39. Open Repair Of Complex Incarcerated Ventral Incisional Hernia With Loss Of Domain Using Duramesh Suture

S Naqvi, D Ferguson, E Chamely, J Stulberg
McGovern Medical School at UT Health Houston

Background: Large ventral hernias in the setting of obesity are clinically challenging. The decision to proceed with hernia repair is surgeon- and patient-dependent. Once the surgeon decides to perform herniorrhaphy, intraoperative decisions may mitigate or exacerbate the patient's risk for postoperative complications. Avoiding a transversus abdominis release (TAR) in obese patients is preferable, as TAR confers an increased risk of short-term postoperative complications and obese patients have a high risk of hernia recurrence. Mesh suture may allow the surgeon to close the anterior rectus sheath under more tension than would be possible with traditional suture. Additionally, concurrent panniculectomy is often necessary in obese patients to reduce the risk of wound complications.

We present the case of a 65 year old woman with a recurrent ventral incisional hernia with loss of domain. Due to her debilitating symptoms, we agreed to perform a hernia repair at a body mass index of 38. We took the patient to the operating room for exploratory laparotomy, lysis of adhesions, repair of recurrent ventral incisional hernia with retro-rectus mesh, and panniculectomy. Preoperatively we marked the extent of our panniculectomy. We perform a lysis of adhesions then dissect the posterior sheath off the rectus. We identify the nerves as they perforate the posterior rectus fascia, which defines the lateral extent of our dissection. The posterior sheath and peritoneum are closed with a running 2-0 PDS suture, placing Seprafilm™ prior to completing the closure. The mesh is fixated to Cooper's ligament bilaterally. The mesh is then secured on either side of the xiphoid, ensuring at least 5 centimeters of overlap past the xiphoid. Once the sutures are tied down, the mesh is shown secured from xiphoid to pubis. The anterior sheath is closed using a #1 Duramesh™ suture. Using mesh suture allowed us to close the anterior sheath under some tension with reduced risk of suture pull-through. This allowed us to avoid performed a transversus abdominis release in this high-risk patient. The panniculectomy is performed and the incision is closed and covered with an incisional wound vac. The patient was discharged on postoperative day 7. She has since followed up and is doing extremely well.

40. Transabdominal Pre-Peritoneal Repair Of Arcuate Line Hernia

J Pan, T Zohourian, D Halpern, D Halpern
New York University Long Island School of Medicine

Background: In this video, we demonstrate a robotic transabdominal pre-peritoneal (TAPP) repair of an arcuate line hernia in a 76-year-old female without history of previous abdominal surgery who presented with a symptomatic, reducible M3 periumbilical hernia. Upon entering the abdomen for elective repair of the periumbilical hernia, the patient was incidentally found to have an arcuate line hernia, which was identified on retrospective review of preoperative CT imaging. After reducing the umbilical hernia contents, a flap was made in the TAPP plane and the umbilical hernia was closed primarily. The arcuate line hernia was then delineated in this plane, and the defect was closed by plicating the posterior sheath to the posterior rectus abdominus muscle, as the transversalis fascia was too attenuated to hold sutures for a primary repair. A medium weight polypropylene mesh was secured in the preperitoneal plane, and the flap was closed with a running Connell suture. The patient was discharged home on the day of surgery and recovered uneventfully. At her postoperative visit, her abdominal pain had resolved.

41. Intermediate Outcomes Of Mesh-Suture Repair In The Treatment Of Ventral Hernias

M Quattrone, E Moyer, S Zolin, E Sodomin, V Alli, E Pauli
Penn State Health Milton S. Hershey Medical Center

Background: Mesh-suture (Duramesh, Mesh Suture Inc, Chicago, IL) is an FDA-approved suture material composed of lightweight macroporous polypropylene mesh, which allows for better distribution of tensile forces and reduced fascial tearing compared to traditional suture. A few studies have shown promising short-term outcomes for its use in defect closure for ventral herniorrhaphy; however, ongoing study with long-term follow-up is needed. This study describes our intermediate outcomes with mesh-suture based herniorrhaphy.

Methods: This study is an IRB-approved, prospectively collected, retrospective review of surgeon case logs examining mesh-suture use at our institution. All patients who had undergone hernia repair utilizing mesh-suture from May 1, 2023-October 31, 2024 were included to allow for evaluation of intermediate post-operative outcomes. Mesh suture use was based on surgeon discretion. Common indications for use included: parastomal hernias that were only candidates for primary repair, primary umbilical/epigastric hernias with small to mid-sized defects, and patients with large ventral hernias undergoing a concomitate operation that precluded mesh use. Patient charts were reviewed for patient/hernia characteristics, operative outcomes, and follow-up duration. Time to follow-up was recorded from the operative date to the last clinical surgical appointment, abdominal cross-sectional imaging, or phone follow-up, whichever was latest. A descriptive analysis regarding patient and hernia characteristics was performed and outcomes between hernia groups were analyzed using a chi-squared analysis.

Results: Thirty-five patients (Mean age 63, Mean BMI 33.0 kg/m2, 60% female) who had undergone mesh-suture repair at our institution were included in this study, with an average postoperative follow-up of 158 days. Hernia types included: 25.7% primary umbilical, 22.9% incisional, 40.0% parastomal, 8.5% epigastric, and 2.9% other. Of these, 3 (8.5%) were recurrent hernia repairs and 43% were associated with a concomitant procedure. The median defect size was 4.5 cm2, ranging from 0.25 to 375 cm2. Six patients (17.1%) were readmitted in the 90-day postoperative period. There were five surgical site occurrences (14.3%), including one superficial surgical site infection and three that required procedural intervention. No patients developed a suture abscess or required reoperation for suture removal. Four patients (11.4%) developed a recurrent hernia at greater than 30 days post-operatively, with an average time to recurrence of 109 days. 75% of these were related to parastomal repairs. There were no recurrences less than 30 days. One patient required reoperation for recurrence, two were managed conservatively and one was noted incidentally at the time of reoperation unrelated to their hernia repair. There was no statistically significant difference in complication rates for SSO (p=0.12), SSI (p=0.19), SSO/IPI (p=0.4) or recurrence (p=0.09) between hernia groups.

Conclusion: Our experience with mesh-suture herniorrhaphy has demonstrated comparable complication and recurrence rates to prior studies in addition to traditional ventral hernia repair techniques. We further provide support for mesh-suture use in the management of ventral hernias, particularly when a planar mesh-based repair might traditionally be avoided. Ongoing prospective study with long-term follow-up and standardization of surgeon technique and surgical indication is needed.

42. Giant Ventral Hernia With Ischemia-Induced Colonic Atony

J Benson, M Burstein, J Hue
University Hospitals Cleveland Medical Center

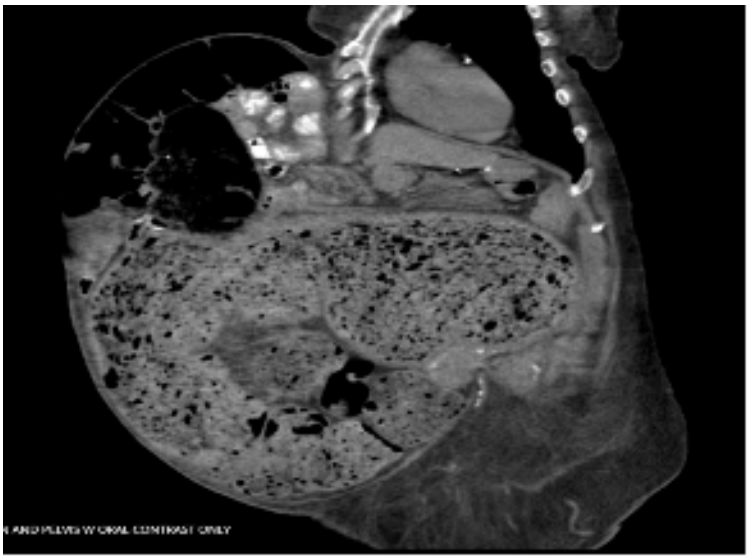
Background: Giant ventral hernias, generally classified as >10cm, constitute a major challenge for surgeons due to the variety of patient presentations and numerous proposed preoperative interventions and operative techniques aimed at the primary goal of obtaining fascial closure without tension. Here we present a case of a giant ventral hernia with ischemia-induced colonic atony and the associated management.

Methods: The patient was a 75 year-old female with a BMI of 33 and a past medical history of chronic kidney disease, chronic constipation, open gastric bypass 25 years prior with a 20+ year history of abdominal hernia. The patient's chronic constipation became progressively worse over the prior year, on Linzess and Miralax at presentation to the surgeon with infrequent stooling. Physical exam had an upper midline vertical scar and a large balloon-like tympanic hernia, which she could rest her chin on. Preoperative CT showed a giant ventral hernia containing small and large bowel, with diffuse dilation of colon and a heavy stool burden. Anorectal manometry was not conclusive for any distal dysfunction. The patient was offered open repair and partial colectomy following preoperative administration of ultrasound-guided Botox (300 units) in multiple abdominal muscles. She did not want diversion.

Results: A supra-umbilical 35 cm midline incision was created. The hernia sac was opened revealing a heavily dilated transverse and descending colon along with the upper rectum. The entire colon was mobilized and the intended area of resection was completed with three stapler loads. The rectum was circumferentially dissected down the mid-rectum making sure to preserve the left ureter. The mid-rectum was then transected. The removed specimen was 176cm long and 18-30cm wide diffusely. The colorectal anastomosis was made and a colonoscopy performed which revealed a negative leak test. The remaining hernia sac adhesions were removed and the sac was excised in entirety. A left pelvic drain was placed below the peritoneal reflection at the anastomosis and another round drain was left subcutaneous. The fascia was then closed without tension using two dozen 1 PDS sutures. The skin was closed with staples. Pathology later confirmed chronic ischemia type injury to the resected portions of the colon.

The patient's postoperative course was complicated by acute on chronic kidney failure requiring renal replacement therapy but was ultimately discharged to a skilled nursing facility on postoperative day 10. She has returned to clinic multiple times since then with no further GI issues, without a hernia, and merely with a large area of loose pannus skin which does not bother her.

Conclusion: The potential for diverse clinical presentations associated with giant ventral hernias often warrants a multifaceted approach to treatment. In this instance the diagnosis of ischemia-induced colonic atony secondary to her chronically incarcerated hernia permitted the partial colectomy, and the decision for preoperative Botox assisted with tension-free primary closure of the patient's fascia.



43. Robotic Flank Hernia Repair: A Single-Institution Case Series

N English, M Mustian, G Naik, P Dutta, B Corey, A Parmar
University of Alabama at Birmingham

Background: While flank hernias represent only a small percentage of abdominal wall defects, symptoms can be debilitating for the affected patients, and it portends substantial operative challenges for the surgeon. Given the dearth of literature reporting operative outcomes particularly for the minimally invasive approach, the objective of this study was to describe our experience of patients undergoing robotic repair of flank hernias at a tertiary care medical center.

Methods: This study was a retrospective review of patients who underwent elective operative repair of flank hernias from June 2019 to March 2024. All adults (≥ 18 years old) diagnosed with an incisional or traumatic flank hernia were included. We abstracted basic demographics, preoperative clinical variables (smoking status, BMI, ASA score, co-morbidities, presence of pain, hernia type, history of prior hernia repair, type of prior flank operation, and dimensions of the hernia on CT scan), operative variables (perioperative regional pain blocks, operative approach, type and dimensions of mesh used), and postoperative outcomes (hospital length of stay (LOS), follow-up duration, hernia recurrences, and complications including wound occurrences and chronic pain defined as pain > 3 months postop). Univariate analyses were used to measure and describe all covariates and outcomes.

Results: We identified 36 patients who underwent elective robotic flank hernia repairs during the study period. Patients averaged 57.9 (± 13.6) years of age, and the majority (66.7%) were female, Caucasian (77.8%), and Medicare enrollees (47.2%). The majority (94.4%) were non-smokers, ASA III (61.1%) and overweight (BMI 32.0 ± 4.9), while 9 (25%) were diabetic but all well-controlled (HbA1c 6.0 ± 0.9). Seventy-five percent of patients presented with chronic preoperative pain. The majority (50.0%) of patients had incisional hernias, while 47.2% were traumatic. Twelve (33.3%) patients had prior hernia repairs. Hernias averaged 8.1 (± 4.7) cm in length and 6.3 (± 2.7) cm in width as measured on coronal CT scan. While all cases were performed using the robotic platform, 6 (17.1%) were hybrid procedures and necessitated an open incision to repair the defect. The use of mesh was nearly universal and averaged 21.1 (± 6.3) cm in length and 20.8 (± 5.2) cm in width. Eighty-nine percent of patients underwent sublay repairs, the majority of which were through the transabdominal preperitoneal approach. As most procedures were bedded outpatient cases, the mean LOS was 2.0 (± 2.3) days, ranging from 0 to 9 days. The mean follow-up was 113 days (range 6-1445 days) and 5.6% developed a hernia recurrence. Fourteen patients experienced postoperative complications including chronic pain (27.8%), seromas (13.9%), and hematomas (8.3%).

Conclusion: We found that for our patients with flank hernias, many experienced pain prior to repair regardless of the etiology of their hernia. Large, complex defects were successfully addressed using minimally invasive techniques with mesh placement. However, while few patients experienced hernia recurrences, chronic postoperative pain was not infrequent. These factors should be emphasized during preoperative patient counseling.

44. Double Dock Robotic Preperitoneal Hernia Repair For A M1-M3-W3 Incisional Hernia. Saving Transversus And Retrorectus Space

H Valenzuela
Hospital Angeles Del Carmen

Background: Patient operated for colorectal cancer presents with M1-M3, W3 incisional hernia, traditionally a defect like this would call for component separation but in this case prehabilitation with tba allowed for a fully preperitoneal repar a la heniford.

Methods: Patient was prehabilitated with 250 units of dysport per side and a double dock fully preperitoneal ventral hernia repair was performed 6 weeks after.

Results: Patient was discharged following morning and had an uneventful recovery over one year follor up patient is without reoccurrance.

Conclusion: Component separation is great when its called for but maybe sometimes prehabilitation and a fine dissection enhanced by the robot may save the need for burning bridges at the retrorectus space and the myofascial sacrifice that component separation entails.

45. Multiply Recurrent Left Diaphragmatic Hernia Repair

D Jimenez, K Woo, D Remulla, C Petro
Cleveland Clinic Foundation

Background: Multiply recurrent diaphragmatic hernias can create challenging scenarios for repair.

Methods: A 59-year-old male presents with a multiply-recurrent left sided diaphragmatic hernia with an acute small bowel obstruction after previous intraperitoneal and thoracic approaches. He had a previous abdominal wall reconstruction with transversus abdominis release 2 years prior, and his obstructive symptoms failed non-operative management.

Results: An open trans-abdominal approach was utilized through a left subcostal incision. Given the paucity of residual left diaphragm, a bridged repair was buttressed with a large hybrid (synthetic/biosynthetic) mesh. The patient's ileus resolved on POD#4 and he was discharged on POD#7 without complication.

Conclusion: An open transabdominal approach with a large piece of intraperitoneal mesh is versatile and effective in multiply recurrent diaphragmatic hernia cases.

46. Robotic TAPP For Left L1-L4 Intercostal Hernia

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Stony Brook University

Background: The occurrence of flank/intercostal hernias following traumatic injury, particularly after interventions like rib plating, presents unique surgical challenges due to the complexity of the affected anatomy. This video submission focuses on the technique employed for a robotic-assisted repair of a post-traumatic left flank/intercostal hernia, highlighting a minimally invasive approach.

Methods: We document a case of a patient suffering from a progressively worsening hernia subsequent to rib plating for a traumatic injury. Using a robotic technique, we developed a pre-peritoneal space which included dissection of the inferolateral diaphragmatic peritoneum in order to place a large heavy-weight polypropylene mesh with sufficient superior mesh overlap. Key steps included the identification and exposure of the hernia sac, ensuring adequate closure of the hernial defects, and securing the mesh without compromising surrounding structures.

Results: The patient reported alleviation of symptoms and a swift recovery, with no recurrence at follow-up, underscoring the success of the employed approach.

47. Robotic Unilateral TAR For A Large Intercostal Lumbar Hernia

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Background: Here we present a robotic transversus abdominis release (TAR) for an intercostal lumbar hernia. Robotic TAR is a useful, effective approach for repair of uncommon, technically demanding hernias. Special considerations of this case are the anatomy and relationship of the diaphragm and abdominal muscles as well as the three approaches to perform a TAR that we have at our disposal: the bottom-up, Novitsky, and top-down methods.

Methods: The patient is a male in his 70s and developed this hernia after a violent coughing fit. Over the last 4 years, it was growing in size and although he had no obstructive symptoms, the hernia and associated discomfort kept him from bending, lifting, and going to the gym. Preoperative CT scan showed a large intercostal hernia in between ribs 9 and 10 with herniated liver. Due to the location and nature of the defect, we decided on a robotic TAR approach.

Results: The patient was positioned in lazy left lateral decubitus and three ports were placed along the left rectus. We made an incision of the posterior sheath and constructed the epigastric crossover flap to allow us cephalad overlap within the midline. The sternal diaphragm is intimately associated with the transversus abdominis in the upper third of the abdomen and this recognition of anatomy is important to achieve safe and effective dissection. We performed the suprapubic dissection and then the retrorectus dissection to the external internal transversus (EIT) junction.

Bottoms up dissection for TAR was then performed. As you proceed up the abdomen the peritoneum gets thinner so you can either be true preperitoneal, in between the anterior and posterior leaflets of transversalis, or true pre-transversalis.

In the Novitsky way, we transected the posterior lamella and transversus abdominis down to expose the transversalis fascia. Pretransversalis dissection was then carried out until we got to fat laterally and to the sentinel fat superiolaterally which is the landmark of the costal diaphragm. Now with the inferior, superior, and medial borders of the hernia dissected, we had our volcano sign.

It is during the top-down TAR that the recognition of the sternal diaphragm anatomy is crucial such that this can quickly be communicated with the novitsky dissection. Additionally, it is critical to avoid the creation of an iatrogenic Morgagni hernia in this area.

We used a barbed suture to begin rebuilding the TA at the medial defect and then redocked using 4 ports along the right rectus. We completed closing the defect and thus the relationship of the TA with the QL and with the diaphragm was reestablished. We used a 26x28 heavy weight mesh secured by tacks. Barbed suture was used to close the posterior sheath. The postop course was uneventful and the pt was discharged on POD2.

Conclusion: Abnormally located defects such as an intercostal or lumbar hernia can be approached with robotic TAR as long as one possesses a thorough knowledge of the fundamentals of robotic hernias well as abdominal wall anatomy.

48. Non-Traumatic Large Transdiaphragmatic Intercostal And Flank Hernia With Gastric Outlet Obstruction: A Case Report

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Background: Non-traumatic transdiaphragmatic intercostal and abdominal wall hernias are rare. Case reports describe patients with risk factors such as chronic obstructive pulmonary disease, obesity, and diabetes who cough which increases their thoracoabdominal pressure leading to these complicated hernias. Due to the rarity of transdiaphragmatic intercostal and abdominal wall hernias, the surgical management widely varies.

Methods: This is a case report of a patient that underwent open surgical repair of a large transdiaphragmatic intercostal and flank hernia. Video footage was taken during the procedure. This footage was edited to form a succinct presentation of the surgical management with accompanying narrative description.

Results: The case is a 78 year old male with obesity, COPD, and hypertension who had an episode of pneumonia with coughing fits causing left-sided 7-8 rib fractures with a large intercostal and flank hernia containing colon. He was seen in clinic by a hernia surgeon and was undergoing outpatient work-up including pulmonary function tests when he had an episode of feeling a "pop" sensation. He subsequently developed acute abdominal pain, nausea, and vomiting. He presented to the emergency department and was found to have transdiaphragmatic gastric herniation causing outlet obstruction in addition his intercostal and flank hernias. He was admitted with nasogastric tube decompression and offered left intercostal, flank, and diaphragm hernia repair together with thoracic surgery.

Regarding his hernia repair, a left thoracoabdominal incision was performed directly over the hernia defect between the separated ribs. The diaphragmatic hernia measured 15x12 cm and the flank hernia measured 15x15 cm. The stomach and colon were reduced from the chest and abdominal wall. Initially, a mobile rib fracture was noted laterally which was plated with a titanium plate. The abdominal wall hernia was addressed with transversus abdominis release for retromuscular mesh placement. The diaphragm and intercostal hernia were closed with Dualmesh. Due to wide separation of the ribs, resorbable rib plates were used to reapproximate the chest wall to close the intercostal defect. The lateral obliques and chest wall were then closed in a multi-layer fashion. Patient was extubated the next day and his diet was progressively advanced with discharge home a week later.

Conclusion: Large non-traumatic transdiaphgramatic intercostal and abdominal hernias are rare and can present with bowel obstruction or gastric outlet obstruction as seen in this patient. This case presentation described open surgical management of a complex, large transdiaphgramatic intercostal and flank hernia.

49. RoboTAR For Recurrent Ventral Midline Incisional Hernia, Congenital Morgagni Hernia, And Right Spigelian Hernia

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Background: A Morgagni hernia is a rare congenital diaphragmatic hernia (incidence of 2 to 5%) located posterolateral to the sternum created due to a non-fusion of the costal and sternal diaphragm. While usually present and asymptomatic at birth, its size often increases with age secondary to intra-abdominal pressure. This poses significant risk for bowel obstruction and incarceration. Whether found incidentally on imaging or from symptoms on exam, standard of care is for surgical repair. Its rarity and close proximity to the pericardium, liver, and other intra-abdominal organs often times pose difficulty. The purpose of this video is to demonstrate a robotic assisted minimally invasive approach to a Morgagni hernia and recurrent ventral incisional hernia along with an incidentally found right sided Spigelian hernia.

50. Robotic Transabdominal Preperitoneal Lumbar Incisional Hernia Repair

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Background: Recurrence of lumbar hernia repair is not uncommon due to the inability to achieve sufficient posterior mesh overlap with an intraperitoneal underlay technique. Here we present the case of a lumbar incisional hernia that developed following spinal fusion surgery and will discuss the anatomic landmarks that identify sufficient dissection to accommodate a large and posteriorly oriented mesh that prevents recurrence. First, for lumbar hernias, the peritoneal flap is developed in an area overlying the transversus abdominus so that in the case of a thin peritoneum, both the anterior and posterior leaflet of transversalis fascia can be recruited. Next, dissection is carried posterolaterally until the lateral boarder of the psoas is reached. The first muscle in this dissection that is encountered is the quadratus lumborum. It is important to leave the investing fascia intact to protect underlying nerves. A Ray-Tec is often utilized to increase the surface area of medial retraction of the underlying abdominal viscera and to minimize risk of thermal spread through the peritoneum to the adjacent colon. In the space of Bogros, dissection is similarly carried out in the true preperitoneal plane when able to maintain a protective layer of fascia on the abdominal wall to avoid nerve injury and direct nerve contact with mesh. Caudal to the lumbar hernia defect, dissection is complete when the lateral boarder of psoas is identified in conjunction with the iliopsoas, the superiorly oriented transversus abominius and the quadratus lumborum. In this case the iliohypogastric nerve is seen transversing this area. Our patient was noted to have a defect in both the transversus abdominus and internal oblique with an intact overlying external oblique. The transversus abdominus and internal oblique were reconstituted to their normal anatomic position. For all lumbar or flank hernias we utilize a heavy weight polypropylene mesh. By completing adequate posterior dissection indicated by mesh placement to the level of the psoas, we believe that a robotic transabdominal preperitoneal approach to lumbar hernia repair offers a more durable repair compared to the transabdominal underlay approach in which sufficient posterior overlap is challenging to achieve.

51. National Trends In Patient Demographics And Readmission After Elective Open Ventral Hernia Repair

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Background: Since in the late 1970s, numerous national studies have demonstrated that complex surgical procedures have improved outcomes when performed in high volume, tertiary hospitals. This led to a call for regionalization of care. The concept of tertiary hernia centers, which began twenty years ago in the US, has yet to have defined parameters by available expertise, outcomes or surgical volume. The purpose of this study was to evaluate demographic and surgical outcomes in OVHR by high (HVC), medium (MVC), and Low volume centers (LVC).

Methods: The Nationwide Readmissions Database (NRD) was queried between 2016-2018 for patients undergoing elective OVHR. Captured data included demographic data, intraoperative details, like the use of component separation (CST), and postoperative outcomes such as readmission rate, timing and diagnosis. HVC represented the top 5% (≥56 cases/year) of hospitals by case volume, followed by MVC (6-25%, 18-55 cases/year), and LVC (< 75%, < 18 cases/year). HVC were further evaluated by the top 1%(≥120 cases/year) vs 2-5%(56-119 cases/year). Standard statistical methods were used.

Results: In total, 69,792 patients were identified with HVCs(n=21,744), MVC(n=27,789), and LVC(n=20,259). HVC patients were slightly younger (58.4±13.1 vs 59.7±13.2 vs 59.3±14.1 years old, P=< 0.001), less likely to be female (57.5%vs60.1%vs61.6%; P< 0.001), had fewer smokers (9.5%vs11.0%vs14.3%, P< 0.001), similar rates of obesity (31.2%vs30.7%vs30.2%, P=0.086), and diabetes (22.4%vs22.6%vs22.9%, P=0.393). HVC Patients were less likely to have surgery in their state of residence (88.4%vs94.8%vs96.7%, P< 0.001), more likely to have private insurance (41.1%vs38.3%vs34.5%, P< 0.001), and have a higher mean income quartile (2.5±1.1 vs 2.4 ±1.1 vs 2.3±1.1; P< 0.001). HVC performed significantly more CST (13.5%vs8.7%vs6.2%, P< 0.001) and had a longer length-of-stay (LOS) (5.3±5.7 vs 4.9±5.6 vs 4.6±4.6 days, P< 0.001). Readmission at 180-days (16.8%vs16.5%vs17.4%, P=0.622, and average time to readmission (41.9±46.9 vs 41.6±45.5 vs 42.4±46.9 days, P=0.931) were similar between groups. The rate of the top five readmission diagnoses and procedures were significantly different between groups (See Table 1).

When evaluating the top 1% versus the top 2-5%, patients at the top 1% were significantly less likely to be residents of the state of the hospital (83.1%vs91.1%, P< 0.001) and more likely to have private insurance (41.7%vs40.8%, P=0.001). The top 1%, had fewer CST (11.1%vs14.7%, P=< 0.001) and longer LOS (5.7±6.1 vs 5.0±5.4 days, P< 0.001). Readmission at 180-days was similar between groups (15.3%vs17.7%, P=0.126). The top five readmission diagnoses and procedures were not significantly different among the top centers by volume(see Table 2).

Conclusion: Patients who received care at a top 5% hospital were less likely to live in the same state as the hospital, have private insurance, and a higher income. Additionally, their hernias were more complex, as identified by an increased rate of CST. Despite this, the readmission rate at 180-days and the time to readmission between groups were similar. This pattern persisted when the top 1% of hernia centers by volume were compared to the top 2-5%. These data suggest potential financial disparities among patients cared for at the top hernia centers by volume.

Table 1. Top 5 Readmission Diagnoses and Procedures by Hernia Center Volume				
	HVC (n=1228)	MVC (n=1549)	LVC (n=972)	*P*-Value
Most Common Readmission Diagnosis				***P*<0.001**
Postoperative Infection	851 (69.3%)	951 (61.39%)	575 (59.16%)	
Sepsis	128 (10.42%)	128 (13.49%)	138 (14.2%)	
SIRS	101 (8.22%)	101 (9.23%)	103 (10.6%)	
Seroma	82 (6.68%)	82 (7.55%)	85 (8.74%)	
Wound Breakdown	66 (5.37%)	66 (8.33%)	71 (7.30%)	
Most Common Readmission Procedure				***P*<0.001**
Drainage of Abdominal Wall	204 (33.39%)	174 (23.29%)	94 (20.57%)	
Port or PICC Insertion	131 (21.44%)	196 (26.24%)	137 (29.98%)	
Excision of Subcutaneous Tissue or Fascia	132 (21.60%)	203 (27.18%)	112 (24.51%)	
Blood Transfusion	76 (12.44%)	100 (13.39%)	74 (16.19%)	
Abdominal Wall Percutaneous Drainage	68 (11.13%)	74 (9.91%)	40 (8.75%)	

*HVC: High volume center (≤5%), MVC: Medium volume center (6-25%), LVC: Low volume center (>25%). SIRS: Systemic inflammatory response syndrome. PICC: Peripherally inserted central catheter

**Data represented at n (%).

Table 2. Top 5 Readmission Diagnoses and Procedures within Top 5% Centers by Volume			
	Top 1% (n=447)	2-5% (n=781)	*P*-Value
Most Common Readmission Diagnosis			0.157
Postoperative Infection	325 (72.71%)	526 (67.35%)	
Sepsis	35 (7.83%)	93 (11.91%)	
SIRS	38 (8.5%)	63 (8.07%)	
Seroma	26 (5.82%)	56 (7.17%)	
Wound Breakdown	23 (5.15%)	43 (5.51%)	
Most Common Readmission Procedure			0.373
Drainage of Abdominal Wall	75 (34.56%)	129 (32.74%)	
Port or PICC Insertion	37 (17.05%)	94 (23.86%)	
Excision of Subcutaneous Tissue or Fascia	51 (23.5%)	81 (20.56%)	
Blood Transfusion	27 (12.44%)	49 (12.44%)	
Abdominal Wall Percutaneous Drainage	27 (35.52%)	41 (10.41%)	

* SIRS: Systemic inflammatory response syndrome. PICC: Peripherally inserted central catheter.

**Data represented at n (%).

52. Transabdominal Preperitoneal (TAPP) Versus Intraperitoneal Onlay Mesh (IPOM) For Ventral Hernia Repair: An Updated Systematic Review And Meta-Analysis

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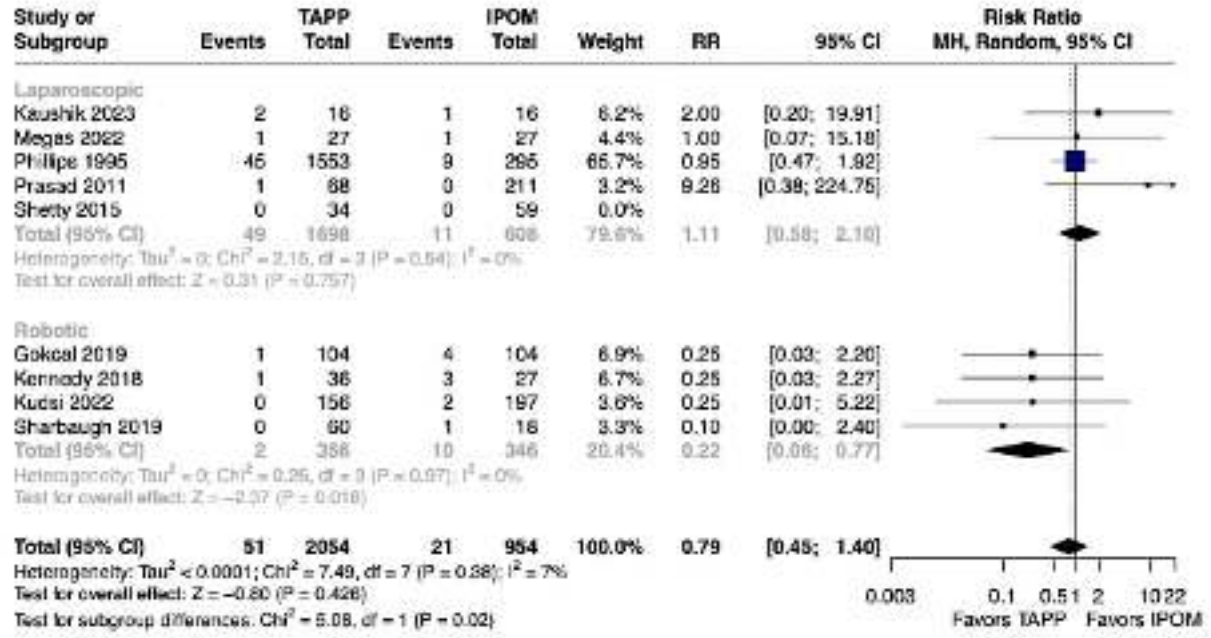
Background: Persistent controversy exists regarding the optimal approach for ventral hernia repair (VHR). Considering the concerns regarding the use of an intraperitoneal mesh and the increasing use of robotic technology, transabdominal preperitoneal (TAPP) emerged as an alternative to prevent mesh-related complications in the intraperitoneal space and is increasingly being performed. This study aims to provide an updated comparison of TAPP and intraperitoneal onlay mesh (IPOM) for VHR.

Methods: PubMED, Cochrane, and EMBASE databases were systematically searched from inception to April 2024, for studies on patients undergoing VHR, comparing TAPP and IPOM. Outcomes included were intraoperative complications, such as vascular and bowel injury, and postoperative complications (hernia recurrence within 1 year of operation, seroma, hematoma, ileus, urinary retention, small bowel obstruction). Additional outcomes were hospital length of stay (LOS), operative time, and early postoperative pain, assessed with visual analog scale (VAS) scores after 24h of surgery.

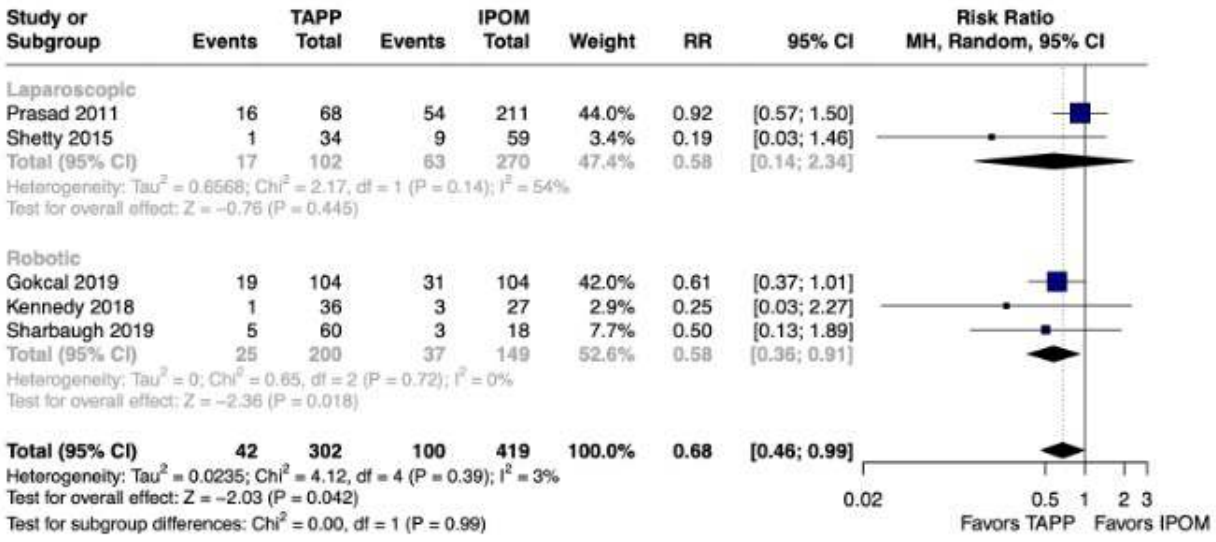
Results: From 398 records, 9 were included in our pooled analysis, which comprised 8 retrospective cohorts and 1 prospective cohort, totaling 3,008 patients. 2,306 (77%) patients underwent laparoscopic VHR and 702 (23%) underwent robotic VHR. Mean defect area ranged between 3 to 30.8 cm2 for the TAPP group and between 3.3 to 29.9 cm2 in the IPOM group. Our meta-analysis revealed that IPOM is associated with a higher incidence of overall postoperative complications as a composite outcome (13.9% vs 23.9%; RR 0.66; 95% CI 0.48, 0.92; P=0.013) and urinary retention (RR 0.52; 95% CI 0.27, 1.0; P=0.049) compared to TAPP. After performing a subgroup analysis for robotic surgeries only, we found that IPOM also has a higher rate of hematoma compared to TAPP (RR 0.22; 95% CI 0.06, 0.77; P=0.018). No differences were seen between both techniques regarding ileus, hernia recurrence, hospital LOS, operative time, seroma, small bowel obstruction, VAS scores, vascular injury, and bowel injury. Subgroup analysis for robotic VHR showed similar results.

Conclusion: IPOM is related to a higher incidence of hematoma, urinary retention, and overall early postoperative complications compared to TAPP. TAPP should be the technique of choice for minimally invasive VHR when feasible; however, considering the availability of resources and surgeon expertise, IPOM might still be considered a viable alternative.

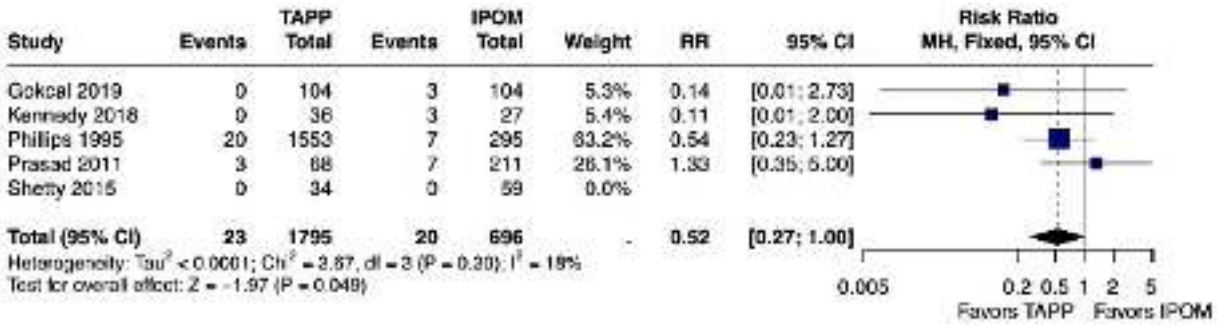
A) Meta-analysis of Hematoma Between TAPP and IPOM



B) Postoperative complications (composite outcome: ileus, hematoma, seroma, urinary retention, small bowel obstruction, SSI)



C) Urinary retention



53. Trends In Parastomal Hernia Repair – A 7-Year National Review

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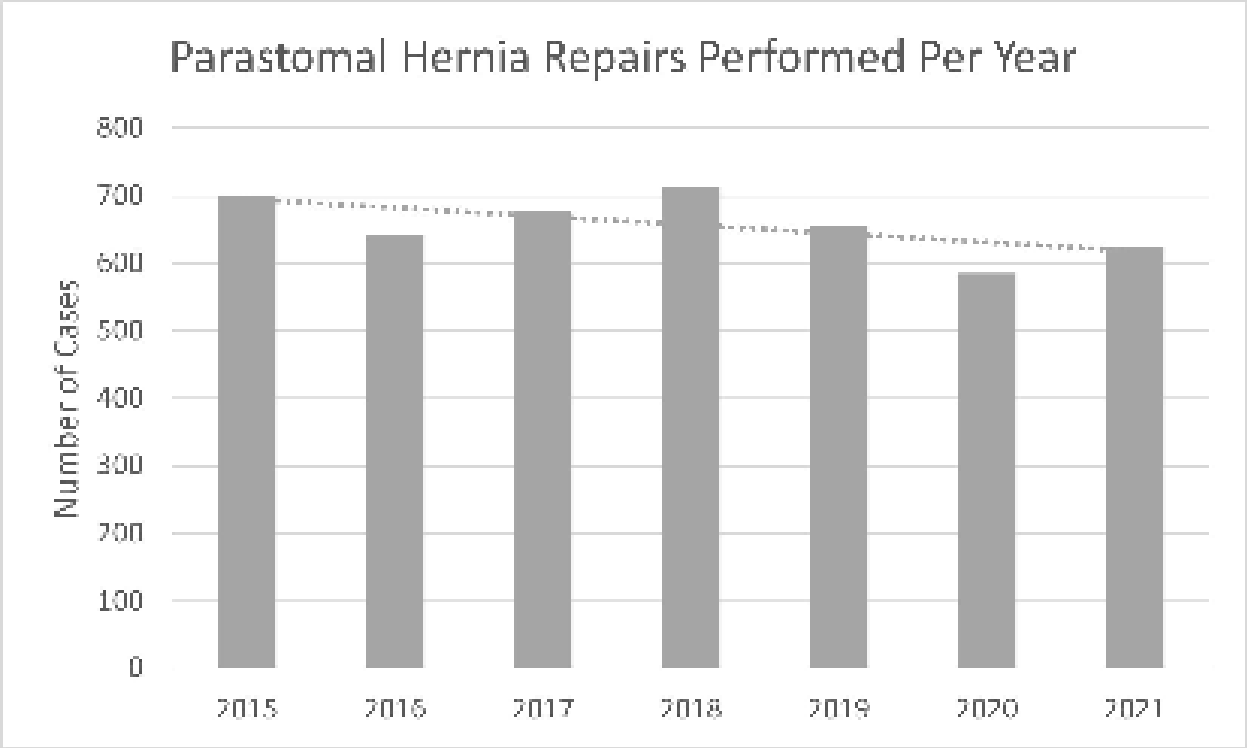
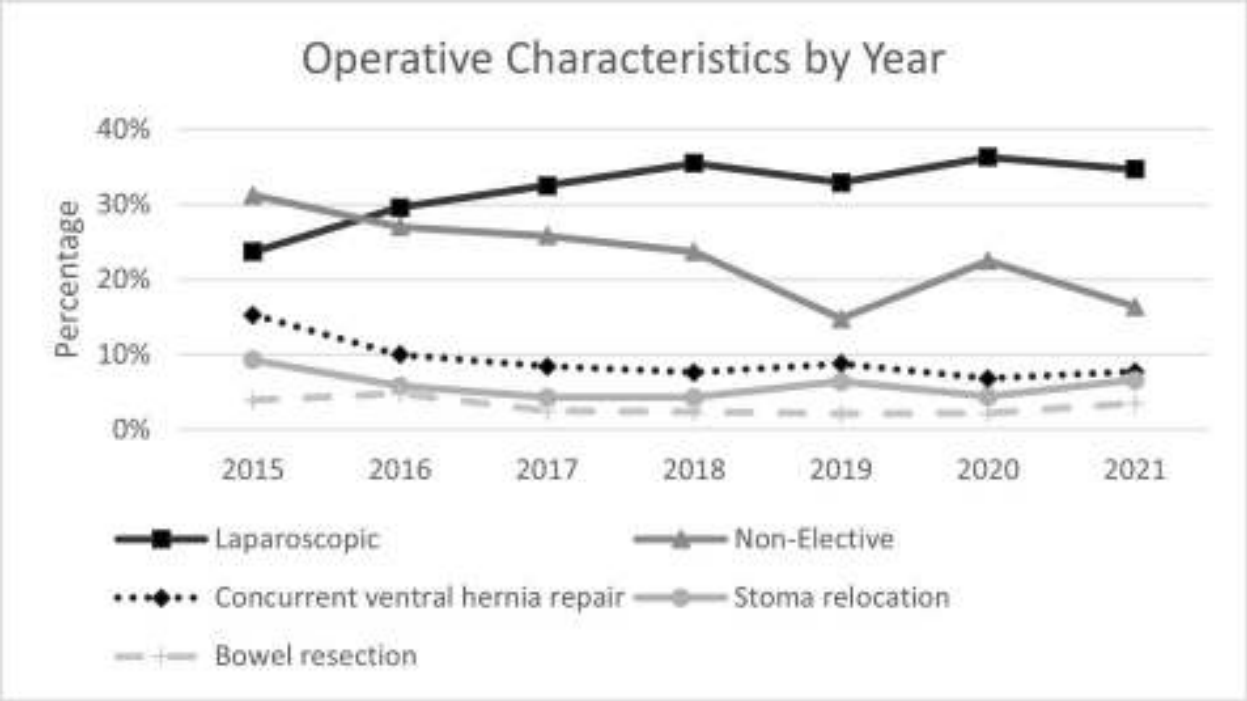
Background: Parastomal hernias are the most common complication following stoma creation. Though often asymptomatic, parastomal hernias carry potential for significant morbidity, including pain and discomfort, bowel obstruction, and skin breakdown. Despite this, there is limited consensus on optimal techniques for parastomal hernia repair (PHR). The aim of this study is to examine national trends in PHR over a 7-year period to better characterize the current landscape of parastomal hernia management.

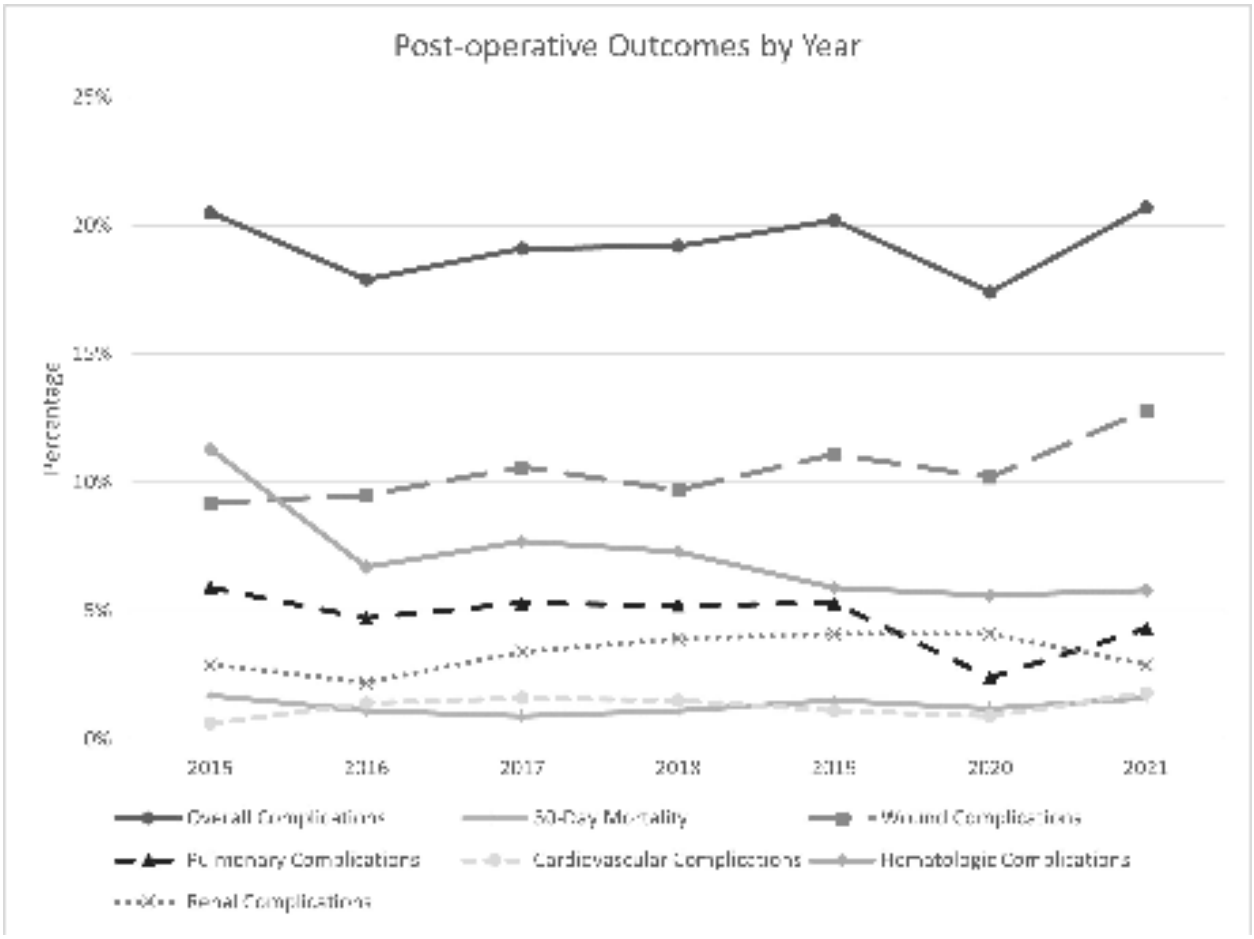
Methods: The 2015-2021 ACS-NSQIP databases were queried for cases of PHR using International Classification of Disease (ICD) 9 and 10 codes and Current Procedural Terminology (CPT) codes. Data regarding patient demographics, presentation, operative characteristics, and postoperative outcomes was compared to identify annual trends.

Results: In total, 4596 cases of PHR were included. The number of PHR performed remained stable during the study period (699 (0.08%) to 623 (0.06%), p=0.117). There was no change in age or gender. However, body mass index increased from 28.7 to 31.2 from 2015 to 2021 (p< 0.001). There was a significant increase in the proportion of cases performed laparoscopically (23.7% to 34.7%, p< 0.001) and a similar increase in median operative time (122 to 145 minutes, p< 0.001) during the study period. Meanwhile, the proportion of non-elective cases decreased from 2015 to 2021 (31.2% to 16.4%, p< 0.001). Patients in 2015 more commonly underwent concurrent ventral hernia repair (p< 0.001), stoma relocation (p=0.002), or bowel resection (p=0.031) compared to patients in 2021. The rates of overall complications (p=0.690) and 30-day mortality (p=0.811) did not significantly change from 2015 to 2021. On sub-analysis of individual categories of complications, there was a significant decrease in hematologic complications from 2015 to 2021 (p< 0.001). There was no change in rates of wound, pulmonary, cardiovascular, or renal complications over time.

Conclusion: Parastomal hernias remain a common problem following stoma creation. While the annual rates of PHR have remained stable since 2015, more cases are now performed laparoscopically. Likely because of this, operative times have also risen since 2015, although complication rates and 30-day mortality have remained largely unchanged. Additionally, the proportion of non-elective PHR has decreased over time, which could be due to improvements in prevention and recognition of parastomal hernias. However, further research is needed to better understand the factors contributing to these temporal changes.


Parastomal Hernia Repairs Performed Per Year
Number of Cases
800
700
600
500
400
300
200
100
0
2015
2016
2017
2018
2019
2020
2021


Operative Characteristics by Year
Percentage
40%
30%
20%
10%
0%
2015
2016
2017
2018
2019
2020
2021
Laparoscopic
Non-Elective
Concurrent ventral hernia repair
Stoma relocation
Bowel resection


Post-operative Outcomes by Year
25%
20%
15%
10%
5%
0%
Percentage
2015
2016
2017
2018
2019
2020
2021
Overall Complications
30-Day Mortality
Wound Complications
Pulmonary Complications
Cardiovascular Complications
Hematologic Complications
Renal Complications

54. The Evolving Applications Of Laparoscopic Intracorporeal Rectus Aponeuroplasty (LIRA) In Ventral Hernia Repair – A Systematic Review

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Montefiore Medical Center

Background: Laparoscopic intracorporeal rectus aponeuroplasty (LIRA), emerged as a method that combines benefits from minimally invasive and abdominal wall reconstruction with defect closure, restoring the midline without tension by folding the posterior aponeurosis of both abdominal rectus muscles and using intraperitoneal mesh repair. We aimed to perform a systematic review of the existing evidence on LIRA results and potential applications.

Methods: A thorough search of Cochrane Central, Scopus, SciELO, LILACS, and PubMed/MEDLINE, focusing on studies that explored LIRA's possible applications and results was performed. Key outcomes evaluated included recurrence, seroma, hematoma, surgical site infection (SSI), and length of hospital stay. We included both analytic data and descriptive studies.

Results: Out of 132 screened studies, 7 met the inclusion criteria and comprised 116 patients, of which 69 (59.5%) were operated using LIRA. Three cohort studies were included, comprising two case series of conventional and robotic LIRA repair, and one comparative study of LIRA versus intraperitoneal underlay mesh repair (IPUM plus). No surgical site infections were reported. Seroma rates ranged between 11.1% to 50%, while no bleeding or hematoma was noted. There were no patients presenting recurrence in a median follow-up ranging from 12 to 15 months, despite the comparative study reporting a 4.4% rate of bulging without clinical recurrence. The mean length of hospital stay ranged from 12 to 36 hours. LIRA presented no differences in postoperative complications compared to the IPUM plus technique. Furthermore, three of the included studies were video articles expanding the technique to parastomal, suprapubic W2, and lateral W2 hernias. All three cases presented no postoperative complications or recurrence. One video article explored an adapted LIRA technique with preperitoneal mesh positioning, avoiding LIRA's drawback of intraperitoneal mesh positioning.

Conclusion: LIRA is linked to low recurrence and postoperative complications. It is a novel approach with potential applications in various types of primary and incisional ventral hernias.

55. Robotic Sugarbaker Parastomal Hernia Repair: Updated Series And Outcomes

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Background: This study aims to present updated outcomes after previously describing our technique for robot-assisted Sugarbaker parastomal hernia repair.

Methods: Patients who underwent parastomal hernia repair with a robotic Sugarbaker technique at a tertiary hernia center were identified from an institutional database. The approach involves mesh placement in the intraperitoneal or preperitoneal position after closure of the fascial defect. Baseline demographics, intra-operative variables, and post-operative outcomes were evaluated.

Results: Twenty-five patients were identified who underwent robotic Sugarbaker parastomal hernia repair with mesh. Average age was 61.9 +/- 9.9 years, 17 (68%) were male, and average BMI was 30.6 +/- 5.0 kg/m2. Stoma types included 11 (44%) colostomies, 8 (32%) ileostomies, and 6 (24%) urostomies. All but one case was elective (96%) and 2 (8%) were recurrent. Average operative time was 179.3 +/- 43.1 min. Biologic mesh was used in 5 (20%) and synthetic mesh in 20 (80%) cases. Concurrent hernia repair was performed in 10 (40%) cases. Two (8%) patients were converted from a robotic to open procedure . Average length of stay was 4.7 +/- 2.4 days. A total of 3 (12%) patients underwent reoperation related to obstruction at the stoma site. There were no additional 30-day readmissions, seromas requiring intervention, or wound complications. There were 4 (18.2%) total recurrences during a mean follow up of 16.8 +/- 16.9 months .

Conclusion: Robotic Sugarbaker parastomal hernia repair remains an effective technique that allows for minimally invasive repair of parastomal and concurrent hernias. Care should be taken to prevent obstruction of the stoma related to fascial and peritoneal flap reconstruction or mesh placement, which is a significant risk of this technique.

56. Concomitant Gynecologic Procedures During Ventral Hernia Repair: Similar Outcomes To Hernia Repair Alone

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Background: Undergoing simultaneous treatment by multidisciplinary surgical specialties offers an interesting approach to management with the benefit of single-time anesthesia and recovery period. Several studies review the pros and cons of combining ventral and inguinal hernia repair surgeries with cholecystectomies, gastrectomies, bowel resection and anastomosis, vasectomies etc., however a paucity of research concerning concomitant gynecologic procedures exists. The aim of this paper is to compare outcomes of patients who underwent combined gynecologic procedures with ventral hernia repair (VHR).

Methods: Patients who underwent VHR with a combined gynecological procedure from 2020 to 2022 were retrospectively identified in the Abdominal Core Health Quality Collaborative and categorized into two groups with surgical wound contamination in mind. Group one included patients with clean procedures such as salpingo-oophorectomy (SO), bilateral tubal ligation (BTO), ovarian cystectomy (CO), or endometrioma resection (ER) without hysterectomy. Group two consisted of patients who underwent hysterectomy with or without SO/BTO/OC/ER with clean-contaminated classification. Propensity score matching (PSM; 3:1 ratio) was performed based on relevant demographic and perioperative covariates (Age, Sex, BMI, Elective, Recurrent, Hernia Width, Primary Indication Bowel obstruction, Wound status). Postoperative outcomes at 30 days were analyzed for both groups.

Results: Out of 16,583 patients undergoing VHR, 313 (1.89%) underwent a concurrent gynecological procedure. Following PSM, 70 patients in Group 1 were matched with 210 controls, and 151 patients in Group 2 with 425 controls. Operative time was similar for group 1, however significantly higher in group 2 ($p< 0.001$). No statistically significant differences were observed in either group in surgical site infection (SSI), surgical site occurrence (SSO), length of stay, recurrence of hernia, reoperations, or readmissions (Table 1). Surgical site occurrences requiring procedural interventions (SSOPI) were significantly higher in the control group assigned to group 2 (5.4% vs 1.3%; $p = 0.034$).

Conclusion: This study compares the outcomes of patients that underwent VHR with simultaneous gynecological procedure to patients with VHR alone. Combining hernia repair and clean and clean-contaminated gynecologic surgery did not appear to have an adverse impact on clinical outcomes. These results suggest that further collaboration between gynecology and general surgery can be considered for management of concurrent abdominopelvic pathologies.

Table 1: Demographic, Perioperative, and Hernia Characteristics after Propensity Score Matching

	Group 1 n = 70	Control n = 210	p	Group 2 n = 151	Control n = 425	p
Female %(n)	100 (70)	100 (210)	-	100 (151)	100 (425)	-
Race White Non-White	71 (50) 29 (20)	78 (164) 22 (46)	0.3	69 (104) 31 (47)	78 (331) 22 (94)	0.03
Age, median (IQR	52.0 (38.0, 63.3)	50.5 (42.8, 62.0)	0.5	50.0 (44.0, 60.0)	53.0 (43.0, 61.0)	0.5
BMI, Median (IQR	35.8 (31.1, 40.4)	36.2 (30.4, 40.9)	0.6	35.4 (30.1, 41.7)	34.9 (30.3, 41.6)	0.5
Comorbidities, % (n) Hypertension Diabetes COPD IBD	41 (29) 20 (14) 0 2.9 (2) 0	45 (95) 22 (46) 4.3 (9) 3.3 (8) 0.5 (1)	0.6 0.7 0.13 0.7 >0.9	49 (74) 28 (43) 2.6 (4) 2.6 (4) 0	40 (169) 21 (89) 6.1 (26) 5.5 (25) 1.1 (4)	0.045 0.05 0.10 0.011 0.5
ASA, % (n) 1 2 3	5.7 (4) 44 (31) 50 (35)	6.2 (13) 40 (85) 53 (112)	>0.9	2.0 (3) 38 (58) 60 (90)	1.6 (7) 44 (185) 55 (233)	0.5
Indication for surgery, % (n) Fistula Infected Mesh Bowel Obstruction	0 0 7.2 (5)	0 0 9.1 (19)	>0.9 >0.9 0.6	0 0 1.4 (2)	0.7 (3) 0.7 (3) 9.2 (38)	0.5 0.5 0.002
Wound status, % (n) Clean Clean-contaminated	72 (51) 27 (19)	75 (157) 25 (54)	0.8	32 (48) 68 (103)	36 (152) 64 (270)	>0.04
Hernia Type, % (n) Incisional Umbilical Epigastric Parastomal Spigelian	70 (49) 23 (16) 1.4 (1) 1.4 (1) 0	80 (167) 11 (24) 5.7 (12) 2.2 (5) 1.0 (2)	0.10 0.018 0.3 0.3 >0.9	81 (122) 10 (29) 4.0 (6) 0.7 (1) 0.7 (1)	76 (323) 11 (48) 5.4 (23) 16 (68) 0	0.2 0.014 0.5 <0.001 0.3
Concomitant procedure, % (n) Hysterectomy Salpingo-oophorectomy Ovarian cystectomy Endometrioma resection Cesarian section Bilateral Tubal Ligation Other gynecologic procedure	0 73 (51) 7.1 (5) 2.9 (2) 0 21 (15) 1.4 (1)	21 (5) 43 (9) 0 14 (3) 0 0 1.4 (1)	<0.001 0.2 >0.9 0.3 >0.9 0.3 0.2	100 (151) 48 (73) 2.6 (4) 4.6 (7) 0 0 3.3 (11)	55 (71) 10 (2) 0 15 (3) 0 0 15 (9)	<0.001 0.001 >0.9 0.10 >0.9 >0.9 <0.001
Recurrent Hernia, % (n)	33 (23)	33 (67)	0.9	27 (41)	25 (113)	0.8
Surgical Approach, % (n) Laparoscopic Open Robotic	24 (17) 50 (35) 26 (18)	27 (56) 46 (96) 28 (58)	0.8	8.6 (13) 70 (106) 21 (32)	8.0 (34) 71 (300) 21 (89)	>0.9
Hernia width, median (IQR) <4cm, % (n) 4-10cm, % (n) >10cm, % (n)	6.0 (2.0, 12.5) 37 (25) 29 (20) 34 (24)	5.0 (3.0, 10.0) 30 (62) 44 (93) 26 (55)	>0.9 0.067	5.0 (3.0, 10.0) 39 (59) 44 (66) 26 (39)	6.0 (3.0, 10.0) 28 (119) 38 (163) 34 (143)	0.8 0.3
Mesh used, % (n) Permanent Resorbable Biological	94 (66) 4.3 (3) 1.4 (1)	97 (203) 2.9 (6) 0.5 (1)	0.5	81 (122) 15 (22) 4.6 (7)	81 (345) 8.5 (36) 9.5 (42)	0.028
Mesh location, % (n) Onlay Inlay Sublay	8.7 (6) 2.9 (2) 91 (64)	6.7 (14) 1.4 (3) 92 (193)	0.7	7.3 (11) 2.0 (3) 91 (137)	12 (51) 4.7 (20) 83 (353)	0.17

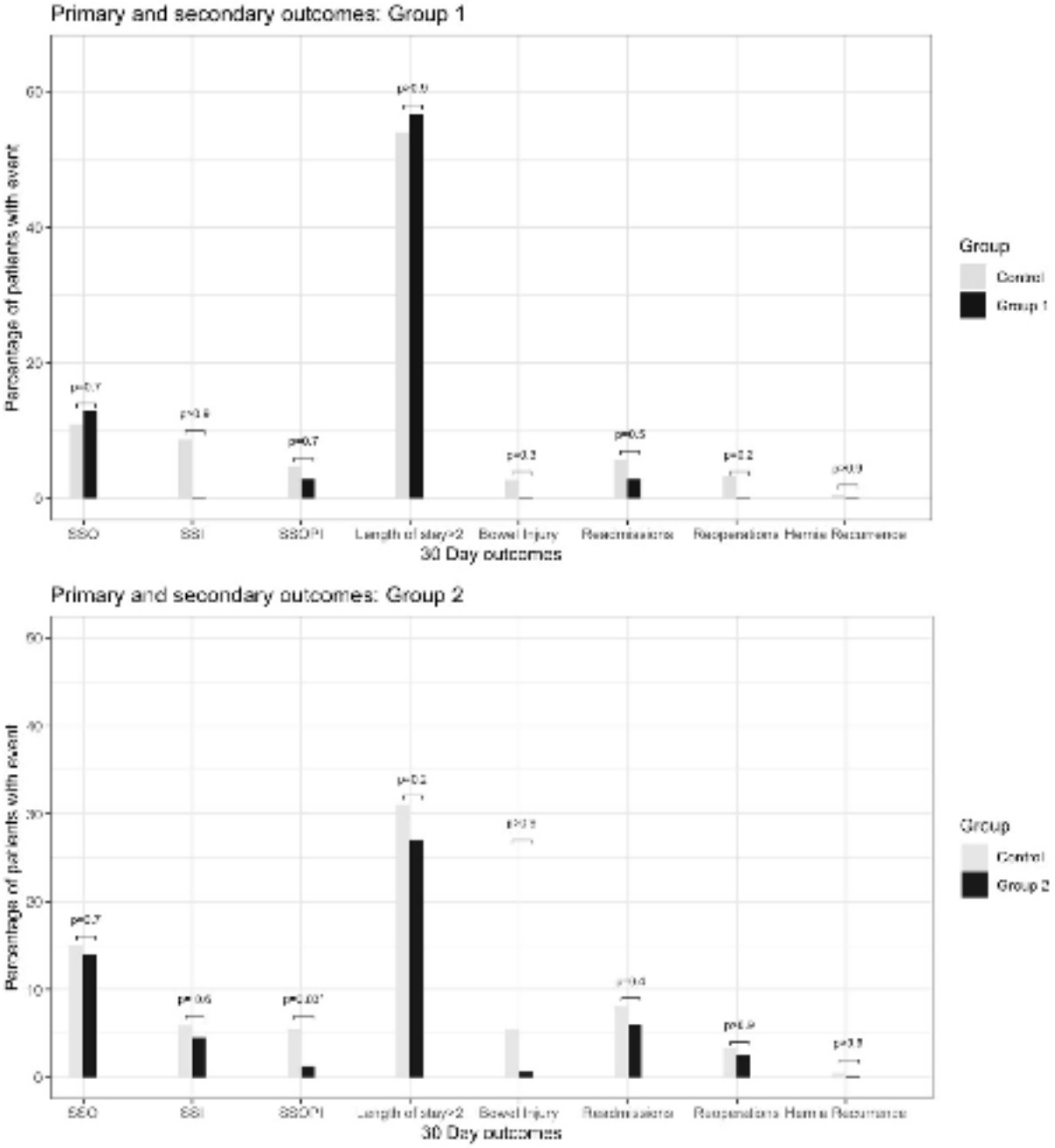
IQR: interquartile range. BMI: body mass index. ASA: American Society of Anesthesiology

Table 2: Outcomes at 30 days for Propensity Score Matched Group 1, and Propensity Score Matched Group 2

	Group 1 n = 79	Control n = 210	p	Group 2 n = 151	Control n = 425	p
Operative time, % (n) 0-59 min 60-119 min 120-179 180-239 >240	2.9 (2) 76 (53) 29 (20) 17 (12) 26 (18)	13 (27) 29 (60) 24 (51) 11 (24) 23 (48)	0.13	2.6 (1) 13 (19) 19 (28) 21 (32) 45 (68)	7.8 (33) 23 (99) 24 (100) 16 (66) 31 (133)	<0.00
Length of stay, median days (IQR)	2 (2, 4)	1 (0, 4)	>0.9	2 (1, 4)	3 (1, 5)	0.2
30-day readmission, % (n)	2.9 (2)	5.7 (12)	0.5	6.0 (9)	8.0 (34)	0.4
Hernia recurrence, % (n)	0	0.5 (1)	>0.9	0	0.5 (2)	>0.9
Reoperation, % (n)	0	3.3 (7)	0.2	2.6 (4)	3.3 (14)	>0.9
SSO, % (n)	13 (9)	11 (23)	0.9	14 (21)	15 (64)	0.7
SSI, % (n)	4.3 (3)	4.8 (10)	>0.9	4.6 (7)	5.9 (25)	0.6
SSO/SSI, % (n)	5.7 (4)	5.2 (11)	>0.9	4.0 (6)	8.9 (38)	0.048
SSOPI, % (n)	2.9 (2)	4.8 (10)	0.7	1.3 (2)	5.4 (23)	0.034

SSO: surgical site occurrence. SSI: surgical site infection. SSOPI: surgical site occurrence requiring procedural intervention

Figure 1: Outcomes at 30 days for Propensity Score Matched Groups



57. Operative vs Non-Operative Management Of Ventral Hernia: A Population Based Study Of Long-Term Benefits And Consequences

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Background: Worldwide, ventral hernia (VH) is a ubiquitous surgical condition. Severity widely varies from being asymptomatic to impacting quality of life by causing pain or bowel obstruction. Although not all VHs require surgical intervention and can be observed, surgical repair aims to address both symptoms of VH and potentially prevent future complications, improving long-term patient outcomes. While surgical indications may be straightforward, long-term benefits of repair compared to non-operative management remain understudied. This study investigates whether surgical repair for VH improves patient outcomes compared to non-operative management regarding physical therapy needs, opioid misuse, and risk of subsequent bowel obstruction.

Methods: This retrospective study utilized the TriNetX Research Network. TriNetX is an anonymized, HIPAA compliant, global federated health research network that provides electronic medical records (EMR) across health care organizations (HCOs) from several countries. Data was extracted from patients across 86 HCOs. Administrative coding data were used to identify patients and our selected outcomes. The control cohort were individuals with VH without surgical repair after diagnosis. The comparison cohort were individuals with VH and surgical repair within 12 months of diagnosis. Cohorts were balanced based on demographics and confounding diagnoses using a 1:1 propensity score matching. Data analyses included measures of association and Kaplan-Meier analysis (disease free survival at 5 years). Outcomes included physical therapy evaluation, diagnosis of opioid misuse, and bowel obstruction after VH diagnosis in the control group and after surgical repair in the comparison group.

Results: Propensity score matching yielded 139,255 patients per cohort. The data set had a mean age of 53 (21-70) years old. The dataset was balanced between males and females, with a small percentage unknown. Most patients were white (65.54%), followed by Black or African American (14.31%). Compared to the control group, patients who underwent surgery had a higher risk of participating in a physical therapy evaluation (OR: [1.15], 95% CI: [1.11, 1.18]). Diagnosis of opioid misuse was also more frequent in the surgical group (OR: [1.09], 95% CI: [1.04, 1.14]). Kaplan-Meier analysis revealed a significantly higher 5-year disease free rate of bowel obstruction in the surgical group compared to controls (p-value < 0.0001).

Conclusion: This retrospective analysis of a large dataset compared several long-term outcomes of surgical repair versus non-operative management for ventral hernia. Surgical repair was associated with a lower risk of bowel obstruction over five years but showed a slightly increased incidence of physical therapy evaluation and diagnosis of opioid misuse. The study highlights the potential benefits of surgical intervention in preventing serious complications; however, further research is needed to characterize and understand factors contributing to increased diagnosis of opioid misuse and physical therapy evaluation. Strategies to mitigate post operative risk should be developed. The study's limitations include its retrospective design and reliance on administrative coding data, which may not capture the full spectrum of patient presentations as they may be underrepresented. In conclusion, this study highlights the nuanced decision-making that must be undertaken prior to surgical repair of ventral hernias.

58. Midline Bulge After Robotic Ventral Hernia Repair Via Retrorectus Approach

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Background: Robotic retrorectus repair of ventral hernias via transabdominal (TARM) or enhanced view totally extraperitoneal (eTEP) approach has become increasingly popular over the past decade. Although few studies with high quality long-term data exist, there is evidence that approximately one-fifth of patients who undergo robotic eTEP with retrorectus repair develop a midline "bulge", which presents as rectus diastasis on postoperative physical examination, without radiographic evidence of true diastasis on cross-sectional imaging. The purpose of this study is to examine patient characteristics, surgical factors, or postsurgical anatomical changes that may contribute to development of postoperative bulge after retrorectus repair of a midline hernia.

Methods: We conducted a retrospective chart review of adult patients with a midline ventral hernia that underwent robotic TARM or eTEP retrorectus repair between January 2015 and December 2023. All repairs were performed with retromuscular placement of polypropylene mesh, without closure of the posterior sheath. In patients with pre- and postoperative CT scans, we measured the width and thickness of the rectus abdominis musculature and diastasis (if present) at M3 and at the widest point of the hernia defect. We collected data on patient demographics, comorbidities, BMI, mesh size, type of repair (eTEP or TARM), and complications such as surgical site infection. Descriptive statistics (mean ± standard deviation for continuous variables; percentages for categorical variables) were calculated in R software. The two groups, with vs. without clinical diastasis, were compared using Welch's two sample t-test.

Results: Of 104 patients who met inclusion criteria, 23 were noted to have clinical "diastasis" or midline bulge (22.1%). There were 25 patients who had both preoperative and postoperative CT scans; 6 of these patients had a midline bulge on postoperative exam and 19 did not. Among patients who had preoperative and postoperative CTs, there was an overall increase in total rectus width (+3.1 ± 2.6 cm at M3, +3.3 ± 2.8 cm at widest point of hernia defect) and a marginal decrease in thickness (at M3: right side -0.14 ± 0.24 cm, left side -0.14 ± 0.28 cm; at widest point of hernia defect: right side -0.08 ± 0.22 cm, left side -0.11 ± 0.35 cm). We found no significant difference in these changes pre-to-postoperatively between patients who developed a midline bulge and those who did not. Patients who developed a midline bulge were noted to have a longer preoperative total rectus muscle width compared to those with no midline bulge (16.6 vs. 15.6 cm at M3, 18.0 vs 16.1 cm at widest point of hernia defect), although this difference did not reach significance with our small sample size.

Conclusion: Our study demonstrates that postoperative midline bulge occurs in about 22% of patients who undergo robotic ventral hernia repair with retrorectus approach, consistent with prior reports. Development of midline bulge did not correlate with the degree of pre-to-postoperative changes seen in the width of the rectus abdominis muscles. Further study is warranted to determine if this phenomenon is related to intrinsic patient anatomical factors such as rectus muscle width or distance between the lineae semilunares.

Table 1. Patient characteristics and perioperative data (n = 25)

Variable	[Mean ± st. deviation, median] or [n (%)]
Age (years)	61.5 ± 12.1, 63
Race	
White	19 (75%)
Black	4 (16%)
Asian	1 (4%)
Other	1 (4%)
Gender	
Female	14 (56%)
Male	11 (44%)
BMI	31.3 ± 4.7, 31.1
Smoking status	
Current	5 (20%)
Former	5 (20%)
Never	15 (60%)
Comorbidities	
COPD	1 (4%)
Hypertension	11 (44%)
Diabetes	5 (20%)
ASA Class	
I	1 (4%)
II	14 (56%)
III	10 (40%)
Procedure	
eTEP	17 (68%)
TARM	8 (32%)
Mesh size (area in cm^2)	
0-399	7 (28%)
400-799	14 (56%)
800-1200	4 (16%)

Table 2. Anatomical data and outcomes (n = 25)

Variable	[Mean ± st. deviation, median] or [n (%)]	
Preoperative diastasis	Yes, 21 (84%)	No, 4 (16%)
Size of preoperative diastasis	4.4 ± 2.1, 5	
Hernia Grade		
1	3 (12%)	
2	21 (84%)	
3	1 (4%)	
Post-op clinical "diastasis" or midline bulge	Yes, 19 (76%)	No, 6 (24%)
Pre-op CT measurements (cm)		
Hernia defect width	5.11 ± 1.79, 5.00	
Hernia defect length	6.99 ± 3.83, 7.00	
Hernia size (area in cm^2)	116.9 ± 76.4, 114.0	
At M3		
Width of rectus	Right: 7.83 ± 2.06, 7.97	Left: 7.97 ± 2.17, 8.10
Thickness of rectus	Right: 1.14 ± 0.31, 1.13	Left: 1.05 ± 0.30, 1.07
Total width/span of rectus	15.81 ± 3.99, 15.84	
At widest point of hernia defect		
Width of rectus	Right: 8.29 ± 2.47, 8.25	Left: 8.23 ± 2.52, 7.78
Thickness of rectus	Right: 0.93 ± 0.26, 0.90	Left: 0.94 ± 0.23, 0.90
Total width/span of rectus	16.52 ± 4.74, 16.87	
Post-op CT measurements (cm)		
At M3		
Width of rectus	Right: 9.18 ± 1.96, 9.15	Left: 9.72 ± 2.60, 9.70
Thickness of rectus	Right: 0.99 ± 0.31, 0.98	Left: 0.91 ± 0.25, 0.97
Total width/span of rectus	18.90 ± 4.44, 18.93	
At widest point of hernia defect		
Width of rectus	Right: 9.71 ± 2.46, 9.54	Left: 10.06 ± 3.10, 9.07
Thickness of rectus	Right: 0.88 ± 0.22, 0.88	Left: 0.85 ± 0.27, 0.87
Total width/span of rectus	19.7 ± 5.36, 18.49	
Change from pre-op to post-op CT (cm)		
At M3		
Thickness of rectus	Right: -0.14 ± 0.24, -0.15	Left: -0.14 ± 0.28, -0.17
Total width/span of rectus	+3.09 ± 2.65, 2.83	
At widest point of hernia defect		
Thickness of rectus	Right: -0.08 ± 0.27, -0.03	Left: -0.11 ± 0.35, -0.03
Total width/span of rectus	+3.26 ± 2.80, 3.42	
Length of hospital stay (days)		
<1	18 (72%)	
1	4 (16%)	
2	1 (4%)	
3	2 (8%)	
Surgical site infection	1 (4%)	
Surgical site occurrence (e.g. seroma, wound dehiscence)	6 (24%)	

Table 3. Comparison of patients with vs. without postoperative midline bulge

Variable	With midline bulge (n=6)		Without midline bulge (n=19)	
Pre-op CT measurements (cm)				
Average total width/span of rectus at M3	16.61		15.55	
Average total width/span at widest point of hernia defect	17.99		16.06	
Post-op CT measurements (cm)				
Average total width/span of rectus at M3	19.26		18.79	
Average total width/span at widest point of hernia defect	20.66		19.5	
Change from pre-op to post-op CT (cm)				
At M3				
Thickness of rectus	Right: -0.14	Left: -0.20	Right: -0.14	Left: -0.12
Total width/span of rectus	+2.65		+3.24	
At widest point of hernia defect				
Thickness of rectus	Right: -0.21	Left: -0.09	Right: -0.04	Left: -0.12
Total width/span of rectus	+2.67		+3.45	

59. Open Versus Robotic Transversus Abdominis Release For Ventral Hernia Repair: An Updated Systematic Review And Meta-Analysis

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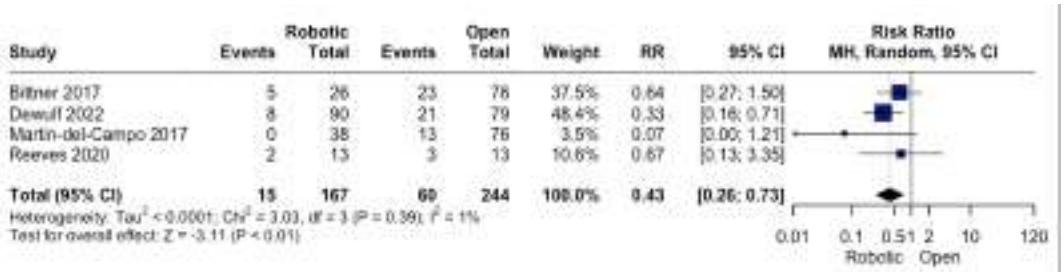
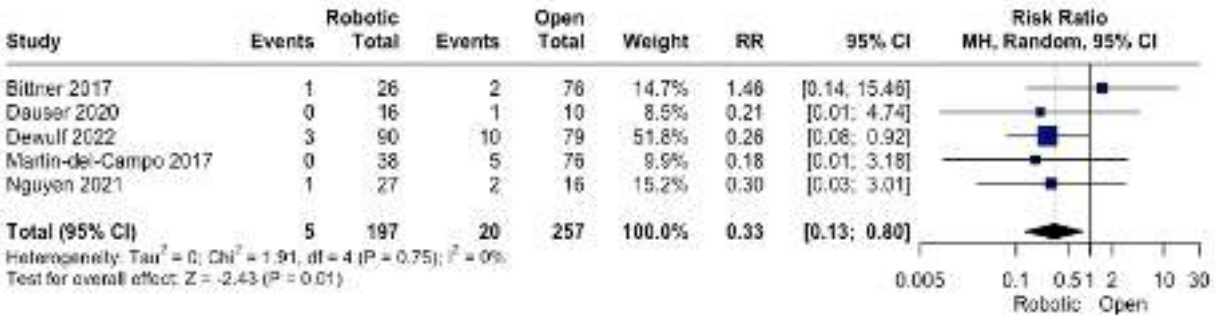
Background: Posterior component separation using transversus abdominis release (TAR) is well established as an option for repair of large hernia defects. TAR can be performed robotically (rTAR) or open (oTAR) with limited data to demonstrate benefit and guide decision making. We conducted a systematic review and meta-analysis comparing rTAR and oTAR approaches for ventral hernia repair (VHR).

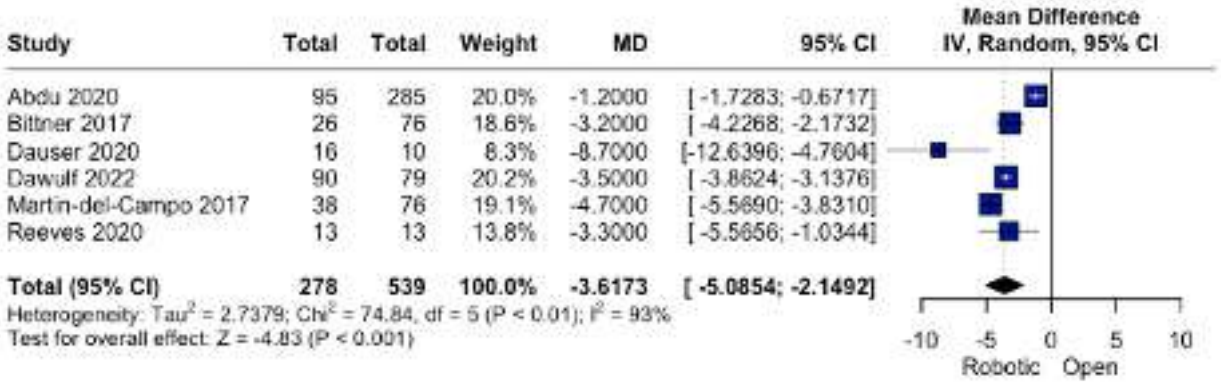
Methods: We searched Pubmed, Embase, Cochrane, and Web of Science for studies comparing rTAR and oTAR for VHR. Hybrid rTAR was not included in our analysis. Our primary outcomes were overall postoperative and intraoperative complications, surgical site occurrences (SSO), SSO requiring surgical intervention (SSOPI), surgical site infection (SSI) superficial or deep, and fascial closure. Additional outcomes were operative time (OT), readmission, length of hospital stay (LOS). We performed sensitivity analysis to explore reasons for heterogeneity and outliers, and a proportional meta-analysis of conversion during rTAR. We performed a meta-regression exploring the relationship of BMI, hernia defect and mesh width rTAR/oTAR with the analyzed outcome within each study

Results: 503 studies were screened and seven studies were ultimately included. Our sample totaled 780 patients, of which 298 (38.2%) underwent rTAR. Defect width ranged between 8.7 to 13.5 cm for rTAR and 10 to 13.5 cm for oTAR. Mean mesh area ranged from 66.9 to 980 cm2 and from 51.3 to 1344 cm2 for rTAR and oTAR respectively. We found lower overall complications (9% versus 24.6%; RR 0.43; 95% CI 0.26 to 0.73; P< 0.01) (Figure 1) and intraoperative complication (5.9% versus 9.1%; RR 0.44; 95% CI 0.22 to 0.88; P=0.02) rates for the rTAR group. There was no difference in fascial closure between the groups (99% versus 94.6%; RR 1.05; 95% CI 0.99 to 1.11; P=0.11). rTAR presented lower SSI rates (2.5% versus 7.8%; RR 0.33; 95% CI 0.13 to 0.8; P=0.01). No differences were found in SSO (16.3% versus 13.7%; RR 0.87; 95% CI 0.51 to 1.48; P=0.6) or SSOPI (5.4% versus 8.9%%; RR 0.5; 95% CI 0.22 to 1.15; P=0.1) rates. No statistically significant differences were found in superficial SSI (0.76% versus 3%; RR 0.36; 95% CI 0.07 to 1.75; P=0.21) and deep SSI (0% versus 4.2%; RR 0.23; 95% CI 0.02 to 3.12; P=0.27). (Figure 2) Open surgery presented a lower OT (MD -67.7 minutes; P< 0.001), but robotic surgery showed a reduced LOS (-3.9 days; 95% CI -4.8 to -3.1; P< 0.001). (Figure 3) No differences were found in readmission and 1 year recurrence rates. The proportional meta-analysis showed a conversion to open rate of 6.4 per 100 patients (95% CI 3.3 to 12 patients) during rTAR. Meta-regression presented no statistically significant influences of rTAR/oTAR mesh width and defect width relations and BMI, despite the analysis was limited by the low number of studies.

Conclusion: Robotic TAR may be associated with lower intraoperative and postoperative complications, lower SSI, shorter LOS, and longer operative times when compared to oTAR. Given the limitations of the included studies, randomized trials are needed to better evaluate the impact of the robotic-assisted surgery for complex abdominal wall reconstruction.


Study
Robotic Events Total
Open Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Bittner 2017 5 26 23 76 37.5% 0.64 [0.27; 1.50]
Dewulf 2022 8 90 21 79 48.4% 0.33 [0.16; 0.71]
Martin-del-Campo 2017 0 38 13 76 3.5% 0.07 [0.00; 1.21]
Reeves 2020 2 13 3 13 10.6% 0.67 [0.13; 3.35]
Total (95% CI) 15 167 60 244 100.0% 0.43 [0.26; 0.73]
Heterogeneity: Tau² < 0.0001; Chi² = 3.03, df = 3 (P = 0.39); I² = 1%
Test for overall effect: Z = -3.11 (P < 0.01)
0.01 0.1 0.5 1 2 10 120
Robotic Open


Study
Robotic Events Total
Open Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Bittner 2017 1 26 2 76 14.7% 1.46 [0.14; 15.46]
Dauser 2020 0 16 1 10 8.5% 0.21 [0.01; 4.74]
Dewulf 2022 3 90 10 79 51.8% 0.26 [0.08; 0.92]
Martin-del-Campo 2017 0 38 5 76 9.9% 0.18 [0.01; 3.18]
Nguyen 2021 1 27 2 16 15.2% 0.30 [0.03; 3.01]
Total (95% CI) 5 197 20 257 100.0% 0.33 [0.13; 0.80]
Heterogeneity: Tau² = 0; Chi² = 1.91, df = 4 (P = 0.75); I² = 0%
Test for overall effect: Z = -2.43 (P = 0.01)
0.005 0.1 0.5 1 2 10 30
Robotic Open


Study
Total Total
Weight
MD
95% CI
Mean Difference IV, Random, 95% CI
Abdu 2020 95 285 20.0% -1.2000 [-1.7283; -0.6717]
Bittner 2017 26 76 18.6% -3.2000 [-4.2268; -2.1732]
Dauser 2020 16 10 8.3% -8.7000 [-12.6396; -4.7604]
Dawulf 2022 90 79 20.2% -3.5000 [-3.8624; -3.1376]
Martin-del-Campo 2017 38 76 19.1% -4.7000 [-5.5690; -3.8310]
Reeves 2020 13 13 13.8% -3.3000 [-5.5656; -1.0344]
Total (95% CI) 278 539 100.0% -3.6173 [-5.0854; -2.1492]
Heterogeneity: Tau² = 2.7379; Chi² = 74.84, df = 5 (P < 0.01); I² = 93%
Test for overall effect: Z = -4.83 (P < 0.001)
-10 -5 0 5 10
Robotic Open

ePoster Directory

POSTER ABSTRACTS

POD 1. The Analgesic Impact Of Erector Spinae Plane Block In Inguinal Hernia Repair: A Systematic Review And Meta-Analysis Of Randomized Controlled Trials

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Background: The analysis of postoperative pain has gained prominence as an important outcome following inguinal hernia repair (IHR). In this context, various strategies have been employed, including multimodal analgesia based on the Enhanced Recovery After Surgery (ERAS) protocol. One commonly utilized component of these multimodal strategies is nerve blocks. The erector spinae plane block (ESPB), which is an interfascial plane block, boasts low complication rates, can be performed in patients with contraindications for neuraxial blocks, promotes minor hemodynamic changes, and presents fewer associated risks. We aimed to perform a systematic review and meta-analysis analyzing the analgesic efficacy of ESPB for IHR.

Methods: We searched Pubmed, Embase, Cochrane, and Web of Science from inception until April 2024 for randomized controlled trials (RCTs) analyzing the impact of ESPB on pain outcomes following IHR. Titles, abstracts, and full texts were reviewed, and independent reviewers performed data extraction. The primary outcomes analyzed were the Visual Analogue Scale (VAS) of postoperative pain at 2h, 6h, 12h, and 24h postoperatively. We used a 1-point difference as cutoff to clinical relevance on the VAS analysis. As a secondary outcome, we analyzed postoperative nausea and vomiting (PONV) rates. Statistical analyses were done using R software.

Results: The initial search yielded 845 results, of which 11 articles were considered eligible for full-text analysis. After full-text reading, a total of three RCTs were included, comprising 145 patients, of which 66 (45.5%) were submitted to ESPB. Between the included studies, two analyzed minimally invasive IHR, while one analyzed open Lichtenstein technique. We found no differences in VAS pain scores at 2h (MD -0.56; 95%CI [-3.53; 2.42]; P = 0.71) and at 6h (MD -1.13; 95%CI [-2.50; 0.23]; P = 0.1) postoperatively. Also, not clinically or statistically significant differences were found in VAS score for ESPB at 12h (MD -0.96; 95%CI [-1.94; -0.02]; P = 0.051) and at 24h postoperatively (MD -0.19; 95%CI [-0.53; 0.15]; P = 0.28). No statistically significant differences were found in PONV rates between the groups (7.6% vs. 20.3%; RR 0.38; 95%CI [0.14; 1.0]; P = 0.05).

Conclusion: This meta-analysis found no differences in postoperative pain scores or PONV between the ESPB and control groups. More studies are needed to better understand the role of ESPB in patients that underwent IHR.

POD 2. Centralization Of Elective Groin Hernia Repair Can Reduce Recurrence Rates Of Groin Hernia Surgery

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Background: Region Halland centralized the majority of the region's elective groin hernia surgeries through different administrative measures in the health system taken between 2008 and 2012. The aim of this study was to compare the recurrence rates following groin hernia repair of Region Halland before and after centralization.

Methods: Recurrence rates in the Swedish Hernia Register of primary and recurrent hernia repair of the region Halland have been compared between the pre- and post-centralization periods: before 2007 and after 2013. In order to reduce the effect on recurrence of a natural progress of the quality of surgery during such periods, the study used the national average in the respective period as control in a hazard ratio analysis. Changes in the hazard ratio of the risk of recurrence with respect to the national average in the different periods were analyzed.

Results: The hazard ratio for recurrences of primary hernia repair of the region with respect to the national average decreased from 2.0 (CI 1.8-2.3) during 1997-2007 to 0.8 (CI 0.6-0.9) during 2013-2022 (Table 1). For recurrences of recurrent hernia repair, the hazard ratio decreased from 1.4 (CI 1-1.9) to 0.5 (CI 0.2-0.9) for the same periods.

Conclusion: The present study found a reduction in the cumulative risk of recurrence of groin hernia after centralization of elective inguinal hernia repair in a region, therefore centralization of this type of surgery could be a way to improve the quality of inguinal hernia repair.

POD 3. Surgical Management Of Chronic Adductor Longus Tendon Tears: Retrospective Analysis Of Outcomes

A De la Fuente Hagopian, S Farhat, S Guadarrama-Sistos Vazquez, J Harris, S Cervantes, A Echo
Houston Methodist Hospital

Background: Injuries to the adductor tendons comprise more than ½ of the cases of groin pathology, with the adductor longus having the highest incidence of involvement. Repair of the adductor tendons has not been extensively described and it's still controversial but is an important procedure in reconstructing the core following injury. This case series demonstrates the efficacy of adductor longus repair in chronic injuries.

Methods: We reviewed a total of 13 male patients with complete avulsions to adductor longus tendon, with injuries considered chronic by standard definition (>3 months).

Patients presented similar clinical characteristics. The diagnosis was confirmed by patient history, physical examination, and magnetic resonance imaging (MRI). Most patients referred to a pop-like or tearing sensation in the groin area at the time of injury.

A low incision is made in the inguinal crease over the pubic bone with the patient in the frog legged position. The external oblique tendon is opened. The cord structures are retracted to expose the inguinal floor deep and the adductor tendon inferiorly. The proximal tendon is dissected from the compartment. Any scar tissue or heterotopic ossification is removed from the adductor compartment. A lengthening tenotomy is performed along the longitudinal aspect of the tendon, 4-7cm from the pubic bone. Permanent suture (Smith& Nephew MiniTape) is used in a running-locking fashion on the tendon. Scar tissue is removed from the pubic bone prior to the 1.8mm tunnels drilled in the bone. The bone anchors were used to secure the tendon to the bone. Additional suture is used to further secure the anterior surface of the adductor tendon to the pubic bone.

Results: Patients age ranged from 16 to 57 years of age, with a muscle retraction average of 1.5cm ± 1.3cm, observed on MRI, on average patients' injury dated back to 9 months with the maximum time observed of 40 months prior to surgical repair.

Complete relief of symptoms was observed in all patients with return to baseline at an average of 7.6 weeks ± 1.3 weeks reintegration to usual activities, observed in 100% of cohort at 4.5 months.

2 postoperative complications, superficial dehiscence of scar, no intervention required and a seroma that required I&D, no further complications after reintervention.

Conclusion: In patients with chronic complete avulsions, conservative management is usually insufficient and complete recovery and reintegration to sports or usual activities rarely occurs without surgical treatment. The surgical technique described allows for repair of the adductor tendon to the pubic bone and full return to activity in this small cohort of patients.


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POD 4. Lichtenstein Versus Desarda'S Open Inguinal Hernia Repair: An Updated Systematic Review And Meta-Analysis

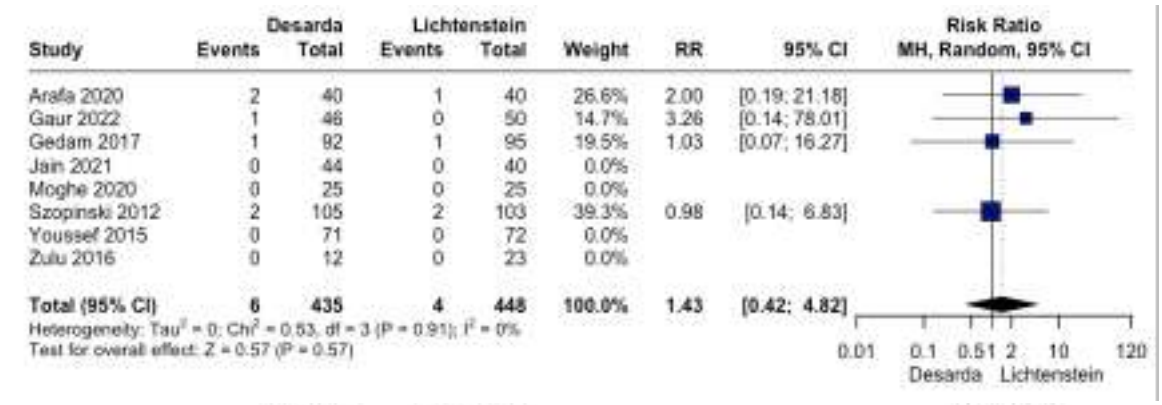
C Silveira, E Sheinin, A Rasador, J Kasakewitch, F Malcher, D Lima
Montefiore Medical Center

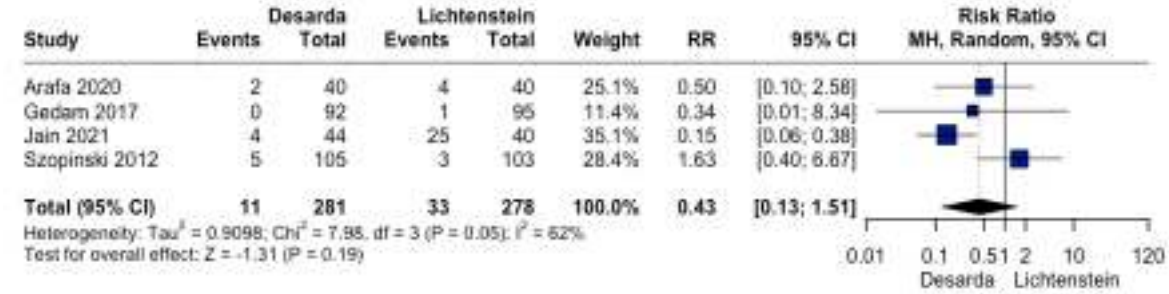
Background: Despite recent guidelines recommending tension-free mesh repair for inguinal hernia repair (IHR), questions persist regarding potential postoperative complications associated with mesh, prompting consideration of alternative techniques such as the Desarda's tissue repair. We aimed to perform a systematic review and meta-analysis comparing Desarda and Lichtenstein techniques for IHR.

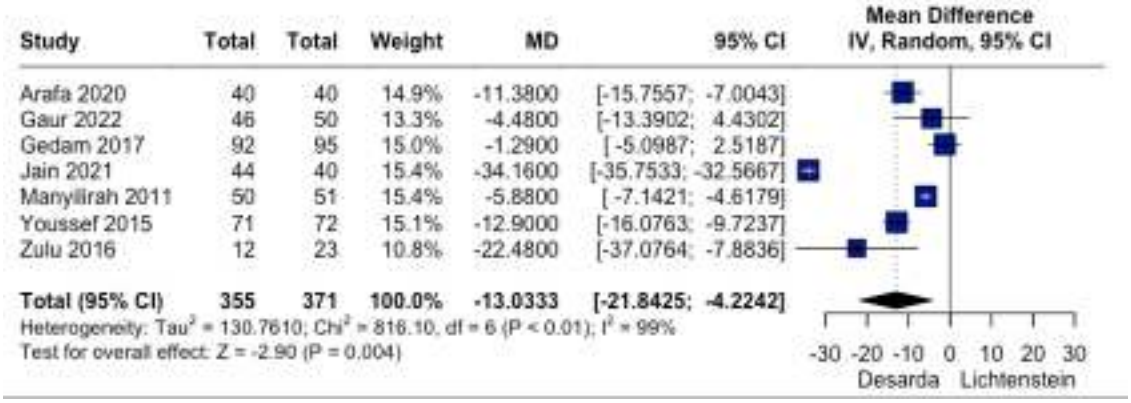
Methods: Cochrane Central, Embase, PubMed, MEDLINE, and Web of Science were searched for studies comparing Desarda and Lichtenstein's techniques for IHR from inception until April 2024. Our primary outcomes analyzed were recurrence, chronic pain, VAS of pain in 1 day, 1 week, 1 month, 3 months postoperatively, and time to return to basic activities, to gait, and to return to work. Secondary outcomes assessed were surgical site infection (SSI), hematoma, seroma, operating time, and hospital length of stay (LOS). Only studies with at least 1 year of follow-up were included in recurrence rate analysis. Data analysis was done using RStudio 4.1.2 Software.

Results: The initial search yielded 33 results, of which the full-text review was done for ten studies. A total of nine studies were included, of which six were RCTs, two were prospective cohorts and one retrospective study. Almost all the analyzed studies, including the RCTs, were performed in developing countries. Our sample comprised 984 patients, of which 485 (49,3%) underwent Desarda's IHR. We found no differences in 1 year recurrence rates between Desarda and Lichtenstein groups (1.38% vs. 0.89%; RR 1.43; 95% CI 0.42 to 4.82; P = 0.57). Furthermore, no differences were found in chronic pain rates (3.9% vs. 11.9%; RR 0.43; 95% CI 0.13 to 1.51.; P = 0.19). No differences were found in VAS scores at 1 day (MD -0.53; 95% CI -1.1 to 0.04; P = 0.07), 1 week (MD -0.33; 95% CI -0.7 to 0.05; P = 0.09), 1 month (MD -0.47 hours; 95% CI -1.27 to 0.33; P = 0.25), and 3 months (MD -0.25 hours; 95% CI -0.97 to 0.46; P = 0.49) postoperatively. Interestingly, Desarda IHR presented a lower time to gait (MD -0.47 hours; 95% CI -0.74 to -0.2; P < 0.001). No differences in time to return to basic activities (MD -1.27 hours; 95% CI -2.83 to 0.29; P = 0.11) or to work (MD -3.55 hours; 95% CI -8.73 to 1.64; P = 0.18) were found. Also, no difference was noted in SSI (1.8% vs. 2.25%; RR 0.77; 95% CI 0.28 to 2.13; P = 0.61), hematoma (4.6% vs. 5.8%; RR 0.79; 95% CI 0.43 to 1.48; P = 0.47) or seroma (3.2% vs. 5.1%; RR 0.7; 95% CI 0.35 to 1.39; P = 0.3) rates. No differences were found in LOS (MD 4.7 hours; 95% CI -0.67 to 10.1; P = 0.4). Desarda's hernioplasty presented a reduced operative time (MD -13 minutes; 95% CI -21.8 to -4.2; P = 0.004).

Conclusion: Our analysis showed no differences between Desarda and Lichtenstein techniques, despite Desarda's repair showed a reduced operative time and postoperative time to gait.


Desarda
Lichtenstein
Risk Ratio
Study Events Total Events Total Weight RR 95% CI MH, Random, 95% CI
Arafa 2020 2 40 1 40 26.6% 2.00 [0.19; 21.18]
Gaur 2022 1 46 0 50 14.7% 3.26 [0.14; 78.01]
Gedam 2017 1 92 1 95 19.5% 1.03 [0.07; 16.27]
Jain 2021 0 44 0 40 0.0%
Moghe 2020 0 25 0 25 0.0%
Szopinski 2012 2 105 2 103 39.3% 0.98 [0.14; 6.83]
Youssef 2015 0 71 0 72 0.0%
Zulu 2016 0 12 0 23 0.0%
Total (95% CI) 6 435 4 448 100.0% 1.43 [0.42; 4.82]
Heterogeneity: Tau² = 0; Chi² = 0.53, df = 3 (P = 0.91); I² = 0%
Test for overall effect: Z = 0.57 (P = 0.57)
0.01 0.1 0.51 2 10 120
Desarda Lichtenstein


Desarda
Lichtenstein
Risk Ratio
Study Events Total Events Total Weight RR 95% CI MH, Random, 95% CI
Arafa 2020 2 40 4 40 25.1% 0.50 [0.10; 2.58]
Gedam 2017 0 92 1 95 11.4% 0.34 [0.01; 8.34]
Jain 2021 4 44 25 40 35.1% 0.15 [0.06; 0.38]
Szopinski 2012 5 105 3 103 28.4% 1.63 [0.40; 6.67]
Total (95% CI) 11 281 33 278 100.0% 0.43 [0.13; 1.51]
Heterogeneity: Tau² = 0.9098; Chi² = 7.98, df = 3 (P = 0.05); I² = 62%
Test for overall effect: Z = -1.31 (P = 0.19)
0.01 0.1 0.51 2 10 120
Desarda Lichtenstein


Mean Difference
Study Total Total Weight MD 95% CI IV, Random, 95% CI
Arafa 2020 40 40 14.9% -11.3800 [-15.7557; -7.0043]
Gaur 2022 46 50 13.3% -4.4800 [-13.3902; 4.4302]
Gedam 2017 92 95 15.0% -1.2900 [-5.0987; 2.5187]
Jain 2021 44 40 15.4% -34.1600 [-35.7533; -32.5667]
Manyilirah 2011 50 51 15.4% -5.8800 [-7.1421; -4.6179]
Youssef 2015 71 72 15.1% -12.9000 [-16.0763; -9.7237]
Zulu 2016 12 23 10.8% -22.4800 [-37.0764; -7.8836]
Total (95% CI) 355 371 100.0% -13.0333 [-21.8425; -4.2242]
Heterogeneity: Tau² = 130.7610; Chi² = 816.10, df = 6 (P < 0.01); I² = 99%
Test for overall effect: Z = -2.90 (P = 0.004)
-30 -20 -10 0 10 20 30
Desarda Lichtenstein

POD 5. Chronic Groin Pain Leading A 34-Year Old To Disability

P Barros, N Pereira, R Pirajá
Oswaldo Cruz German Hospital

Background: A 34-year-old male with a six-year bilateral inguinal pain, at the start as left-sided discomfort without bulging. At first a left inguinal herniorrhaphy was performed using the Lichtenstein technique, although the patient continued to experience the symptoms. After the management with analgesics and anti-inflammatory medications there were no signs of pain relief. With continued pain led to a secondary bilateral inguinal herniorrhaphy. After the second surgery there was an increase of pain, characterized as neuropathic with a burning sensation and radiation to the bilateral testicular regions, showed to us the complexity of his condition. Physical examination revealed positive Tinel's sign at the bilateral external inguinal rings, and nerve mapping indicated hyperesthesia in the territories of the genitofemoral, iliohypogastric, and ilioinguinal nerves. After the findings, a diagnostic bilateral anesthetic block of these nerves provided temporary but complete pain relief, confirming a neuropathic pain associated with nerve injury. A surgical intervention was recommended, involving triple neurectomy and removal of polypropylene mesh, which had potentially contributed to the nerve pain.

Results: The surgical approach included laparoscopic bilateral sectioning of the genital branches of the genitofemoral nerves followed by an inguinotomy for mesh removal and neurectomy targeting the origins of the iliohypogastric and ilioinguinal nerves. Postoperatively, the patient was managed with pregabalin to address residual neuropathic pain, reporting complete resolution of symptoms at the one-year follow-up.

Conclusion: This patient illustrates to us the importance of nerve-related issues in patients with chronic inguinal pain post-herniorrhaphy. Patients may benefit from a better evaluation for neuropathic pain, mostly young one, especially when normal pain relief treatments fail. Surgical intervention, normally being the last resort, can be done if accurately targeted at the involved nerves. Chronic inguinal pain can be a management challenge, particularly in young and active individuals. Early identification of the pain and knowing if it's neuropathic is crucial, as may significantly alter the approach and improve the patient outcomes. This case show to us the potential success of surgical intervention to the specific nerve in alleviating chronic pain and restoring quality of life.

P7. Traumatic Flank Hernia: A Case Study And Literature Review

Q Jones, A Wang, H Shamseddeen
University of California, Davis

Background: Traumatic flank hernia, though rare, pose a surgical challenge given its close proximity to bony prominences and nerves. This results in high rates of recurrence and chronic pain after surgical repair.

Methods: Here, we review the literature on traumatic flank herniae and present our technique for robotic transabdominal preperitoneal approach to repair a right flank hernia after blunt force trauma.

Results: Our case features an excellent view of the abdominal wall and peripheral nerve anatomy. We demonstrate the dissection, mesh placement, and management of nerves in close proximity to the repair. Ultimately, our patient reported excellent short-term outcomes.

Conclusion: Our robotic transabdominal preperitoneal approach to traumatic flank hernia repair provides excellent exposure that allows primary fascial closure, mesh placement, neurectomy, and mesh coverage with excellent short-term outcomes.

P8. Method Of Prevention Of Male Infertility After Prosthetic Hernioplasty

M Shalamberidze, T Gvenetadze
O. Gudushauri National Medical Center

Background: Nowadays, treatment of inguinal hernia is relevant. So even today the search for an optimal operation continues, after which no recurrence is observed. The main requirement of modern herniology is to release the tissues involved in plastic surgery from tension, to follow the "Tension free" principle. Experts of the world agree that tissue stretching is the main cause of relapse. The easiest way to observe this principle was the method provided by Lichtenstein.

Methods: The Lichtenstein method has positive and negative aspects (Obstructive azoospermia and oligospermia). The implant causes morphological changes in the spermatic cord elements because there is close contact between the mesh and the spermatic cord. Therefore, it is necessary to completely isolate the spermatic cord from the mesh in order to avoid the mentioned complications. (Complete isolation method by T. Gvenetadze). This is confirmed by publications, experimental and clinical studies.

Results: In Georgia, since 2000, a simple method of protecting the spermatic cord with its complete isolation from the mesh has been provided and is successfully used for the treatment of inguinal hernia in various clinics.Recently, the experimental studies conducted by Gvenetadze, Shalamberidze and Ardia were completed an similar (negative) results to Lichtenstein's method were obtained. Unlike the experiments conducted in Germany and China, for the first time in the world, the number of spermatozoa in the ejaculate before and after surgery was studied. After Lichtenstein's method, sharp oligospermia was observed, which did not occur after Gvenetadze's method (with complete isolation from spermatic cord mesh).

Conclusion: The complete isolation method provided by Gvenetadze is simple, also it prevents infertility and it is indicated in men of reproductive age and bilateral inguinal hernias. In addition, this method is stronger since the back wall of the inguinal canal is created by transverse fascia, mesh and aponeurosis. The occurrence of relapse is reduced to a minimum, therefore this method is also shown in elderly patients.

P9. Laparoscopic Transabdominal Preperitoneal Repair For A Strangulated Umbilical Hernia

A Thangavelu
Ashwin Hospital

Background: Umbilical hernia is a common pathology and laparoscopic TAPP provides an option closest to a physiologic repair, providing all the benefits of the MAS surgery. Since the mesh is extra-peritonealised the mesh related complications like adhesions and erosions can be avoided. The number of the penetrating fixation required is also less compared to a procedure like IPOM, thus reducing the pain in the post op period for the patients. There is no alteration of anatomy in this procedure unlike an e-TEP RS where the insertion of the PRS is divided on both sides. This procedure also gives us the advantage of performing a diagnostic laparoscopy and reduction of contents under vision..

Methods: We use the standard IPOM ports by gaining access to the abdomen using a Veress needle at the Palmers point. 2 x 5 mm ports are placed in the Lt hypochondrium and LIF. 1 x 10 mm port is introduced in the lumbar region. All these ports are placed around 8 cm lateral to edge of the defect. Peritoneal flap is raised using sharp dissection after reducing the contents. After dissecting adequately we close the defect using intracorporeal sutures. 15 x 15 mesh is fixed to and wall using 2 transfacial sutures and few interrupted sutures made of delayed absorbable material. Peritoneal flap is reapproximated using a delayed absorbable suture.

Results: Patient tolerated the procedure well and was discharged on POD 1.

Conclusion: TAPP is a very versatile procedure which can come in handy for a majority of ventral hernia types. The dissection has to be sharp and gentle. Learning curve is slightly more but once we get familiar to the dissection techniques, then we can apply this procedure to a variety of hernias. This video showcases the feasibility of performing this procedure in an emergency as well.

P10. Answering Commonly Asked Patient Questions About Hernias: Determining The Appropriateness Of ChatGPT Responses

V Nwigwe, Y Novitsky, D Podolsky, A Addo, P George
Columbia University

Background: The appeal of artificial intelligence (AI) has led to the development of many AI-driven tools. ChatGPT is a large language model-based chatbot developed by OpenAI. It has gained quite a bit of popularity since its release in November 2022, and it has increasingly been recognized as a potential source of medical information. This study aimed to assess the appropriateness of ChatGPT responses to commonly asked patient questions about hernias.

Methods: Twenty questions regarding prevention, diagnosis, and management of hernias were created based on our clinical experience and patient information brochures from Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) and American College of Surgeons (ACS). Each question was posed to ChatGPT twice and the responses were recorded. Each pair of responses was graded by three experienced hernia surgeons. Responses were graded as either "appropriate" or "inappropriate" based on their clinical judgment. If there were inconsistencies between the two responses to the same question, they were deemed to be "unreliable".

Results: Preliminary analysis of the first 10 questions performed. 5 answers were deemed appropriate by all three experts. Overall, at least two of three experts rated the answers as appropriate for 90%. Inappropriate answers involved a perception that incisional hernia repairs were considered "routine" operations. One answer was deemed unreliable by all three experts regarding how hernias were treated.

Conclusion: ChatGPT is a largely accurate and reliable source of medical information and can serve as an augment to patient education. Future directions of this study include determining ChatGPT's limitations by asking tough, complex and nuanced questions to "trick" the AI platform.

P11. Dealing With Large Pseudosac In Direct Inguinal Hernias, When To Explore And Reinforce The Defect

H VALENZUELA
Hospital Angeles Del Carmen

Background: dealing with large pseudosac in the context of m3 inguinal haernias may be challenging and come with its own set of indications and considerations. This video shows an example of how to manage them.

Methods: Incision of the large pseudosac, dissecting the cord elements away and resecting the pseudosac to later reaproximate the edges of the transversalis fascia was performed to stabilize and reinforce the MPO

Results: Patient had an uneventful post op outcome.

Conclusion: We believe that large pseudosac management should have indications and considerations of its own.

P12. Extended Totally Extraperitoneal (eTEP) Hernia Repair: Approach Technique

M Simoncini, E Ortega-Goddard, A Luhrs, M Giorgi
Brown University

Background: Extended Totally Extraperitoneal (eTEP) hernia surgery is a minimally invasive surgical technique that can be performed laparoscopically or with robotic assistance. eTEP hernia surgery is typically approached from the lateral abdomen, but can also be performed via a "top-down" or "bottom-up" approach depending on patient anatomy and hernia location. In the lateral approach, the patient is positioned supine and flexed to maximize the space between the costal margin and anterior superior iliac spine. An ultrasound is used to mark the linea semilunaris at the lateral edge of the rectus muscle. Access to the retrorectus space is obtained using the optiview technique just below the costal margin at the edge of the rectus muscle and a total of three ports are placed in the desired hemi-abdomen in the retrorectus space.

In a "Top-down" approach, access is gained similarly and then a proximal cross-over to the contralateral retrorectus space is performed laparoscopically or robotically. Once the upper bilateral retrorectus spaces are developed, one port is placed in the epigastrium lateral to the linea alba, and another port is placed in the contralateral upper abdomen.

In a "Bottom-up" approach, access to the retrorectus space is obtained using the optiview technique in the lower quadrant below the arcuate line with additional ports placed in the lower midline and contralateral lower abdomen.

Conclusion: In conclusion, eTEP hernia surgery is a minimally invasive technique that can be safely performed from multiple different approaches in order to appropriately access and repair varying ventral and inguinal hernias as well as diastasis recti.

P16. rTAPP Abdominal Wall Reconstruction For A Posterior Sheath Dehiscence

J Easter, C Baller
Creighton University, Arizona

Background: Posterior sheath dehiscence is a rare, but dreaded complication of robotic transabdominal retromuscular umbilical prosthetic hernia repair (TARUP). TARUP is one of several minimally invasive techniques to address ventral incisional or primary umbilical hernias. The repair requires dissection in the retromuscular plane with either a transabdominal or total extraperitoneal approach. Posterior sheath dehiscence becomes an interparietal hernia that can occur immediately or after some time. Tension during closure of the posterior sheath is the most common cause. With this video abstract, we demonstrate a robotic transabdominal preperitoneal (rTAPP) repair of a large posterior sheath dehiscence and interparietal hernia after previous TARUP. The semilunar line had been disrupted during the prior operation. We restored the patient's normal abdominal wall anatomy and physiology with multilayered re-approximation of the semilunar line and posterior sheath. rTAPP could be a reliable approach for posterior sheath dehiscence as we demonstrate with this video submission.

P17. Management And Outcomes Of Recurrent Hernias Following Component Separation

J Marable, G Bloomfield, H Shan, B Truong, L Berger, K Li, R Deldar, K Evans, P Bhanot, Y Alimi
Georgetown University Hospital

Background: An estimated 400,000 ventral hernia repairs (VHR) are performed in the U.S. annually. Component separation technique (CST) can aid in achieving tension free closure for large defects, though recurrence rates after CST are estimated between 10-32%. This study aims to describe the management and outcomes of recurrent hernias following CST.

Methods: A retrospective review of patients with recurrent hernias after CST between November 2008 to January 2022 was conducted. Outcomes included the repair methods and subsequent postoperative outcomes.

Results: A total of 16 patients were identified to have hernia recurrence after CST (7.3% recurrence rate). The mean age and BMI were 58.4±11.9 years and 32.4±6.3 kg/m2, respectively. All patients with recurrence underwent another repair (open n=13, laparoscopic n=3). Seven (43.8%) patients underwent repeat CST. The mean defect and mesh size at recurrence were 163.8 cm2 and 255.1 cm2, respectively. New mesh was placed in 15 (93.8%) patients (biologic n=7, synthetic n=8). All patients underwent additional procedures at recurrent repair, most commonly lysis of adhesions (n=13) and scar revision (n=10). Following recurrent repair, six (37.5%) patients had surgical site occurrences including incisional dehiscence (n=5), infection (n=4), hematoma (n=2), and seroma (n=2). Three (18.8%) required further reoperation for infection, dehiscence, and debridement. By mean follow-up of 15.2 months, 13 (81.3%) patients had no further recurrence. Of the three patients who developed another recurrence, two had incomplete fascial closure and had required a bridged repair.

Conclusion: Our findings suggest that successful closure of recurrent hernias after component separation is possible. Though complications remain a challenge, an experienced abdominal wall surgeon can help to optimize patient outcomes.

P18. Evaluating Inguinal Hernia Repair Techniques: A Comparative Analysis Using AI In Literature Search

J Kasakewitch, D Lima, C Silveira, V Sanha, A Rasador, R Nogueira, L Cavazzola, F Malcher, J Mayol
Montefiore Medical Center

Background: This study assesses the reliability of artificial intelligence large language models (AI-LLMs) in identifying relevant literature comparing inguinal hernia repair techniques.

Methods: We employed AI-LLMs chatbots such as Bing Chat AI, ChatGPT versions 3.5 and 4.0, and Google Gemini (former Bard) to search PubMed, Embase, and Scopus databases. These models were used to find comparative studies and randomized controlled trials on inguinal hernia repair techniques. The results were then compared with existing systematic reviews (SRs) and meta-analyses and checked for the authenticity of listed articles.

Results: AI-LLMs screened 22 studies from 2006 to 2023 across eight journals, while the SRs encompassed a total of 42 studies. Through thorough external validation, 63.6% of the studies (14 out of 22), including 10 identified through Chat GPT4.0 and 6 via Bing AI (with an overlap of 2 studies between them), were confirmed to be authentic. Conversely, 36.3% (8 out of 22) were revealed as fabrications by Google Gemini (Bard), with two (25.0%) of these fabrications mistakenly linked to valid DOIs. Four (25.6%) of the fourteen real studies were acknowledged in the SRs, which represents 18.1% of all AI-LLMs generated studies. AI-LLMs missed a total of 38 (90.5%) of the studies included in the previous SRs, while ten real studies were found by the AI-LLMs but were not included in the previous SRs. Between those ten studies, six were reviews, and one was published after the SRs, leaving a total of three comparative studies missed by the reviews. Adding the 42 studies included in the SRs and the three comparative studies identified only by the AI-LLMs, we got a total of 45 studies that would accomplish the SRs inclusion criteria, representing a missing of 6.7% (3/45) of the fitable studies by the SRs.

Conclusion: This study reveals the mixed reliability of AI language models in scientific searches, with models like ChatGPT4.0 and Bing Chat AI efficiently identifying studies, but Google Bard showing a tendency to produce fabricated citations. Emphasizing a cautious application of AI in academia and the importance of continuous evaluation of AI tools in scientific investigations.

P20. Pilot Study: 3D Printing Model For Laparoscopic Inguinal Hernia Repair At The American Hernia Society Meeting

U Figueroa, I Paul, M Inzunza, I Jacubovsky, C Jarry, M Gonçalves, A Pakula, C Ballecer, S Docimo, D Chen, N Quezada, J Varas
Pontificia Universidad Catolica de Chile

Background: Recent evidence supports the safety and efficacy of laparoscopic approaches in groin hernia repair, offering advantages like reduced complications and faster recovery. However, penetration of the technique is often hindered due to the procedure's intricacies and the learning curve associated with it. Structured simulated training has shown promise in skill acquisition for minimally invasive surgery (MIS), but few models demonstrate its validity in laparoscopic hernia repair. This study pilots a 3D printing model of the myopectineal orifice designed to train the transabdominal preperitoneal approach for a laparoscopic inguinal hernia repair aiming to assess its fidelity and potential use for skill acquisition.

Methods: A 3D printed model of the surgical anatomical scenario in which a TAPP repair occurs, including the myopectineal orifice was developed and set-up at the AHS (American Hernia Society) annual meeting, held in September 2023, in Austin, Texas. Surgeons which assisted at the congress voluntarily subscribed to test the model. Participants provided informed consent and completed a pre-training questionnaire before the simulated experience. After reviewing an instructional video, participants performed an entire TAPP procedure using the model. Experts were defined as those who have performed more than 50 repairs by TAPP as the first surgeon. Participants with more than 100 laparoscopic procedures and between 10 and 50 TAPP were considered intermediate and participants with less than 100 laparoscopic procedures or less than 10 TAPP were classified as non- experts. Blinded evaluators (attendees over their learning curve in TAPP and also simulation experts) assessed participants' performances using the modified Objective Structured Assessment of Technical Skill (OSATS) scale and items from the Global Operative Assessment of Laparoscopic Skills-Groin Hernia (GOALS-GH) scale. Additionally, a perception survey was required from participants.

Results: Eighteen participants used the training model, fourteen of them were included in the study after completing both surveys and having recorded their performance. Six (42.86%) general surgeons, 6 (42.86%) general surgery residents, one digestive surgery specialist and one obstetrics and gynecology resident. Regarding the participants' perception of the model, high percentages affirmed its adequacy for identifying the structures of the myopectineal orifice (92.86%), its material realism (78.57%) and its overall usefulness for laparoscopic inguinal hernioplasty training (92.86%). Specifically, participants highlighted its utility for myopectineal orifice recognition, mesh placement (71.4%), and peritoneal flap manipulation (78.6%). Performance evaluations by blinded raters showed overall medians of 10.5 [10-11.5] and 18.25 [17.5-19.25] for GOALS-GH and OSATS respectively. However, no statistically significant differences were detected when comparing self-reported non-experts, intermediate and experts.

Conclusion: The 3D printing model for laparoscopic inguinal hernia repair received a highly positive evaluation. Assessment of performance did not show significant differences between participants' self-reported levels of experience. These findings may be due to a lack of power in the data obtained given the small sample size. It is necessary to reevaluate the efficacy of the model with a robust sample of participants and consider the need for possible improvements or alternative training methods to increase its validity as a training tool.

P21. Evaluating Ilioinguinal-Iliohypogastric Nerve Block For A Matched Sample Of Hernia Patients

M Mainprize, A Svendrovski, D Ezer, G Galant, R Hall, C Paasch
Shouldice Hospital

Background: The purpose of this pilot study was to evaluate the use of ilioinguinal-iliohypogastric nerve block for groin hernia patients. The primary objective was to compare pain medication use between patients receiving an ilioinguinal-iliohypogastric nerve block prior to hernia surgery with those who did not.

Methods: This REB approved study was a pilot retrospective chart review on patients who underwent groin hernia repair from November 14, 2023, to December 20, 2023. This study compared patients who received an ilioinguinal-iliohypogastric nerve block to patients who did not (control) by manually matching 1:1, on 12 demographic and intraoperative characteristics. The variables were American Society of Anesthesiologists physical status classification [ASA], age (±5 years), gender (male/female), body mass index [BMI] (range), smoker (no or quit/yes), mental and physical comorbidities (matching similar and none), chronic pain (yes/no), preoperative Celebrex and Acetaminophen (yes/no), cannabis use (no/yes), as well as hernia type, classification, and repair. Descriptive statistics (frequency/percent or mean/standard deviation) were used to summarize study variables by groups. Comparison between groups was performed using chi-square/Fisher Exact test for categorical and t-test/Mann-Whitney test for numerical variables depending on data distribution. Multivariable regression analysis was used to examine predictors of intraoperative use of fentanyl. All inferential analyses were performed with level of significance 0.05, reporting 95% CI where applicable.

Results: The results included 100 male primary unilateral inguinal hernia patients with 50 matched pairs. Operation was longer in the patient group that received an ilioinguinal-iliohypogastric nerve block prior to hernia surgery, by 9.62±2.65 minutes (p=.001). The ilioinguinal-iliohypogastric nerve block patients had lower recorded intraoperative fentanyl (85mcg less than control, p<.001) and dimenhydrinate (13mg less than control, p<.001) than the control group patients, after conducting univariate and multivariate analysis. No differences were found in postoperative day 0 to 3 for acetaminophen, non-steroidal anti-inflammatory drug, and opioid consumption between the patients who did receive an ilioinguinal-iliohypogastric nerve block prior to surgery and those that did not.

Conclusion: When male primary unilateral inguinal hernia repair patients were matched, the use of an ilioinguinal-iliohypogastric nerve block reduced intraoperative opioids but did not impact postoperative medication consumption.

P22. Laparoscopic eTEP In Giant Type 2 Direct Inguinoscrotal Hernia

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SMBTIMSRC Dhamangaon Nashik

Background: 65/male , BMI-31 with central obesity.
Large inguinoscrotal swelling since 15 years.
Partial reducible swelling without any complications
P/h/o right paramedian exploratory laparotomy for ? appendicular perforation.

Methods: Laparoscopic eTEP with standard 3 port technique

Results: Uneventful post op period.
Patient discharged home on fourth postop day

Conclusion: Though most of the giant hernias are associated with loss of domain, eTEP is safe in giant type 2 inguinoscrotal hernia if done in correct ways.

P23. Robotic Transabdominal Preperitoneal Lateral (L3-L4) Incisional Hernia Repair

P Crosby, A Shmelev, L Swaszek
Stony Brook University

Background: Lateral ventral hernias are a relatively rare entity compared to midline hernias. They pose a surgical challenge both for fascial closure and for mesh overlap given its proximity to bony prominences and retroperitoneal dissection 1. Based on the Chevrel classification they are defined as hernias lateral to the rectus muscle sheath, with L3 (iliac) - L4 (lumbar) hernias located between a horizontal line 3 cm below the umbilicus and the inguinal region and latero-dorsal to the anterior axillary line respectively 2. Several approaches have been described for their repair, including open, minimally invasive, and hybrid, with both primary and mesh reinforced repairs, some including bone anchoring for defect closure and mesh fixation 3,4. Here we present a robotic transabdominal preperitoneal (TAPP) repair of a hernia superior to iliac crest. We used a multi-layer plication of the hernia sac to obliterate it and recruit the edges of the anterior fascia.

Methods: The patient was an 80-year-old male with well controlled comorbidities. He had a symptomatic 6 cm wide right lateral incisional hernia (L3-L4), after an open fixation of a right iliac crest fracture. The surgery was performed in a left lateral decubitus position with three robotic trocars along the right rectus. The flap was developed in preperitoneal and pre-transversalis planes laterally to the psoas and inferiorly to myopectineal orifice. After the incarcerated retroperitoneal fat was reduced, the pseudosac was plicated with several layers of #1 non-absorbable barbed suture, allowing us to not only to obliterate the cavity and decrease the chances of seroma, but also to sequentially recruit the edges of the retracted anterior fascia for a more robust fascial closure. A 20 x 22 cm heavy-weight polypropylene mesh was placed in the sublay pocket and secured with absorbable sutures. The flap was closed with absorbable barbed suture.

Results: The surgery was uncomplicated, and the patient was discharged the next morning. He had an excellent functional outcome on 2 weeks post-op clinic visit.

Conclusion: We presented a robotic transabdominal preperitoneal approach for repair of a right lateral incisional L3-L4 hernia repair with mesh.

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P24. Sciatic Hernia Repair

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The University of Texas at Austin Dell Medical School

Background: Sciatic Hernias are infrequently encountered and present unaccustomed anatomical challenges during surgery. They also carry a high rate of strangulation. We present a case of a 69 year old female found to have a sciatic hernia on CT scan. Intraoperatively the patient was found to have multiple pelvic and groin hernias. We present a video presentation of our robotic sciatic hernia repair.

P25. Utility Of Drains In Abdominal Wall Reconstruction: Outcomes And Best Practices

M Koss, A Patel, A McDaniel, W He, M Lin, S Hansen
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Background: Diligent post-operative care following open abdominal wall reconstruction is necessary for a satisfactory outcome. One factor known to decrease seroma formation is the use of subcutaneous drains. In the literature, drains are reported as being a contributing factor to length of hospitalization; however, there exist no clear criteria on when to place drains or when to remove them. The purpose of our study was to determine whether or not the use of subcutaneous drains helped decrease the incidence of post-operative seroma, hematoma, infection, or wound dehiscence.

Methods: A retrospective cohort study was completed examining drain practices and outcomes for 65 patients (52 with drains and 13 without drains) meeting the inclusion criteria, who were undergoing abdominal wall reconstruction at a single academic medical center. Data collected included duration of drain placement, criteria for removal, and outcomes.

Results: Our cohort of 65 patients was 55% male, 45% female, and had an average age of 65 years. Drains placed were Jackson Pratt (JP) drains of varying sizes, and were all placed in the subcutaneous layer. One to four drains were used. Drains were in place for an average of 14 days and a median of 12 days. Among the 65 patients assessed, infection incidence was 13.5% for the drain placement group and 23.1% for the no drain placement group. Seroma incidence was 9.6% for the drain placement group and 30.8% for the no drain placement group. Hematoma formation was 3.8% for the drain placement group and 0% for the no drain placement group. Hernia recurrence was 9.6% for the drain placement group and 0% for the no drain placement group. Post operative infection within 1 month was 5.8% for the drain placement group and 15.4% for the no drain placement group. There was no wound dehiscence. Patients received drain teaching from inpatient bedside nurses so patients would feel comfortable taking care of drains on their own. Patients were also allowed to shower while drains were in. Drains were also removed when output was 30 cc or less for three consecutive days.

Conclusion: Drain practices for complex open abdominal wall reconstruction led to reduced incidence of infection and seroma compared to those without drain placement. Hematoma and hernia recurrence were found in the drain group but absent in the no drain group. Drain teaching and output monitoring play a crucial role in successful drain practices. Importantly, patients can go home with drains if they are properly educated on how to care for them.

P26. Novel Hybrid Approach To Retromuscular Parastomal Hernia Repair

B Fry, L Schoel, D Huynh, J Shao
University of Michigan

Background: The patient was a 64-year-old man with a history of prostate cancer s/p prostatectomy and radiation in 2005, angiosarcoma of the bladder with intrapelvic metastasis s/p chemotherapy and cystectomy with ileal conduit and abdominoperineal resection in 2020. He presented to clinic with a midline incisional hernia and symptomatic parastomal hernia around his left-sided end colostomy.

Methods: We employed a hybrid open and robotic approach to the parastomal hernia repair and fully robotic repair of the midline incisional hernia. After mobilizing the colostomy and placing back in the abdomen, the anterior fascia of the parastomal hernia was closed in an open fashion with 0-PDS figure of 8 sutures. We then switched to a robotic approach and created a peritoneal flap. After lateral, inferior, and medial dissection of the preperitoneal space, a unilateral transversus abdominus release was performed on the left side. The midline hernia defect was closed posteriorly with 2-0 V-Loc in a progressive fashion. The posterolateral aspect of the parastomal hernia was also closed with 2-0 V-Loc. Peritoneum was also closed around and tacked to the end colostomy. A 15 x 15 cm mesh with a lateral slit for the stoma was secured in preperitoneal space with fibrin glue. The abdomen was desufflated, skin incisions closed, and the colostomy matured.

Results: The patient did well postoperatively and was discharged on postoperative day 1. He continued to do well at 2 week and 3 month follow up, with surveillance MRI at 2 months showing intact incisional and parastomal hernia repairs.

Conclusion: This hybrid approach to a parastomal & incisional hernia repair allowed durable anterior and posterior hernia defect closure for the parastomal hernia as well as a minimally invasive posterior component separation with primary posterior incisional hernia defect closure. The patient did well and avoided the morbidity of a multiple open incisions to close his hernias.

P28. A Review Of Post-Operative Care For Ventral Hernia Repair

J Nadaud, J Griepentrog, C McKnight, M Phillips, K Blake
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Background: Postoperative care for ventral hernia repair (VHR) has the potential to improve outcomes if used in an effective manner; however, there are difficulties in achieving this as many aspects of postoperative management lack evidence-based guidelines. This study provides a review of aspects of postoperative care including antibiotic prophylaxis, dressings and negative pressure, abdominal binders, and activity restrictions.

Methods: A literature search using EMBASE and PUBMED was done to include systematic reviews, meta-analyses, RCTs, and guideline papers relating to VHR. There were 388 papers included in the initial search results. After removing duplicates, conference abstracts, and other articles not relevant, there were 193 remaining studies. These were reviewed, and 12 articles were related directly to post-operative recommendations for VHR. These papers were divided into sections relating to antibiotic prophylaxis, dressings and negative pressure, abdominal binders, and activity restrictions.

Results: Postoperative antibiotic prophylaxis in VHR has been discussed in two articles which included 4,834 total patients. One review including 4 studies with 344 total patients supports for use of prophylactic antibiotics to decrease surgical site infection (SSI) rate (NNT=3.4, P< 0.01) with the strongest benefit occurring in subgroups with higher grade hernias and wounds; however, another recognized no significant impact when used broadly. Specifically, in VHR patients with closed suction drains, one study found that antibiotic prophylaxis has not been shown to provide benefit; however, they recognized a need for further studies. While the effectiveness of wound drains in incisional abdominal hernia repair has insufficient evidence to provide recommendations in three studies, there have been five reviews of negative pressure wound therapy (NPWT) in VHR. These reviews have an average of 1037 patients each and four found a significant decrease in SSI, seroma, skin necrosis, and wound dehiscence and the other (a primarily financial analysis) found increased upfront cost with potential cost savings. NPWT may not be needed in all patients but should be recommended in patients with a higher wound risk. One review on abdominal binders provided weak and limited evidence for any changes in outcomes after VHR. One review found limited data supporting specific timelines for activity restriction after VHR. However, the European Hernia Society recommends approximately 4 weeks of restrictions after VHR with an emphasis on consideration of patients' risks.

Conclusion: Although every patient receives postoperative recommendations and care, there is little evidence to provide recommendations specifically for VHR patients. With effective evidence-based implementation of postoperative adjuncts, recommendations have the potential to decrease SSI, pain, and other negative outcomes especially in high-risk patients. Therefore, it is important to continue to evaluate the emerging evidence and develop guidelines for their use.

P30. Mesh Infections In Hernia Surgery - An Emerging Pandemic

A Arora, V Trehan
Command Hospital Chandimandir

Background: The use of prosthetic materials in anterior abdominal wall repair has gone up manyfold over the last few years owing to easier availability, reducing costs and increased level of comfort of surgeons in usage of meshes. The obvious advantage of tension free repairs and a long term reinforcement of abdominal wall has immensely popularised the usage. But as the usage is increasing, so is the incidence of mesh related infections. This paper attempts to analyse the factors behind the mesh infections and the need to standardise the protocol for treatment of mesh infections particularly in Low resource settings.

Methods: A retrospective analysis of prospectively collected data of 30 patients presenting with mesh infections requiring mesh explantations from 2021-2023 was done to study the factors responsible, surgical technique followed and the antibiotic protocol given for the initial treatment

Results: A total of 30 patients were studied who ultimately required the mesh to explanted. 20 cases had undergone laparoscopic inguinal hernia repair (14 TAPP & 6 TEP). 06 patients had presented with discharging sinus from anterior abdominal wall following IPOM repair of ventral hernia. 04 Cases of open inguinal hernia repair had a delayed presentation approx 2 yrs after the index surgery. The mean period of presentation was 9 months after the Index surgery. Patients had undergone varying antibiotic protocols including anti tubercular therapy and no coherence was found in the initial antibiotic therapy given.All patients with lap mesh repairs underwent mesh explantation with laparoscopic technique & mesh as well as any collection was sent for culture. 5 patients had evidence of Non tuberculous mycobacteria while in others no growth was found in cultures. The ratio could not be compared to calculate the actual incidence of hospital infections since the index surgery of these patients had been carried out at other centres.

Conclusion: In view of the increasing use of prosthetic materials, there is a need to reinforce amongst surgeons the importance of following all aseptic protocols. Also due to the varying presentations of the mesh infections, there is a felt need to formalise the approach and revisit the existing protocols to control mesh infections and thereby reduce the need for explanation of mesh and the associated morbidity particularly in the resource constrained settings & LMIC.


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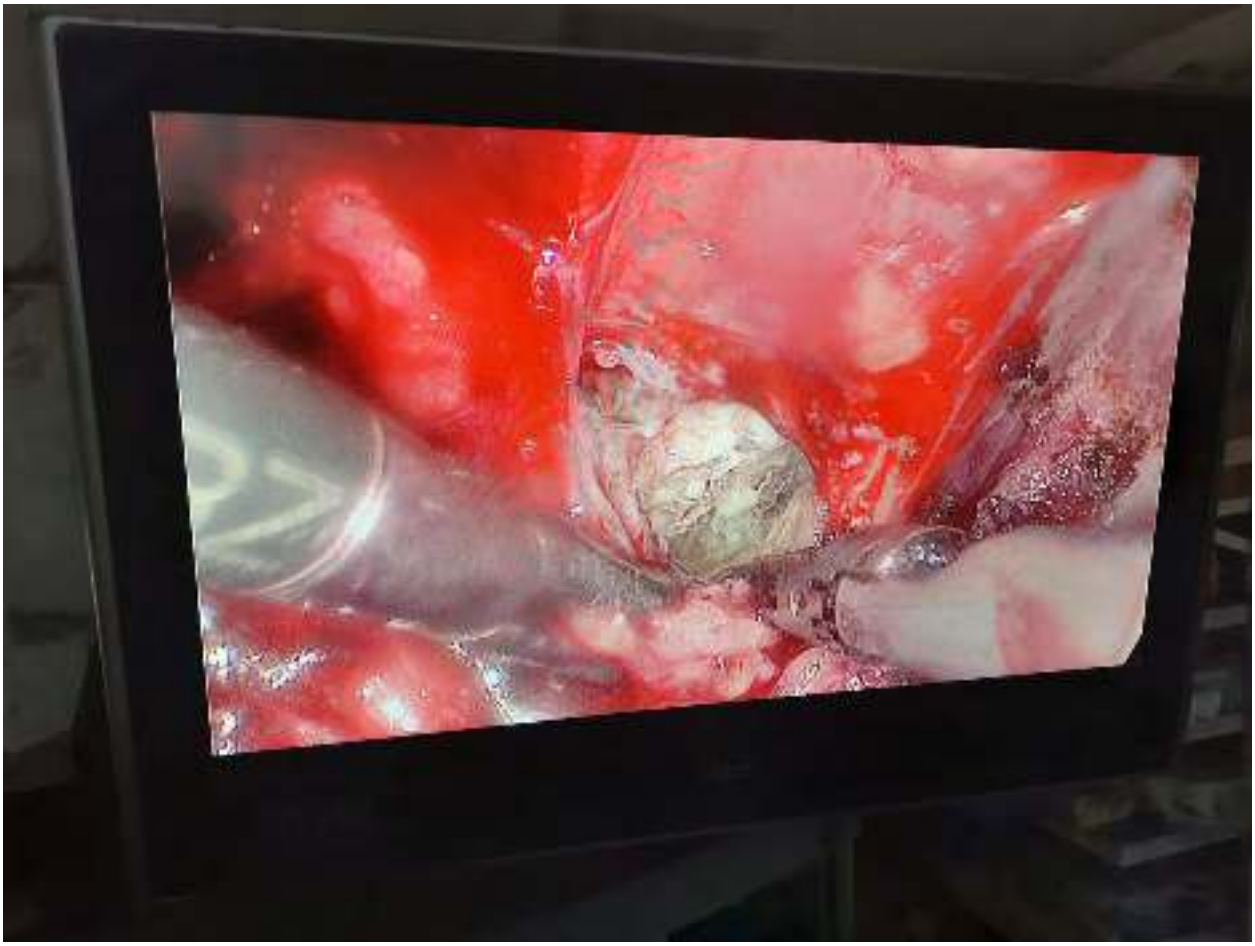

P31. Open Preperitoneal Repair With Bilateral Perforator-Sparing External Oblique Release (EOR) For Massive Loss Of Domain Incisional Hernia

*SAyuso, W Lorenz, A Holland, B Henifor*d
Atrium Health Carolinas Medical Center

Background: The patient in the accompanying video is a 30-year-old male who presented to clinic with a large, loss of domain incisional hernia. The patient had previously undergone a laparoscopic appendectomy, which was complicated by leak from the appendiceal staple line and development of an intra-abdominal abscess. Subsequently, he required multiple reoperations resulting in an open abdomen for a prolonged period. At that time, primary fascial approximation was not feasible, and coverage of his abdomen was accomplished with a split thickness skin graft.

Prior to his hernia operation, the patient lost 30 pounds by following a ketogenic diet and had a BMI of 30 at the time of operation. As much weight loss as possible was promoted to help aid in fascial closure. He did not have any other high-risk comorbidities. Given the fact that he had significant loss of domain, the patient was injected with botox in his bilateral oblique musculature one month prior to the operation.

An open approach was chosen for the operation. A circumferential was made around the site of the prior skin graft, and the mesothelial layer from the skin graft was preserved as the skin was elevated off this mesothelial layer. The dissection was transitioned into the preperitoneal space. Given the dense adhesions in the midline, the abdomen was unavoidably entered and the adhered bowel was freed from the graft. The hernia defect measured 20x23cm. The preperitoneal dissection was carried laterally, down toward the Space of Retzius, and then superiorly all the way up past the xiphoid. The mesothelial layer from the graft and the peritoneum were able to exclude the underlying viscera from the macroporous hybrid synthetic bioabsorbable mesh that was placed (40x42cm). The mesh was secured with transfascial slowly absorbable sutures in the four cardinal directions.

At this point, the fascia was still under significant tension and couldn't be reapproximated over the mesh. In order to achieve fascial closure, the posterior rectus sheath was incised along the length of the incision bilaterally, and a bilateral EOR was performed. The periumbilical perforators were spared during the EOR. This was done by preserving the subcutaneous tissues approximately 2cm above and 5cm below the umbilicus. The external oblique muscle was incised and separated from the underlying internal oblique, and a tunnel was created superiorly to inferiorly lateral to the spared subcutaneous tissues. A Yankauer suction tip was used to connect the superior and inferior portions of the EOR. The component separation allowed for fascial closure. Two subcutaneous drains were placed and negative pressure wound therapy was applied to the closed skin to help minimize postoperative wound complications. Following the operation, the patient was discharged on postoperative day 7 after meeting discharge criteria. He did require a brief readmission and was found to have a small fluid collection on the left lateral side of his mesh, which was drained. The patient was seen more recently in follow-up and is healing well without any evidence of hernia recurrence.

P32. Balloon Dissection For Robotic Totally Extra-Peritoneal (rTEP) Inguinal Herniorrhaphy

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Georgetown University Hospital

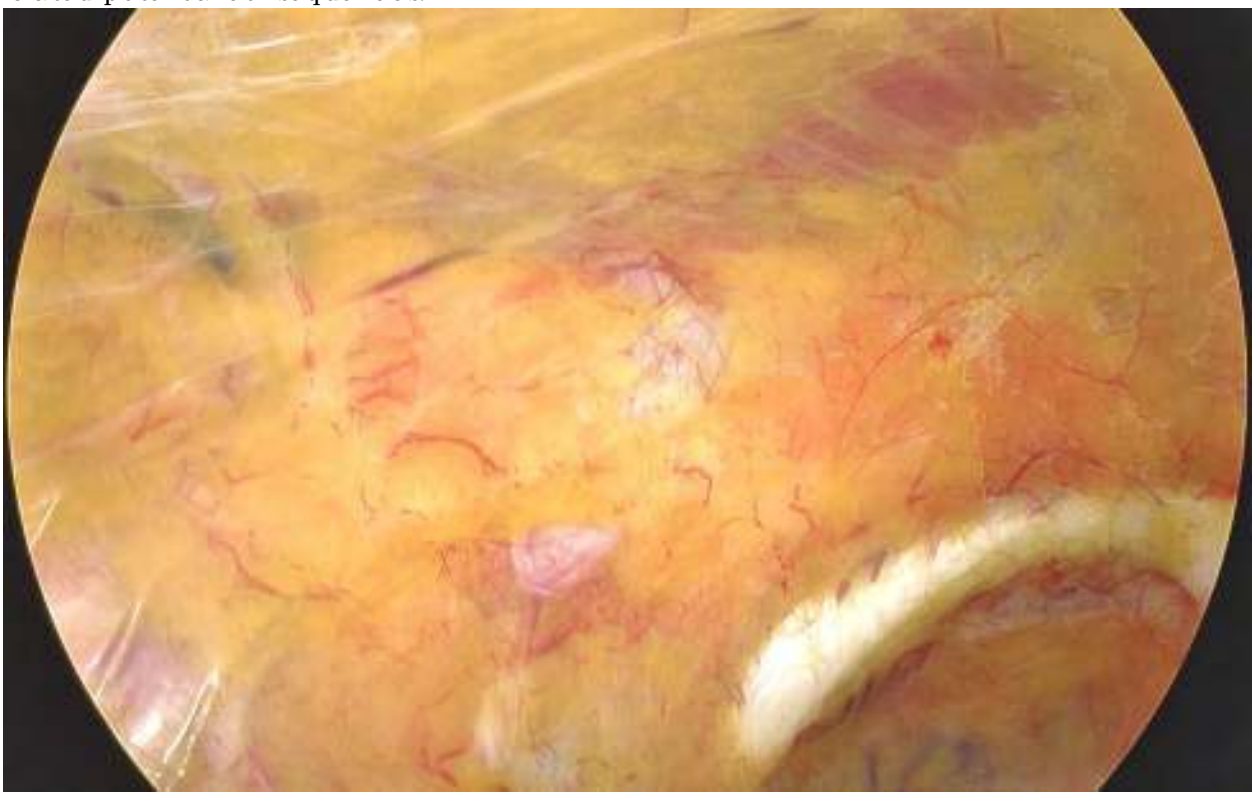
Background: With increasing numbers of surgeons in the United States and worldwide adopting the robotic platform for inguinal hernia repairs, it appears that the rTAPP (Trans-Abdominal Pre-Peritoneal) approach is performed much more frequently than rTEP (Totally Extra-Peritoneal) and taught exclusively to newly trained robotic surgeons. This may be due to the fact that the three trocar placement configuration in the lower vertical midline traditionally used in laparoscopic TEP is not applicable to robotic surgery as it causes collisions between the arms and is cumbersome for bilateral repairs. We present a modified rTEP technique using balloon dissection as a primary tool, which allows for horizontal placement of three trocars at the level of the umbilicus. We report data from a retrospective chart review of a single surgeon's initial experience using this technique.

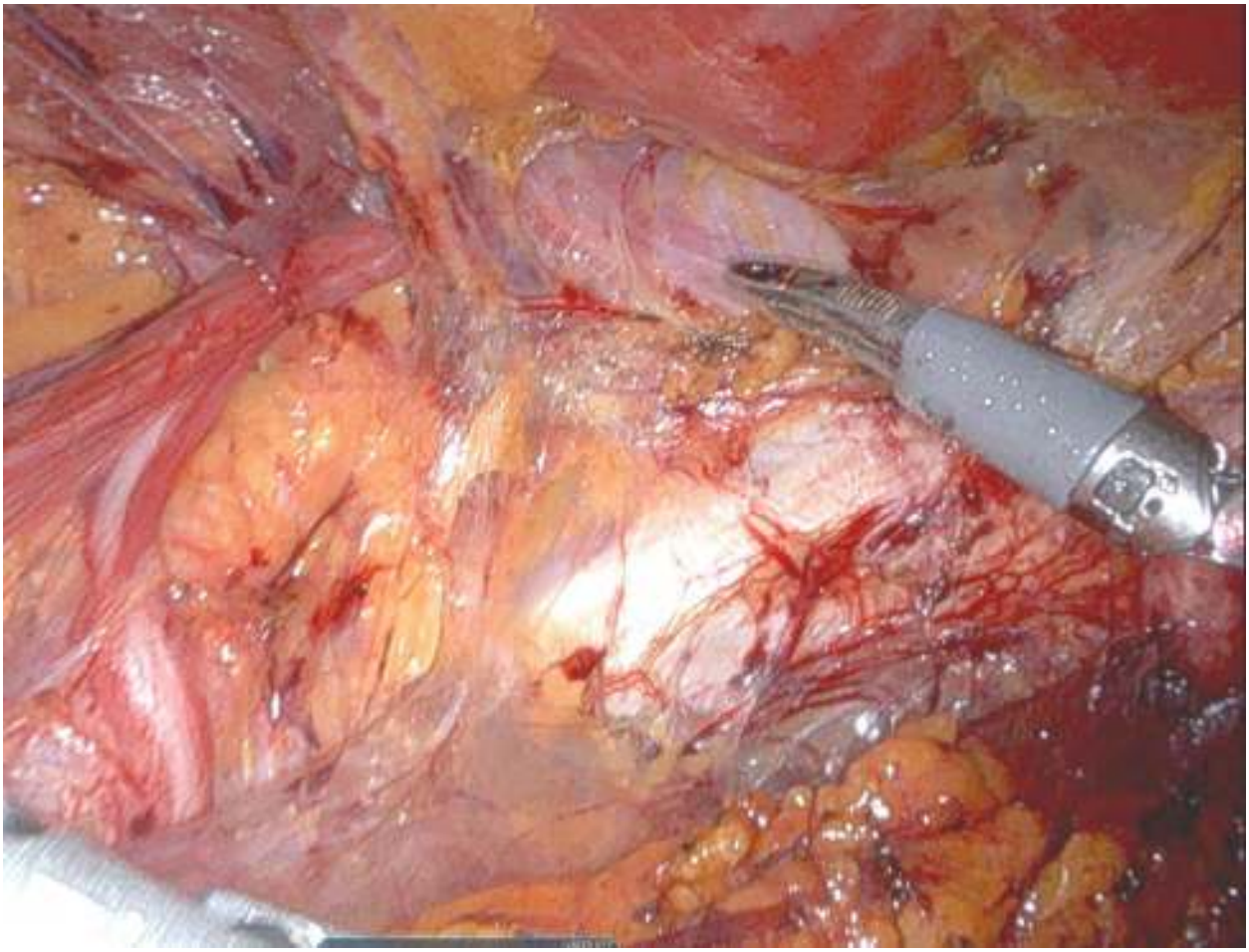
Methods: Between February 2023 and April 2024, 97 consecutive patients (87 male, 10 female) with an average age of 61 years (17-89) underwent rTEP to repair 122 hernias: 25 bilateral (25.8%), 72 unilateral (74.2%), 8 recurrent (6.6%). Our technique involves placement of a balloon dissection device in the retrorectus space through a periumbilical incision. As it is inflated in the parietal compartment, forceful manual counter-pressure is applied on the abdominal wall to achieve full exposure of the contralateral extraperitoneal spaces. Two additional trocars are placed directly into the extraperitoneal space at 6-8 cm distance on both sides horizontally across from the umbilicus. After docking, additional instrument dissection is carried out to fully expose the visceral compartment lateral to the deep epigastric vessels. The critical view of the myopectineal orifice is achieved in all cases. A medium weight polypropylene mesh is secured, either 4 x 6 in (Extra-Large) or 3 x 5 in (Large).

Results: Repaired hernias included 57 indirect (46.7%), 48 direct (39.3%), 4 femoral (3.3%) and 13 mixed (10.7%). Average console time for unilateral was 45 minutes (26-105) and 69 minutes (42-100) for bilateral. There were no conversions to open. There was one serious adverse event (1/97, 1.0%), a bladder tear which was recognized and repaired intraoperatively with an uncomplicated recovery. Average length of follow-up was 30 weeks (3-65) and all patients had at least one postoperative follow-up. There were two persistent seromas (2.1%), one hematoma (1.0%) and 5 cases of urinary retention (5.2%). A single recurrence (1/122, 0.8%) was reoperated 6 months later and is doing well. There was one return to the operating room within 30 days (1.0%) for a strangulated lipoma but no hernia recurrence. There were no cases of testicular injury or persistent testicular pain. 70.1% of patients reported not using their prescribed narcotic analgesics postoperatively.

Conclusion: Our modified rTEP approach using balloon dissection is a reproducible, safe and efficient alternative to rTAPP. It provides excellent visualization of the extraperitoneal spaces, easy manipulation of the wristed instruments, and proper mesh placement. It does not require entry into the peritoneal cavity and the additional steps of incising the peritoneum and suturing it closed. It may be adopted by surgeons concerned with violating the peritoneal space and

related potential consequences.





P34. Complex Repair Of Traumatic Flank Hernia Using A Total Extraperitoneal Approach

N Reedy, R Juza, J Benson
University of Wisconsin

Background: In this video abstract we discusses a total robotic assisted extra-peritoneal approach to repair of a traumatic flank hernia. Our patient is a 35 year old female who suffered a traumatic flank hernia after a motor vehicle crash complicated by infected morel lavalle lesion. In this video we review the relevant anatomy, steps and import positioning methods for unilateral docking and TAR.

P35. EXtra PEritoneal Drainage Of An Infected PreperiTonEal Groin Hernia Mesh With Intraperitoneal Mesh Explanation (EXPEDITE Approach): A Novel Technique

TMISHRA
All India Institute of Medical Sciences Bhubaneswar

Background: Mesh infection following laparoscopic groin hernia is a nightmare for surgeons and patients alike. Recurrent abscesses, sinuses, and fistulae seriously impede the quality of life of such patients. Explanation of the infected mesh is usually quintessential for optimal control of local sepsis and their sequelae. However, this procedure becomes arduous given the difficult anatomical location of the infected mesh. The existing literature in this regard are limited to several case reports, case series and retrospective studies, where there is consensus regarding its removal laparoscopically with little elaboration on the technique of removal. Spillage of the infected content into the general peritoneal cavity while draining the abscess has the potential to make a localized infection generalized. We report a novel technique of the mesh explantation, the EXPEDITE technique - Extra Peritoneal Drainage of an infected preperitoneal groin hernia mesh with Intraperitoneal mesh, for the infected laparoscopically repaired groin hernias.

P36. Performance-Guided Training And Inguinal Hernia Repair

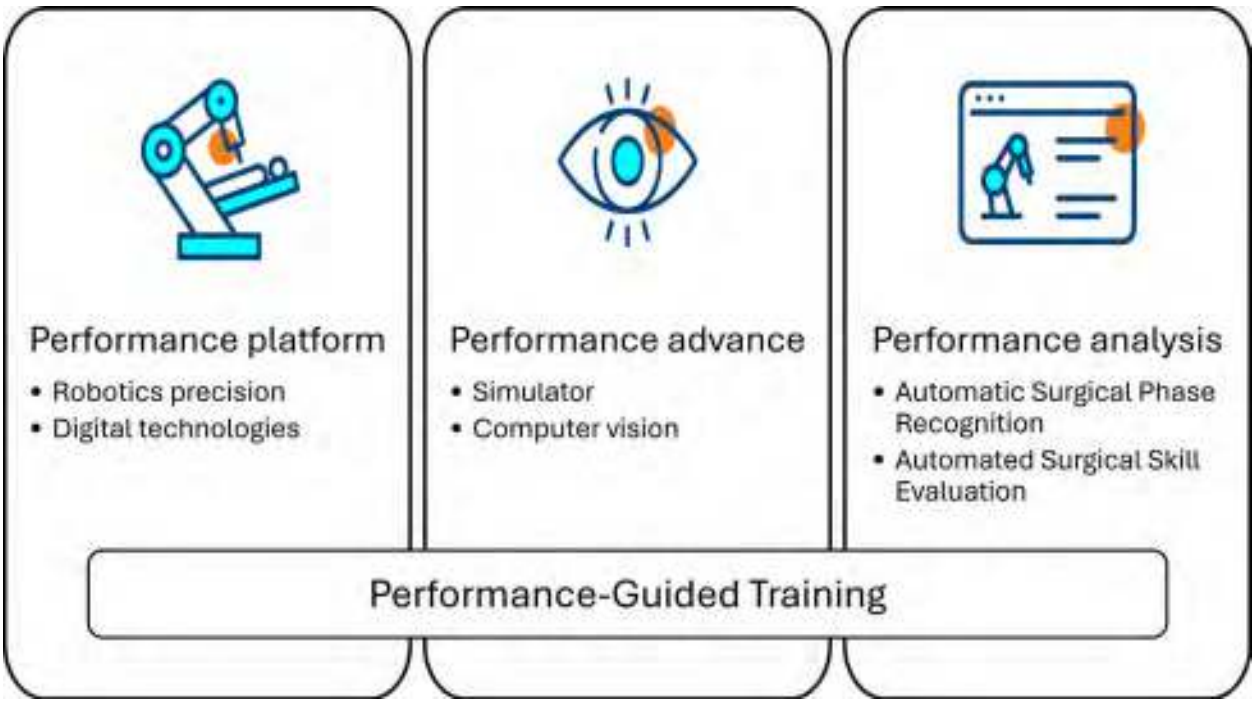
E Chekan, Y Xu, J Spalazzi, S Lazzaretti, Z Thomas
Asensus Surgical

Background: This article introduces Performance-Guided Training (PGT) in the context of Transabdominal Pre-peritoneal Hernia Repair (TAPP) using a literature review.

Methods: Literature searches of all published studies within electronic databases including PUBMED and Google Scholar was completed - 1) free text combinations of performance guided, training, learning, teaching, 2) the current status of digital surgery in the form of automated surgical skills assessment, Virtual Reality (VR) simulators, computer vision technologies and robotic innovations in relation to inguinal hernia repair, and 3) non-medical industries using performance guided training.

Results: A total of 16 studies were analyzed, revealing the following categorical: 5 articles focused on surgical skills assessment related to inguinal hernia repair. Among these, automated performance metrics emerged as promising predictors of hospital stay. 2 articles explored Virtual Reality (VR) simulators in the context of inguinal hernia repair. Specifically, two simulator vendors were identified, showcasing advancements in simulation technology within this domain. 9 articles delved into Computer Vision applications pertaining to inguinal hernia repair. Notably, Automatic Surgical Phase Recognition emerged as a key area of interest, with implications for surgical education and AI recognition of anatomical landmarks, facilitating the identification of critical views essential for surgical training. Additionally, it was found that Performance-Guided Training has been applied in both the aviation and sports industries to respectively improve pilot and athlete performance, highlighting the potential cross-disciplinary impact of this approach.

Conclusion: Non-medical industries have adopted the term PGT to describe the process of skill transfer using digital technologies. It is proposed that the same term, PGT, should be used for surgical education platforms that encompass a combination of digital tools, including robotics, augmented intelligence, machine learning, and virtual reality simulation into existing surgeon training paradigms for both residents and experienced surgeons. PGT should also be used to describe training that incorporates digital technologies and real-time feedback with adaptive adjustment with the goal of being effective, efficient and evidence-based. Looking forward, prospective studies showing the impact of performance guided training on patient outcomes in TAPP inguinal hernia repair are potentially needed to demonstrate the validity of this proposed training methodology.


Performance platform
• Robotics precision
• Digital technologies
Performance advance
• Simulator
• Computer vision
Performance analysis
• Automatic Surgical Phase Recognition
• Automated Surgical Skill Evaluation
Performance-Guided Training

P37. Evaluation Of Versawrap In Muschaweck Minimal Repair For Sportsman Hernia: Outcomes And Implications For Reducing Postoperative Complications

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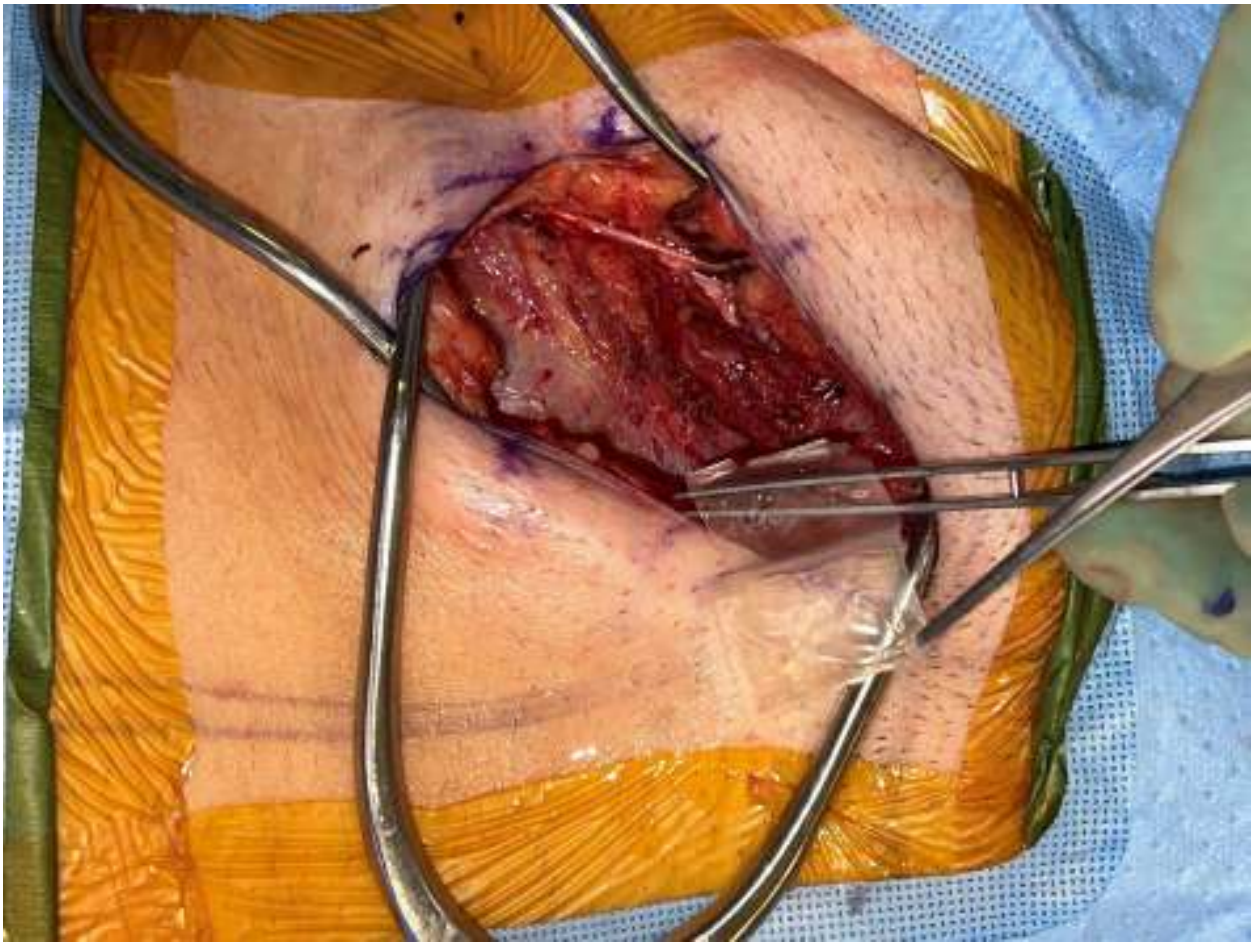
Houston Methodist Hospital

Background: Surgical outcomes in hernia and groin repair, including complications such as adhesions, fibrosis, and recurrence, remain significant challenges for both surgeons and patients. VersaWrap (Figure 1), a plant-based (non-tissue, non-collagenous) bioresorbable hydrogel implant introduced in 2017, is a unique medical device primarily used to protect tendons, ligaments, and skeletal muscles. It can be used to wrap nerves and serves to reduce friction by functioning as a gliding interface, preventing adhesion formation and scarring. Due to its protective properties, VersaWrap is increasingly being adopted by surgeons for various hernia and groin disorder procedures. In Muschaweck minimal repair for sportsman hernia, VersaWrap is used to prevent the adhesion of the cord structures and allow mobility in the postoperative period. This study aims to evaluate the outcomes of patients who underwent Muschaweck minimal repair for sportsman hernia using VersaWrap.

Methods: A retrospective chart review of 86 consecutive patients with sportsman hernia who underwent Muschaweck minimal surgical repair by a single surgeon using VersaWrap from November 2021 to July 2023 was performed (11 Females, 75 Males). Average age 31, range 15-73. Patients presenting with isolated pain in the inguinal area without a hernia were included. Patients were excluded from this study if they had concurrent hip pathology or an actual hernia. The majority of the MRIs demonstrated osteitis pubis or some degree of tendon inflammation. All the patients had a documented bulge and/or internal oblique muscle injury on dynamic ultrasound.

Results: On average 94% of patients reported pain on presentation. 60% of patients had attempted conservative first-line non-surgical treatment including physical therapy, NSAIDS, and/or steroid injections. Surgery was then performed using the Muschaweck technique, by readvancing the internal oblique muscle back to the inguinal ligament and lateralizing the lower portion of the rectus abdominis muscle to the inguinal ligament. VersaWrap was placed around the tendons and cord structures to allow it to glide in the postoperative period and prevent scarring and adhesions, and subsequently prevent postoperative pain and neuritis (Figure 2). On average, patients returned to training or usual activities after 8 weeks, with complete relief of pain in 96% of cases.

Conclusion: This early experience with the Versawrap demonstrates that this bioresorbable hydrogel implant is a safe and promising adjunct in various hernia and groin repair surgeries including the Muschaweck minimal repair for sportsman hernia, reducing postoperative adhesion of the tendons and nerves while promoting prompt functional recovery.



P38. Peritoneal Sac Preservation Technique In Robotic eTEP RS To Avoid Component Separation In W3 Incisional Defects

V Bindal, S Gupta, D Pandey, S Ahmed
Max Healthcare, New Delhi

Background: As the defect size increases beyond 10 cm, a posterior component separation is almost always needed for a tension free closure in eTEP approach. Also, the anterior closure is challenging in minimally invasive environment with very wide incisional hernias. This video depicts a novel approach of peritoneal sac preservation during Robotic eTEP approach to help posterior closure without TAR, and tips to close large anterior defects in MIS fashion using robotic platform.

Methods: This video depicts Robotic eTEP RS for a 43 year old lady with history of multiple laparotomies (Upper paramedian, midline and pfannensteil incisions) with M2,3,4 W3 incisional hernia.

The width of defect was 12 cm and length was 18 cm. Lot of scarring and adhesions was present because of previous laparotomies. CECT abdomen was done and patient planned for Robotic eTEP RS.

Results: The video shows how peritoneal sac can be preserved during eTEP RS, enabling closure of very large hernia defects without component separation.

3 port robotic eTEP RS was successfully done. 30x15 cm macroporous polypropylene mesh was placed.

Patient discharged on post op day 2.

Conclusion: Peritoneal sac preservation is feasible in minimally invasive surgery obviating the need of component separation in many cases. Robotic platform helps save more peritoneum and close very large defects in an ergonomically comfortable way.

P39. Laparoscopic IPOM Plus Versus Robotic TAPP For Primary Ventral Hernias: Our Technique And Outcomes

V Bindal, D Pandey, S Gupta, S Ahmed
Max Healthcare, New Delhi

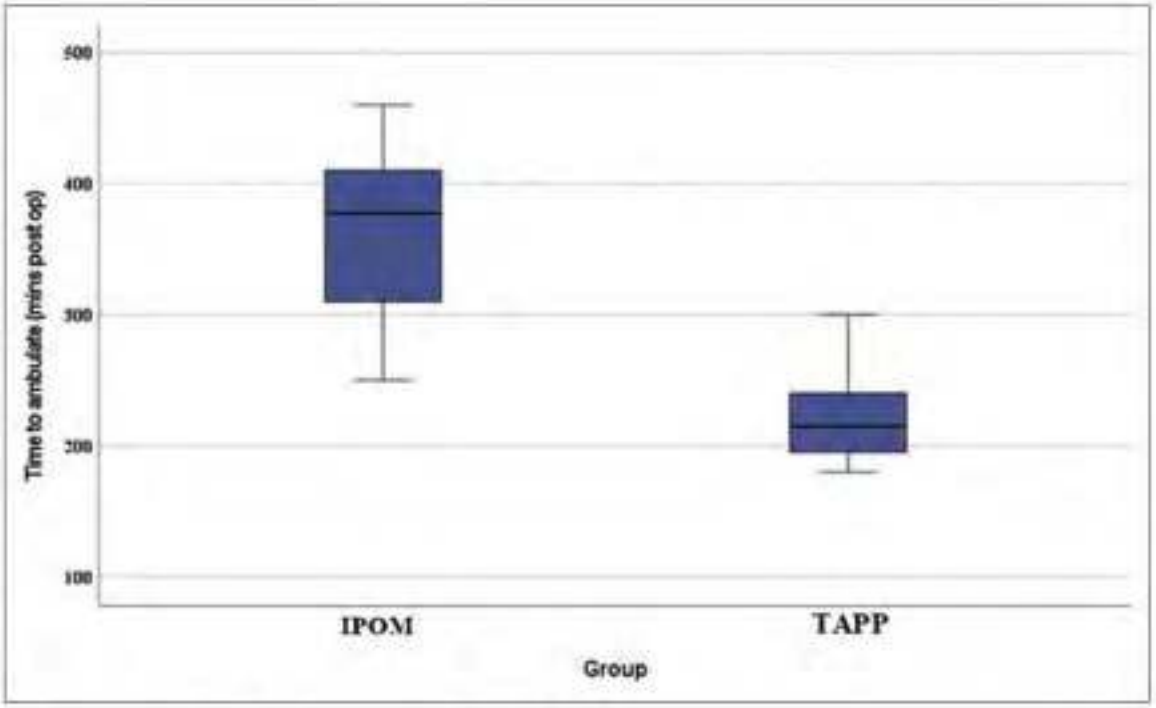
Background: Intra-Peritoneal Onlay Mesh repair (IPOM) still remains the most common approach for laparoscopic repair of small to medium sized hernias worldwide. In this study, we compare our early outcomes of an established procedure i.e., Laparoscopic IPOM Plus to Robotic TAPP (rTAPP) for small to medium sized primary ventral hernia.

Methods: Aims and objectives: To compare laparoscopic IPOM plus with rTAPP in terms of pain score, time to ambulate, hospital stay, time to return to work as well as the expenses.
This is a retrospective analysis of prospectively collected data at our centre between July 2021 to June 2022. Operative time including docking time was recorded. Cost analysis was done in both set of patients. Pain scores were assessed using VAS (Visual Analog Scale) at regular intervals for up to 3 months and then at the end of 1 year. Time to ambulate, return of bowel function and return to work was documented. Any complication or recurrence during the study period was recorded.

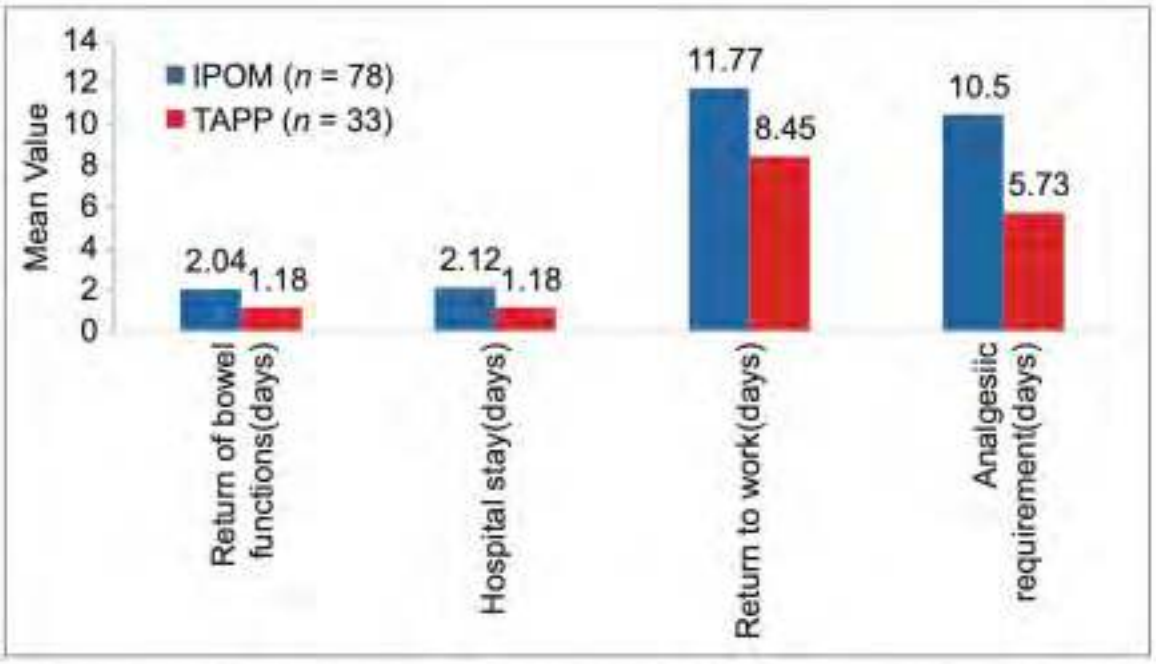
Results: A total of 78 patients were included in IPOM group, and 33 patients in rTAPP group. Mean operative time for IPOM plus and rTAPP groups was 59.00 and 73.55 mins respectively. Mean pain score for IPOM at 6, 12 and 24 hours were 7.35, 6.81 and 5.77 while for rTAPP it was 4.73, 3 and 2.55 respectively. VAS scores at 1 week,1 month and 3 month also showed similar trends. Mean time to ambulate in minutes for IPOM and rTAPP group was 357.69 and 223.64 respectively. Mean Hospital stay in days for IPOM and rTAPP was 2.12 and 1.18 respectively. Mean time to return to work in days was 11.77.and 8.45 for IPOM and rTAPP groups respectively. Expenditure wise, cost of TAPP was more and statistically significant, owing to use of robotic platform. Mean overall cost of laparoscopic IPOM plus and rTAPP in Indian rupees was 187177.69 and 245174.55 respectively.

Conclusion: Robotic TAPP appear an excellent alternative to Laparoscopic IPOM plus, having better outcomes in pain scores and return to work. Larger studies with long term follow up data is further required to reinforce it.

Graph 1: Comparison of pain scores



Graph 2: Time to ambulate. IPOM: Intra-peritoneal onlay mesh repair, TAPP: Transabdominal preperitoneal



Graph 3: Post-operative recovery. IPOM: Intra-peritoneal onlay mesh repair, TAPP: Transabdominal preperitoneal

P40. Exploring Low-Cost Mesh Alternatives For Groin Hernia Repair: A Systematic Review And Meta-Analysis Of Randomized Controlled Trials

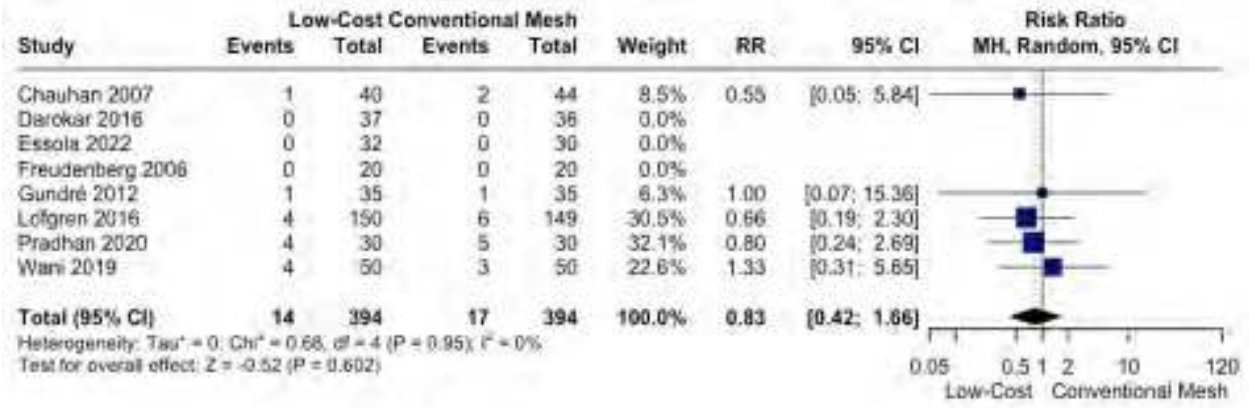
C Silveira, P Marcolin, J Kasakewitch, D Lima, S Mazzola Polide Figueiredo, F Malcher
Montefiore Medical Center

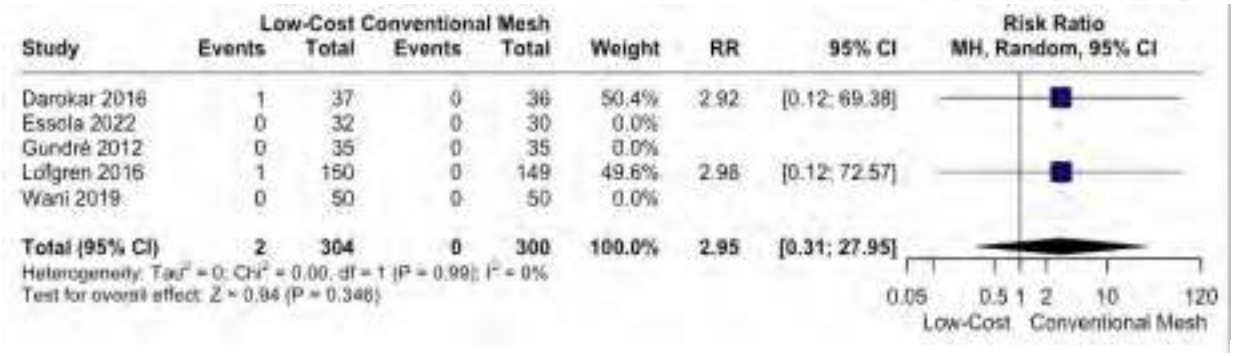
Background: Inguinal hernia repairs (IHR) with mesh are associated with recurrence rates when compared to primary repair. However, the accessibility of meshes worldwide is hindered by their financial limitations. Despite the availability of comprehensive analyses on alternative materials in the literature, recent pooled comparisons between low-cost meshes and polypropylene mesh for IHR are lacking. Moreover, concerns regarding infection risk linked with low-cost meshes, such as sterilized mosquito net meshes, persist. We aim to perform a systematic review and meta-analysis to analyze the efficacy and safety of low-cost meshes compared to polypropylene meshes for IHR.

Methods: We searched Pubmed, Embase, Cochrane, and Web of Science from inception until March 2024 for randomized controlled trials (RCTs) comparing low-cost and standard meshes for IHR. Low-cost mesh was defined as a material non-designed for medical use. Titles, abstracts, and full texts were reviewed. We also searched references from previous systematic reviews, and independent authors perfomed data extraction. The primary outcomes analyzed were postoperative pain, chronic pain, recurrence, surgical site infection (SSI), seroma, and hematoma rates. Chronic pain was defined as pain presented for longer than 3 months postoperatively. SSI was also divided into superficial and deep SSI. Statistical analysis was done using R software.

Results: The initial search yielded 109 results, of which 22 articles underwent full-text analysis and 8 RCTs were considered eligible for inclusion. Combined studies included 788 patients, of which 394 (50%) underwent IHR repair with low-cost mesh. Surgical techniques employed were Lichtenstein repair in 7 studies, and laparoscopic totally extraperitoneal (TEP) repair in 1 RCT. No statistically significant differences for both superficial (2.8% vs. 2.8%; RR 0.98; 95% CI 0.4 to 2.43; P = 0.97), deep SSI (0% vs. 0.31%; RR 0.33; 95% CI 0.01 to 7.91; P = 0.5) and overall SSI (3.6% vs. 4.3%; RR 0.83; 95% CI 0.42 to 1.66; P = 0.6) were evidenced (Figure 1) Also, recurrence rates, evaluated with a minimum follow-up of 1 year postoperatively, were similar between the groups analyzed (0.66% vs. 0%; RR 2.95; 95% CI 0.31 to 27.95; P = 0.35) (Figure 2). Postoperative pain pooled analysis, measured between one and two weeks in four RCTs, showed no differences between the low-cost and standard mesh groups (4.3% vs. 3.1%; RR 1.27; 95% CI 0.56 to 2.89; P = 0.57). Also, no differences were found in chronic pain rates (2.3% vs. 2.3%; RR 0.99; 95% CI 0.14 to 6.84; P = 0.99). Furthermore, no differences were found for hematoma (12.6% vs. 12.6%; RR 0.99; 95% CI 0.67 to 1.47; P = 0.98) and seroma (1.97% vs. 2.33%; RR 0.83; 95% CI 0.29 to 2.4; P = 0.73) rates.

Conclusion: This meta-analysis found similar postoperative complication rates for both low-cost and standard polypropylene meshes following IHR.


Low-Cost Conventional Mesh
Risk Ratio
Study Events Total Events Total Weight RR 95% CI MH, Random, 95% CI
Chauhan 2007 1 40 2 44 8.5% 0.55 [0.05; 5.84]
Darokar 2016 0 37 0 36 0.0%
Essola 2022 0 32 0 30 0.0%
Freudenberg 2006 0 20 0 20 0.0%
Gundré 2012 1 35 1 35 6.3% 1.00 [0.07; 15.36]
Lofgren 2016 4 150 6 149 30.5% 0.66 [0.19; 2.30]
Pradhan 2020 4 30 5 30 32.1% 0.80 [0.24; 2.69]
Wani 2019 4 50 3 50 22.6% 1.33 [0.31; 5.65]
Total (95% CI) 14 394 17 394 100.0% 0.83 [0.42; 1.66]
Heterogeneity: Tau² = 0; Chi² = 0.68, df = 4 (P = 0.95); I² = 0%
Test for overall effect: Z = -0.52 (P = 0.602)
0.05 0.5 1 2 10 120
Low-Cost Conventional Mesh


Low-Cost Conventional Mesh
Risk Ratio
Study Events Total Events Total Weight RR 95% CI MH, Random, 95% CI
Darokar 2016 1 37 0 36 50.4% 2.92 [0.12; 69.38]
Essola 2022 0 32 0 30 0.0%
Gundré 2012 0 35 0 35 0.0%
Lofgren 2016 1 150 0 149 49.6% 2.98 [0.12; 72.57]
Wani 2019 0 50 0 50 0.0%
Total (95% CI) 2 304 0 300 100.0% 2.95 [0.31; 27.95]
Heterogeneity: Tau² = 0; Chi² = 0.00, df = 1 (P = 0.99); I² = 0%
Test for overall effect: Z = 0.94 (P = 0.346)
0.05 0.5 1 2 10 120
Low-Cost Conventional Mesh

P41. Robotic Lateral Hernia Repair: What Are The Outcomes Of Robotic Lateral Hernia Repair So Far? A Systematic Review And Proportional Meta-Analysis

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Montefiore Medical Center

Background: Lateral incisional hernias arise between the Linea semilunares to paraspinal muscles. This type of hernia shows different topographic variations and becomes a challenge to repair. The robotic approach in lateral ventral hernias is something that needs more care from skilled surgeons. We aimed to investigate the outcomes of Robotic lateral hernia repair. In this study, we looked for patient characteristics, types of lateral hernia according to the EHS classification, mesh type, mesh fixation, intraoperative complication, and postoperative outcomes.

Methods: This study followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guideline. To analyze quality risk-of-bias assessment of all included articles, we used the ROBINS-I for non-randomized studies. We performed a single-arm meta-analysis of postoperative complications such as recurrence, surgical site infection (SSI), seroma, hematoma, and readmission rates. Also, we analyzed overall intraoperative complications, conversion to open rates, and also length of hospital stay (LOS). We performed sensitivity analysis to analyze possible outlier studies contributing to heterogeneity. We performed the proportional meta-analysis using the metafor package of R software.

Results: The systematic search found 128 articles in 5 different databases. After 90 records were thoroughly assessed with their full text, a total of 6 reports were finally included, comprising 1,460 patients. We found a cumulative incidence of recurrence of 1.12% (95% CI[0.06; 16.59]; I2 = 67%), a pooled SSI incidence of 3.46% (95% CI[0.77; 14.26]; I2 = 71%), a seroma incidence of 7.69% (95% CI[4.65; 12.45]; I2 = 0%; Figure 5), and a hematoma incidence of 2.48% (95% CI[0.69; 8.56]; I2 = 43%). Also, we found a cumulative readmission rate of 6.29% (95% CI[2.16; 16.92]; I2 = 57%). Furthermore, we found a cumulative incidence of 2.77% (95% CI[0.51; 13.78]; I2 = 50%) of intraoperative complications, and a conversion to open surgery pooled rate of 5.15% (95% CI [1.02; 22.19]; I2 = 0%). Finally, our analysis showed a mean LOS of 0.88 days (95% CI0.68; 1.15]; I2 = 63%). All results presenting with high heterogeneity showed a reduction to 0-2% of heterogeneity after sensitivity analysis.

Conclusion: There are a few articles published on Robotic Lateral Hernia Repair. Moreover, as the first systematic review approaches this subject, we presented the pooled results of all available literature regarding clinical results of robotic approach for lateral hernia repair.

P42. Robotic Suprapubic Hernia Repair With Mesh, Using A Top-Down Transabdominal Retro-Muscular Approach

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Oregon Health & Science University

Background: This is a video case presentation of a 62-year-old female who had a crush injury to the pelvis from a truck accident 5 years ago, which resulted in significant pelvic trauma with bilateral pelvic ring injury and an associated bladder injury. This required multiple orthopedic surgeries, bladder repair with prolonged Foley placement. The patient subsequently developed a small bulge that quickly enlarged to a large bowel containing hernia, measuring 6x7 cm at time of presentation. This was associated with significant abdominal discomfort/pain, nausea and erratic bowel movements. Therefore, the decision to pursue elective robotic repair was made. We started the case by placement of 3 robotic ports in the upper abdomen. Upon entry, the hernia was notable for an incarcerated small bowel, which was released through sharp adhesiolysis. A top-down transabdominal retro-muscular approach was performed. A complete myopectineal orifice dissection was completed. The fascial defect was closed primarily and reinforced with a 15x20 cm self-gripping mesh in the retro-muscular plane. The patient recovered well post-operatively and was discharged home on post-operative day #2. At two weeks, the patient was recovering expectedly without any concerns.

P44. Tackling Intra-Operative Difficulties In Defect Closure In Strangulated Recurrent Inguinal Hernia

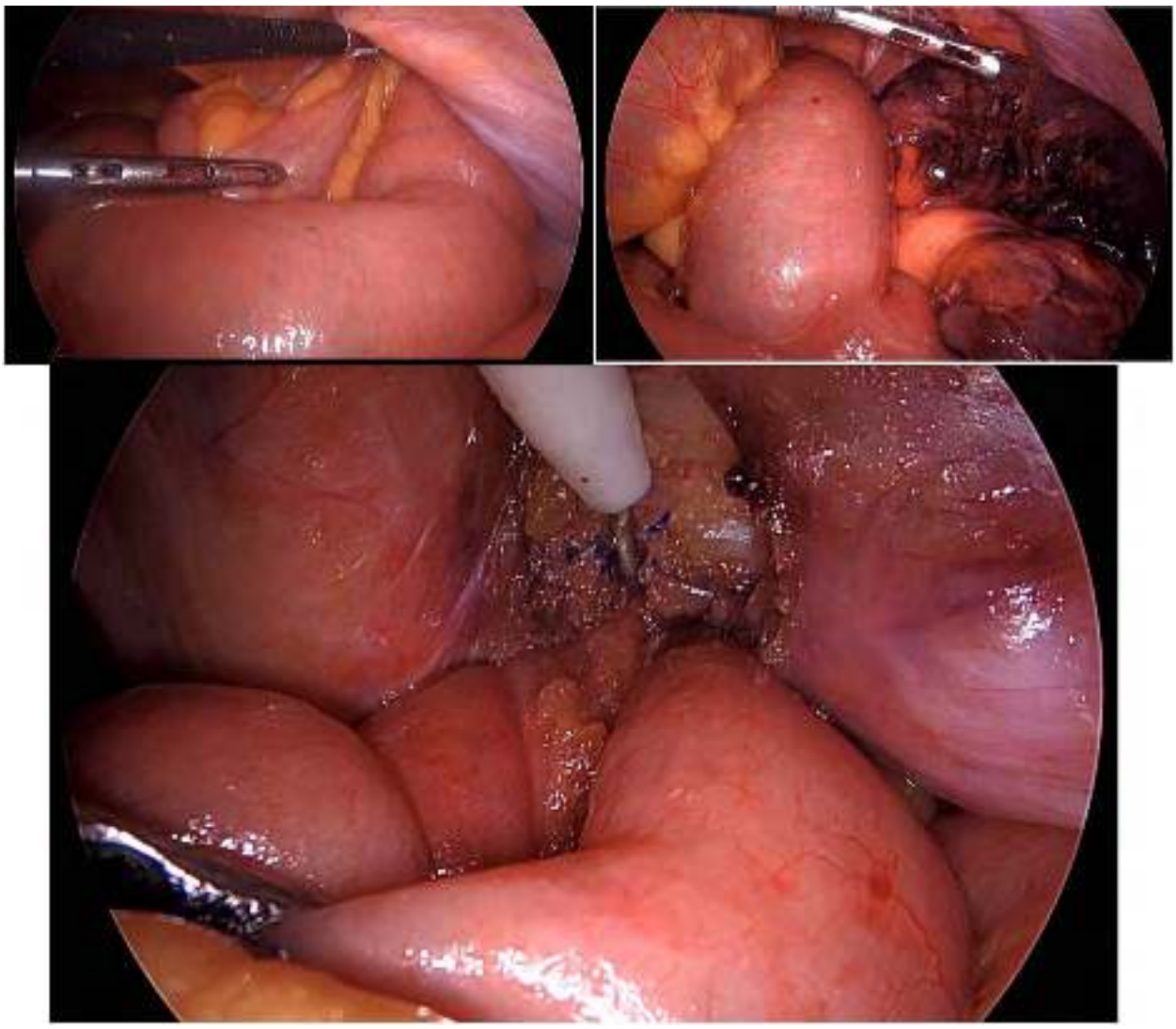
V Patil, N Baste , N Khairnar, N Dabhade
SMBTIMSRC Dhamangaon Nashik

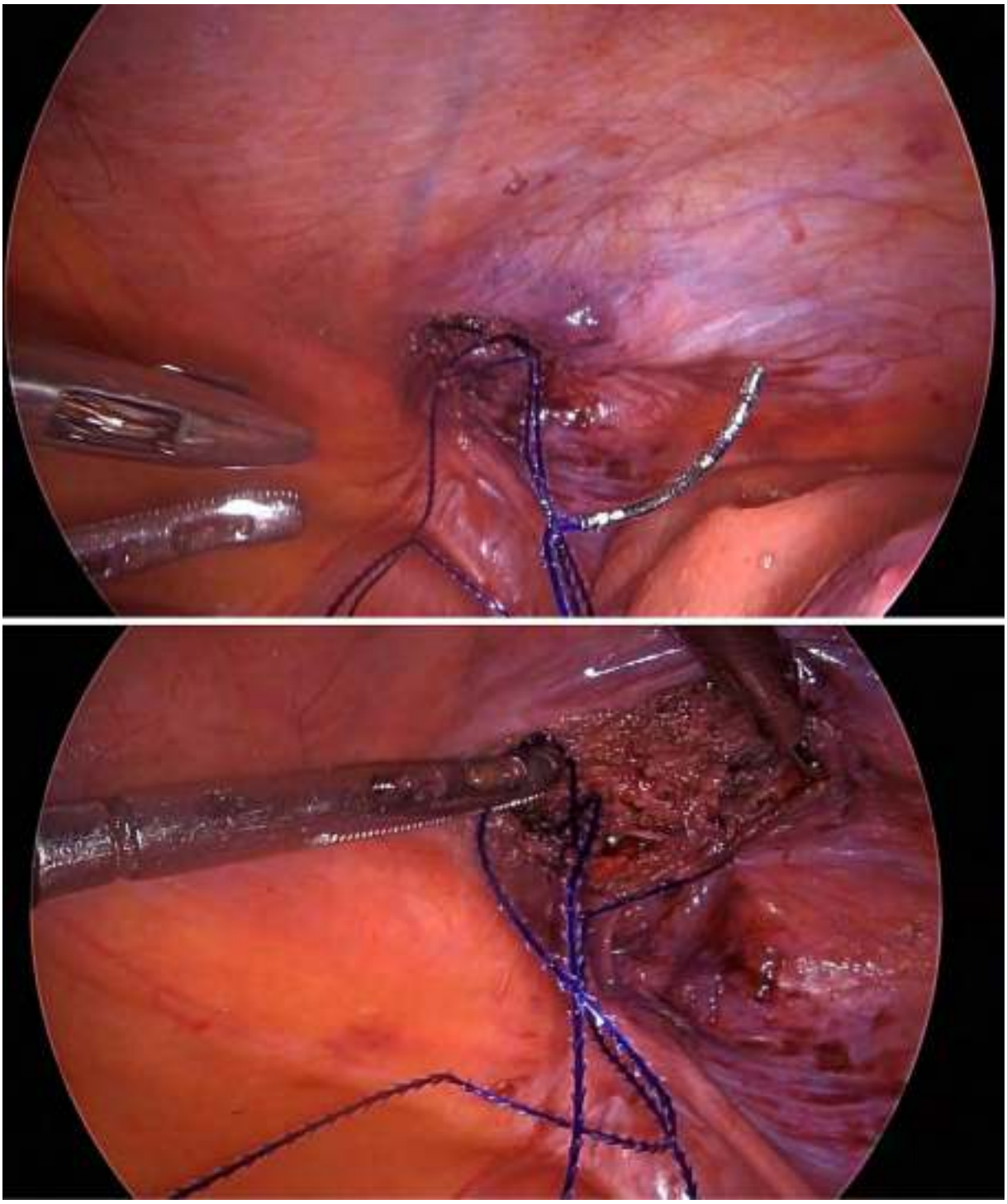
Background: 56 year old male came with complaints of irreducible swelling in right inguinal region, vomiting and constipation since 5 days. Patient had a history of right open inguinal hernia repair.

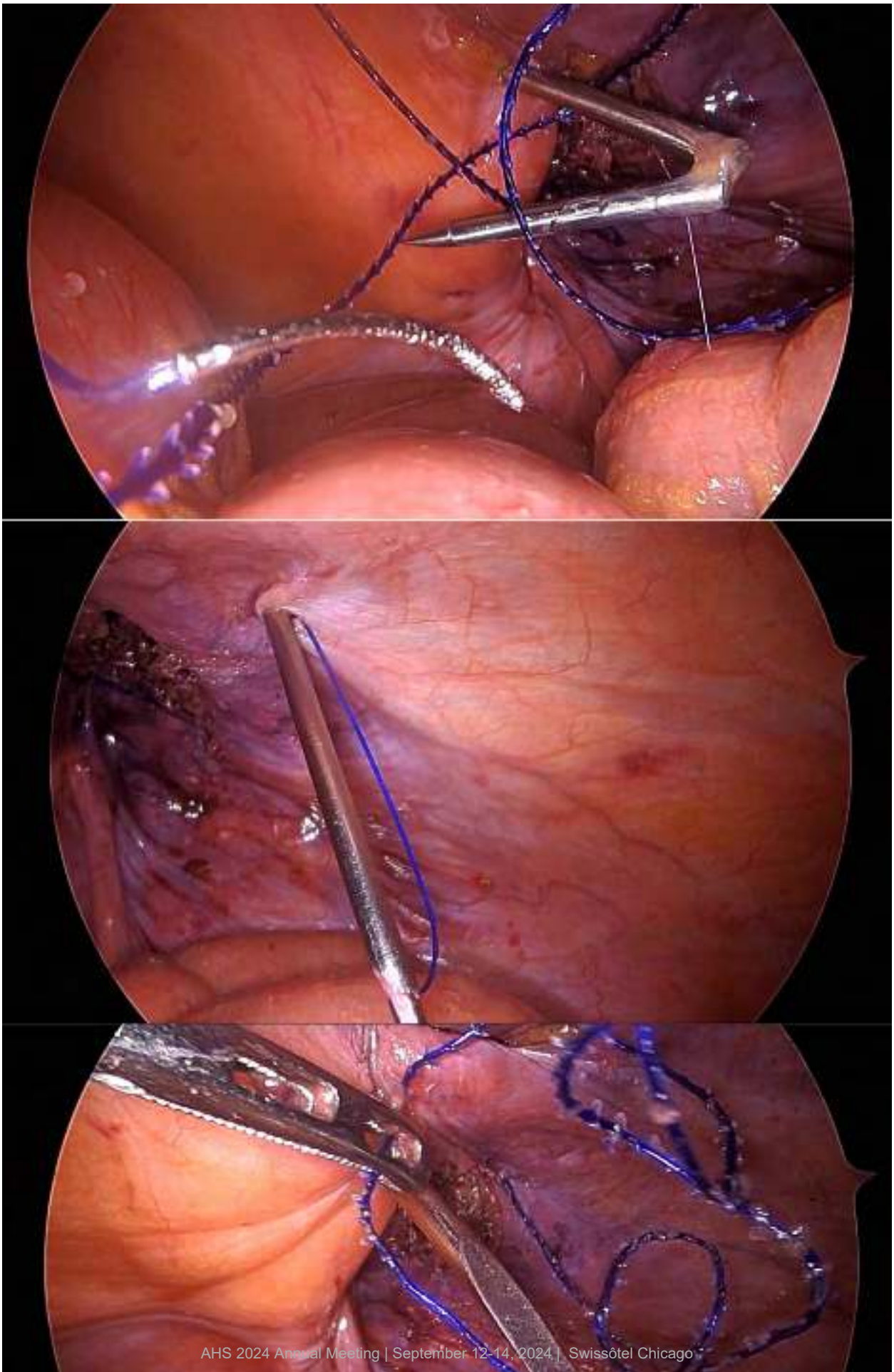
Methods: Patient underwent laparoscopic inguinal hernia repair where previous mesh was cut. Previous mesh fibrosis made the mesh cutting a tedious job. Gangrenous bowel segment strangulated in inguinal defect was resected and anastomosis was done.
Defect closure was performed during which the suture needle was broken after which suture passer was used to close the defect as patient was not affording for a PBT suture.
After unsuccessful attempt at closure with suture passer, roeder's knot was attempted.
After trying all these different methods successful defect closure was performed.

Results: Patient was discharged on post operative day 5. No bulging at the site of hernia on discharge.

Conclusion: In this case the hernia recurred due to protrusion of the bowel loop through the previous mesh, hence mesh had to be cut and defect had to be enlarged to free the strangulated bowel loop from the defect.







P45. Loss Of Domain Hernia With Contamination: An Example Of A Staged Approach Using Mesh Strips

P Vallance, TClements, D Ferguson, J Stulberg, J Holihan, M Wandling, E Chamely, S Naqvi
The University of Texas Health Science Centre of Houston

Background: Approximately 70% of open abdomen's result in an incisional ventral hernia, and almost one third never achieve myofascial closure. Depending on the etiology there is often a concurrent enterostomy or fistula complications. Currently, there is no consensus on how best to manage these contaminated complex abdominal wall reconstruction cases. Single stage operations have been shown to be achievable with comparable morbidity. This also saves the patient an additional surgery. However, these patients tend to be highly selected and should complications occur they can be devastating. In contrast, multi- or two-stage operations separate the gastrointestinal reconstruction from the abdominal wall operation which mitigates a potential infectious complication and allows for further patient optimization.

Mesh strips, initially introduced in 2015, are strips of lightweight microporous mesh used to reapproximate the fascia in place of traditional sutures. These have been shown to increase surface area thereby decreasing tension and tissue pull-through, while also promoting increased tissue ingrowth. Mesh strips have also been used in contaminated cases and shown to have comparable surgical site morbidity and hernia recurrence.

In our attached video presentation, we outline a case of a significant loss of domain hernia with colostomy who underwent a planned two staged procedure. A temporizing herniorrhaphy was performed using mesh strips and a non-definitive interposition mesh with minimal morbidity. Following this, a definitive repair was completed six months later with excellent post-operative functional outcomes. We propose a mesh strip closure is a safe and effective method of hernia temporization during a two-staged colostomy reversal and abdominal wall reconstruction. The use of mesh suture warrants ongoing study and prospective evaluation for use in contaminated fields

P46. The Case For Abdominal Wall Hernia As An Eligible Comorbidity For Patients With Severe Obesity

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University of Arizona College of Medicine - Phoenix

Background: Severe obesity significantly increases the risk of developing abdominal wall hernias. The American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) 2022 indications for metabolic and bariatric surgery (MBS) eligibility recommend treatment of severe obesity as a bridge to abdominal wall hernia repair. However, prevailing trends in insurance coverage do not align with this recommendation. The Centers for Medicare Services Medicare National Coverage Determinations Manual does not include any CPT codes related to abdominal wall hernia, and the tendency for private insurers to follow Medicare's lead is well-documented. Consequently, the impact of abdominal wall hernia in patients with severe obesity, including reduced mobility and quality of life, inability to work, gradual worsening of the hernia, and potential loss of domain, is largely overlooked. Additionally, attempts at hernia repair prior to weight loss are associated with numerous complications, including recurrence.

Methods: We conducted a systematic review of studies retrieved from PubMed, MEDLINE, and Embase databases to explore the relationship between severe obesity, abdominal wall hernias, and outcomes of bariatric and hernia surgeries. Studies focusing on the prevalence, impact, and management of hernias in severe obesity patients undergoing metabolic and bariatric surgery (MBS) were included. Relevant articles were subjected to narrative review. We also examined available resources detailing insurance eligibility criteria for MBS.

Results: The review revealed a substantial body of evidence indicating a heightened risk of abdominal wall hernias, both de novo and incisional, in patients with severe obesity coupled with a paucity of transparency when considering hernias as a qualifying factor for obesity treatment. Existing literature shows that hernias in this population present unique challenges, including increased surgical complexity, need for urgent intervention, and higher rates of hernia recurrence (2.6-fold increased risk or higher) when repaired prior to weight loss.

Conclusion: The findings underscore the urgent need to revise MBS eligibility criteria to include abdominal wall hernia as a comorbidity in severe obesity. Insurance policies must be clarified to ensure that patients with hernias have access to full obesity treatment including medicine and surgery, which can improve outcomes by facilitating weight loss. Addressing both severe obesity and hernias simultaneously will enable healthcare systems to better meet the needs of this vulnerable population and alleviate the burden of obesity-related complications. Further evidence-based advocacy is essential to drive policy changes and promote transparency in coverage criteria.

P47. Impact Of The Change In Ventral Hernia Reimbursement In 2023: A Clinical Quality Improvement (CQI) Project

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University of Iowa Hospitals & Clinics

Background: In 2023, there was a change in how hospitals were reimbursed for ventral hernia repairs (VHR) from payment based on the procedure completed to payment based on the size of the hernia defect. The financial impact of this change in coding has not been investigated. It is hypothesized that this shift would negatively impact the profit margins for participating surgeons.

Methods: This project was completed using a novel, iterative process to measure and improve outcomes. Ventral hernia patients were identified through a clinical, administrative database. In addition to collecting clinical and outcomes data, these patients' specific hospital procedures were matched to the hospital financial database. Datasets were merged to allow for analysis of the financial impact of the new codes.

Results: 512 patients (254 female and 258 male) underwent VHR from 1/2018 to 12/2023. Comparisons between financial outcomes, relative value units (RVUs), and length of stay (LOS) were completed for patients with ventral hernia repair performed between 2018 and 2022 versus those performed in 2023. When comparing the two different reimbursement strategies, it was noted that hernias 10 cms), if the repair was done open or laparoscopically, the net margin was a loss of –($1,486.65) per patient. If the largest hernias were repaired robotically, the net margin was a profit of $2,752.71 per patient. For the medium-sized defects (3 – 10 cm), all approaches resulted in a negative net margin for the hospital, suggesting that the reimbursement for the medium-sized defects is inadequate to accommodate this patient subpopulation's complexity.

Conclusion: The changes in VHR reimbursement in 2023 resulted in a significant decline in the hospital's net margin. After five years of profit for the ventral hernia repair service line, the hospital experienced a negative net margin in 2023. A deeper analysis suggested that using the robotic approach for only the largest hernia defects (>10 cms) could help return the ventral hernia service line to profitability. There was no correlation between RVUs and profitability.

Ventral Hernia Repair	2018 – 2022 (n = 387)	2023 (n = 125)	p-value
Total Revenue	$15,383	$11,867	P=0.0013
Variable Costs	$10,120	$8,524	P=0.0097
Net Margin (P&L)	$692	($119)	P=0.8642
Total Net Margin	$267,804 (5 years) $53,560.80/yr.	($14,875)	N/A
RVU Total RVU Profitable RVU Unprofitable	11.16 10.85 11.50	8.43 8.39 8.47	P=0.0000 N/A N/A
LOS (days)	3 (0 – 30)	2 (0 – 17)	P=0.0070

Table 1: Comparison between financial and other outcomes before and after the change in reimbursement coding for VHR in 2023

P48. A 13-Year Follow Up Of Ventral Hernia Repair: Effect Of Patient, Hernia, And Technical Characteristics On Recurrence

A Sadaka, W O'Brien, K Itani
VA Boston Healthcare System

Background: It is unknown how hernia and patient characteristics affect the approach to ventral hernia repair and subsequently long-term outcomes. The goal of this study is to determine which patient and hernia characteristics are associated with operative approach; and which technical factors, alongside these characteristics, are associated with long-term recurrence.

Methods: In 2011, the New England VA Hernia Registry (NEVAHR) was created to collect detailed operative data of ventral hernia repairs from the operating surgeons from 5 VA medical centers prospectively. Ventral hernias included in this study were midline incisional, epigastric, parastomal, subcostal, right or left lower quadrants (R/LLQ), and Spigelian. No standardized operative approaches were recommended and each surgeon performed the best repair for each patient. Records and imaging were reviewed from date of operation to last VA visit up to March 2024 for the primary outcome of long-term recurrence. Secondary outcomes included skin and soft tissue infections (SSTI), mesh infections, and surgical site occurrence (SSO – i.e. seroma/hematoma). Univariate analysis and multivariate logistical regression of data from the NEVAHR, alongside patient characteristics gathered from VASQIP, were used to determine which factors were associated with recurrence among mesh repair. Given the low number of recurrences for suture repairs, chi-squared analyses and t-tests were used.

Results: A total of 681 ventral hernia repairs were included. There were 407 (49.8%) midline incisional, 182 (26.7%) epigastric, 38 (5.6%) R/LLQ, 26 (3.8%) subcostal, 16 (2.3%) parastomal, and 12 (1.8%) Spigelian hernias. Mesh was used in 589 (86.5%), while 92 (13.5%) were primary suture repairs. Larger defects and a laparoscopic approach were associated with mesh repair ($p < 0.001$). Among mesh repairs, there were 118 (20.0%) recurrences, 52 (8.8%) SSTIs, 101 (17.1%) SSOs, and 13 (2.2%) mesh infections. Comparatively, there were 22 (23.9%) recurrences ($p=0.392$), 9 (9.8%) SSTIs ($p=0.766$), and 10 (10.9%) SSOs ($p=0.129$) among primary suture repairs. Univariate analysis among mesh repairs demonstrated that recurrence was associated with a higher BMI ($p=0.004$), smoking history ($p=0.011$), larger vertical and horizontal defect sizes ($p=0.0014$; $p=0.005$), parastomal hernias ($p=0.002$), SSTI or SSO ($p < 0.001$), biologic mesh ($p=0.005$), and prior recurrence ($p=0.035$). In multivariate regression, recurrence was associated with higher BMI ($p=0.006$), smoking history ($p=0.012$), parastomal and subcostal hernias ($p=0.003$; $p=0.031$), SSTI or SSO ($p=0.007$), and a laparoscopic approach ($p=0.044$). Biologic mesh and smaller mesh fascia overlap were associated with nonsignificant increases in recurrence ($p=0.073$; $p=0.057$). The fixation of the mesh, its anatomical location, and component separation were not associated with long-term recurrence. Among suture repairs, there were no technical factors, nor patient or hernia characteristics, associated with long-term recurrence.

Conclusion: There are several factors associated with recurrence among mesh repairs including BMI, smoking, hernia type, biologic mesh, and post-operative complications. A laparoscopic approach was associated with increased recurrence warranting further investigation regarding technical difficulties, laparoscopic technique, and surgeon experience.

P49. Minimal Access Surgery In Low Resource Settings: Challenges And Solutions

A Arora
Military Hospital Jamnagar

Background: With the reducing cost of the laparoscopy equipments, newer centers are coming up in remote areas. The aim of this paper is to highlight the challenges faced by the surgeon when starting a new centre for minimal access surgery in a low resource settings & how to navigate them.

Methods: The study was carried out over a period of One year in newly established Laparoscopic surgery centre. An analysis of the patient outcomes and various other factors influencing the quality of patient care, operative times and staff involvement was carried out.

Results: A total of 210 cases involving use of Minimal access surgery were done. 150 cases were general surgical procedures and 60 laparoscopic gynaecological cases. Major factors affecting the surgeons comforts and operative times were staff training and continuous stable electricity availability. Improved staff training led to reduction in operative times and fewer intra op near miss events. From patient perspective, there was lesser post op pain and early return to activity

Conclusion: Starting a minimal access surgery centre in a low resource settings requires a considerable commitment and dedication on the part of the surgeon to train themselves and the support staff to ensure good patient outcomes. In the end it is worth the effort owing to improved patient experience and early return to activity.

P50. Laparoscopic eTEP For Aquired Abdominal Intercostal Hernia With Diaphragmatic Hernia With Peritoneal Flap Suturing With Large Mesh Placement

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SMBT IMS RC Dhamangaon Nashik

Background: 83/male, c/o swelling in right lower chest, right hypochondrium and right lumbar region.
P/h/o- chronic cough for 6-8 months. Swelling increases on coughing.
CECTs/o 8*6 cm defect in right anterolateral lower chest inbetween lower ribs with sigmoid colon being its content.

Methods: Laparoscopic eTEP with retrorectus space creation on same side in lateral position.
Attempt failed as trocar enters into peritoneum. 3 failed attempt.
Opposite side retrorectus entry in supine position.
Extraperitoneal space creation on left side
Right retrorectus space created from below upwards.
Unilateral TAR on right side to reach hernia defect. Defect is between lower ribs, one rib being content.
Hernia sac reached. Contents reduces. Rib excised. Diaphragmatic defect identified.
Peritoneal flaps taken from defect, daiphragm and lateral abdominal wall
Peritoneal defect sutured. Large mesh placed.

Results: We successfully avoided IPOM PLUS in this patient as patient was very poor. Total expenditure expected for IPOM PLUS was 1500 dollars. We performed eTEP in 300 dollars, reducing the financial burden on patient.
Small seroma formation in postoperative period which got settled after 3 weeks.

Conclusion: eTEP is safe option to IPOM PLUS in developing countries with poor resources and low socioeconomic strata.
By reducing extra financial burden of composite mesh and tacker we can make poor patients happy.

P51. Enhancing Surgical Interest And Skills In Medical Students Through Cadaveric Transversus Abdominis Release And Robotic Surgical Video Exposure

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University of Central Florida College of Medicine

Background: Surgical innovation has revolutionized both operational techniques and the education of medical students and surgical residents. Robotic surgery has become a significant modality for general surgical procedures including hernia repair. However, how to engage medical students in the operating room and promote interest in potential surgical careers remains a challenge during robotic procedures. Cadaveric surgery performed by medical students may be one approach to pique interests in surgery and promote engagement in the operating room.

Methods: A pilot study was perfomed. 12 first-year medical students who expressed interest in surgery were selected to participate in a cadaveric transversus abdominis release (TAR) procedure after watching surgical videos of an open approach or a robotic approach. Students completed a pre-dissection survey and reviewed a PowerPoint presentation with review of abdominal anatomy. The students were divided into an open TAR video group and a robotic TAR video group. Students watched the assigned video and then worked in teams of three to complete the procedure on a cadaver via an open approach. After dissection, the students viewed the other surgical video. A post-dissection survey was completed. General Surgery and Gross Anatomy faculty were present to aid in the dissection.

Results: The average age of the participants was 23. There were eight male and 4 female students. All 12 students indicated an interest in surgery. 45% of students noted they liked working with their hands as the primary reason for interest in surgery, while 13.6% noted fast results as their primary reason for surgical interest. 75% of students felt somewhat confident in their knowledge of anatomy prior to the cadaveric procedure. After the cadaveric procedure, 75% of students said that the dissection increased their interest in surgery. 66.7% identified faculty support during dissection to be the most helpful resource used during the cadaveric TAR. 66% of students in the final survey commented that their participation in this study positively impacted their feelings about surgery. 100% of students wanted more advanced dissection opportunities like what was done in this study. Our qualitative thematic analysis noted that motor skills and fine manipulation were required to perform the cadaveric procedure and that anomalies within the cadaver made some aspects of the dissection difficult. After watching both videos, students thought that the open surgical approach disrupted anatomy more than the robotic approach. Some students expressed excitement in potential careers with robotic or minimally invasive surgery. Students also commented on their excitement about the opportunity to work together as a team and collaborate.

Conclusion: Providing pre-clerkship medical students with opportunities to engage in advanced cadaveric surgical procedures can cultivate an interest in surgical fields and enhance their desire for more intricate anatomic dissections. Additionally, exposure to robotic surgical videos can initiate interest in minimally invasive surgery techniques. The upcoming phase of this study will focus on expanding participation in advanced cadaveric procedures among pre-clerkship medical students and assessing the influence on their surgical knowledge and interest as they progress into their core surgical rotations.

P52. Ventral Hernia Repair Preoperative Risk Assessment Review

SAhmed, KBlake
University of Tennessee, Knoxville

Background: Ventral hernias represent a complex surgical challenge necessitating thorough preoperative risk assessment to optimize patient outcomes. This systematic review aims to synthesize and analyze the existing literature on preoperative risk assessment tools, patient-specific risk factors, and strategies for surgical optimization in ventral hernia repair (VHR).

Methods: A comprehensive literature search was conducted using PubMed and Embase to include systematic reviews, meta-analyses, RCTs, and guideline papers relating to VHR. There were 388 papers included in the initial search results. After removing duplicates, conference abstracts, and other articles not relevant there were 193 remaining studies. These were reviewed, and 13 articles related directly to preoperative risk factors for VHR postoperative complications were analyzed. These papers were then divided into sections related to risk stratification tools, and preoperative surgical optimization, potential risk factors including sarcopenia, age, cirrhosis, collagen metabolism, and inflammatory bowel disease (IBD), and intraoperative prevention strategies.

Conclusion: In conclusion, preoperative risk assessment for ventral hernias encompasses a multidimensional approach, incorporating risk stratification tools, patient-specific factors, and surgical optimization strategies. Our systematic review underscores the importance of comprehensive preoperative evaluation to recognize and mitigate risk factors along with surgeon adherence, thus improving surgical outcomes and patient care in VHR.

P53. Transform A Complex Case Into A Simple One: Inguinoscrotal Hernia With Loss Of Domain, Adjuvant Therapy And Robotic Repair With Sac Management

G Arevalo, C Amaya, T Worley
Houston Methodist Hospital

Background: Irreducible (IR) Inguinoscrotal hernias (ISH) to the level of the mid thigh S2 or lower with concomitant loss of domain are associated with more intra- and postoperative complications including orchitis, hematomas, seroma formation and abdominal hypertension, the later can be prevented with adjuvant therapy.

ISH have a large fibrotic sac , Primary abandonment of the sac is a safe strategy to prevent cord structures complications, more over the distal sac can be pulled out of the scrotum and secured to the abdominal wall or cooper to avoid seroma formation as described by Daes. The European hernia Society proposes an open approach as default operation for irreducible ISH. Using the above strategies we offer a robotic approach for this challenging hernia

Methods: Patient History: Herein we present a case of a 63 yo male with and a large ISH S2 IR, with loss of domain . Physical exam and imaging demonstrated bilateral defects with a right ISH containing large and small bowel with a TANAKA index of 42%.

Results: Based on the TANAKA index of 42%, adjuvant therapy was provided, 300 units of abobotulinum toxin were injected, four weeks later the patient was taken for a robotic transabdominal preperitoneal (r-TAPP) repair with a planned hernia sac abandonment with distal sac fixation using the Da Vinci Xi robotic platform. Pt was followed for post operative complications.

Bilateral defects were identified . The left IH had a direct defect with bladder in content and the right side had abundant viscera that was successfully reduced. The left hernia was address first, achieving the critical view of the MOP as described by Daes and Felix. For the right ISH, zone 2 had been preliminary dissected, we started with zone 1 dissection, followed by hernia sac and deep ring identification. The hernia sac was circumferentially incised at the level of the deep inguinal ring, in this way the distal sac was disconnected from the peritoneum, thus avoiding a difficult dissection of the cord structures from the peritoneum , as described by Christiano Claus. Critical view of the MOP was achieved. The distal sac was everted by pushing the scrotum from the outside. With a minimal posterior sac dissection, the sac was plicated to the ipsilateral cooper ligament, foregoing the need for drains. Two pieces of midweight polypropelene mesh were used plus a flat 15x15 mesh to ensure good posterior and anterior overlap for the ISH. Foley catheter was removed on POD1. At two weeks and 3 months the patient had an overall improvement in his quality of life with no significant seroma development

Conclusion: By optimizing the patient pre operatively with adjuvant therapy and utilizing the advantages of a robotic approach with a planned sac abandonment and appropriate management of the distal sac we offer a safe MIS and lessen the technical difficulties for a relative challenge surgery.

P54. Repair Of Parastomal Hernia Via Robo Le TEP-R TAR (Keyhole) Approach

A Khomutova, A Shmelev, L Swaszek, P Crosby
Stony Brook University

Background: Parastomal hernias associated with permanent ileal conduits after cystectomy pose unique challenges due to a foreshortened bowel segment, proximity of ureteroenteric anastomosis and absence of infraumbilical peritoneum.

Methods: Here we present a 66 year old male with history of urothelial bladder CA s/p radical cystoprostatectomy and an ileal conduit urinary diversion with subsequent ostomy prolapse requiring revision with resection of prolapsed bowel a year later. He presented with significant pain around his ileostomy. CT findings showed type 1 parastomal hernia with a small umbilical hernia. Given it was not possible to perform complete bowel lateralization for a sugarbaker repair, we opted to perform a robotic left e TEP-Right TAR, with double layer macroporous polypropylene mesh placed in a keyhole fashion.

Results: The patient did well post-operatively, with reduction of pain and quick return to baseline function.

Conclusion: A minimally invasive, extraperitoneal dissection combined with a transversus abdominis muscle release is a useful approach to parastomal hernia repair.

P58. Round Ligament Preservation In Mis Inguinal Hernia Repair, If You Must This Is How To Do It!

H Vale nzue la
Ho spital Ange le s De l Carmen

Background: Saving the round inguinal ligament in females is sometimes matter of controversy, although dividing it its known to be a safe maneouver some surgeons advocate for its preservation but at the same time sacrifice mesh coverage when doing so therfore this proposed technique is an option in such cases.

Methods: The procedures entails a longitudinal peritoneal incision around the round ligament and bring it inside the extraperitoneal space so the mesh can rest on top of it while the peritoneum is closed on top of the mesh ensuring it remains without contact with the abdominal cavity.

Results: Results are exactly the same as when the roung ligament is divided but for those advocating to preserve at least this way the mesh coverage wont be sacrificed.

Conclusion: It's easy to do and reproduce, if you must preserve this is how to do it.

P59. Dynamic Closure Of The Open Abdomen: Initial Results At Three Years Of Implementation

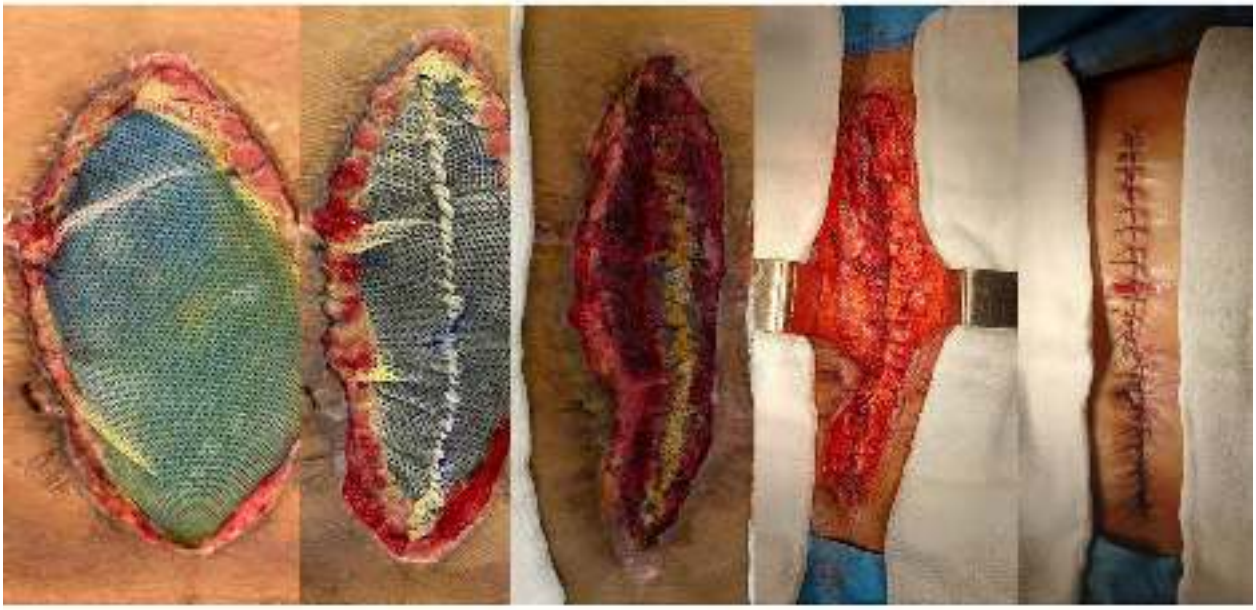
M Iudica, F Nogueira, J Lopez Meyer, J Sboeghen, F Barragan, P Cingolani, F Iudica
Hospital Universitario Austral

Background: Open Abdomen (OA) is a strategy often necessary that entails high morbidity and mortality in both acute and long-term follow-up. Dynamic Closure (DC) with mesh mediated fascial traction constitutes an effective technique for primary fascial closure and reduction of complications. As a supplement for addressing significant muscular retraction, the application of botulinum toxin (BTA), already employed in pre-surgical preparation for extensive hernias, could be extended to these patients. The objective of this study is to evaluate the results at three years of the initial implementation of DC for OA.

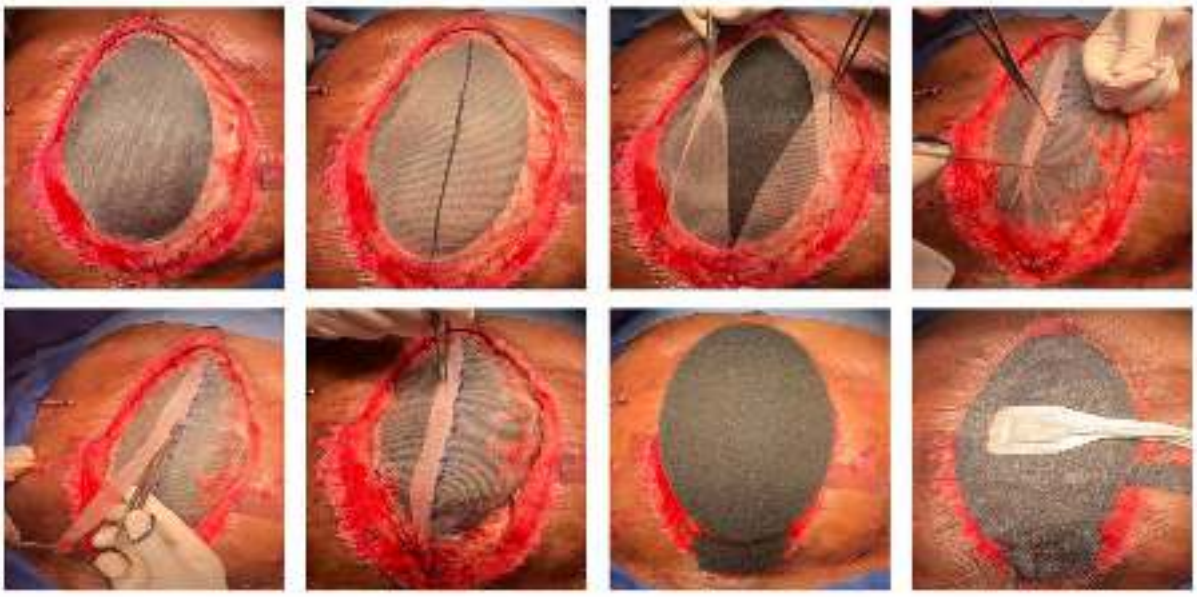
Methods: A retrospective analysis was conducted on a prospective database including patients with OA, operated at Austral University Hospital between 2019 and 2023. The strategy used was dynamic closure with mesh mediated fascial traction associated with vacuum system.
We analized in all cases, the indication for open abdomen, the use of botulinum toxin, the rate of primary fascial closure, closure of enterocutaneous fistulas, length of stay in the ICU and overall, operating room admissions, time to definitive closure, overall mortality, and duration of mechanical ventilatory support. Additionally, the development of incisional hernias during long-term follow-up was evaluated.

Results: 100% of patients achieved primary facial closure, with an average requirement of 4 operating room admissions. In 60% of cases, dynamic traction and botulinum toxin were used in combination. Entero-atmospheric fistulas closed in 100% of cases.

Conclusion: DC would be an effective technique for primary fascial closure of OA with low morbidity and mortality. Botulinum toxin (BTA) proved to be a useful adjunct in cases with significant muscular retraction.



Total patients (n)	15
Sex (F/M)	05 10
Age (median, years)	53.3 (27-80)
Bjork (at the beginning)	
- I	1 (7%)
- II	6 (40%)
- III	5 (33%)
- IV	3 (20%)
Initial GAP (mean, cm)	12.9 (18-9)
OA indication	
Abdominal Sepsis	11 (73.3%)
Second Look surgery	1 (6.6%)
Closure impossibility	2 (13.3%)
Damage Control	1 (6.6%)



P60. A Rare Entity- Acquired Abdominal Intercostal Hernia With Diaphragmatic Hernia Treated By Laparoscopic eTEP With Diaphragmatic Hernia Repair

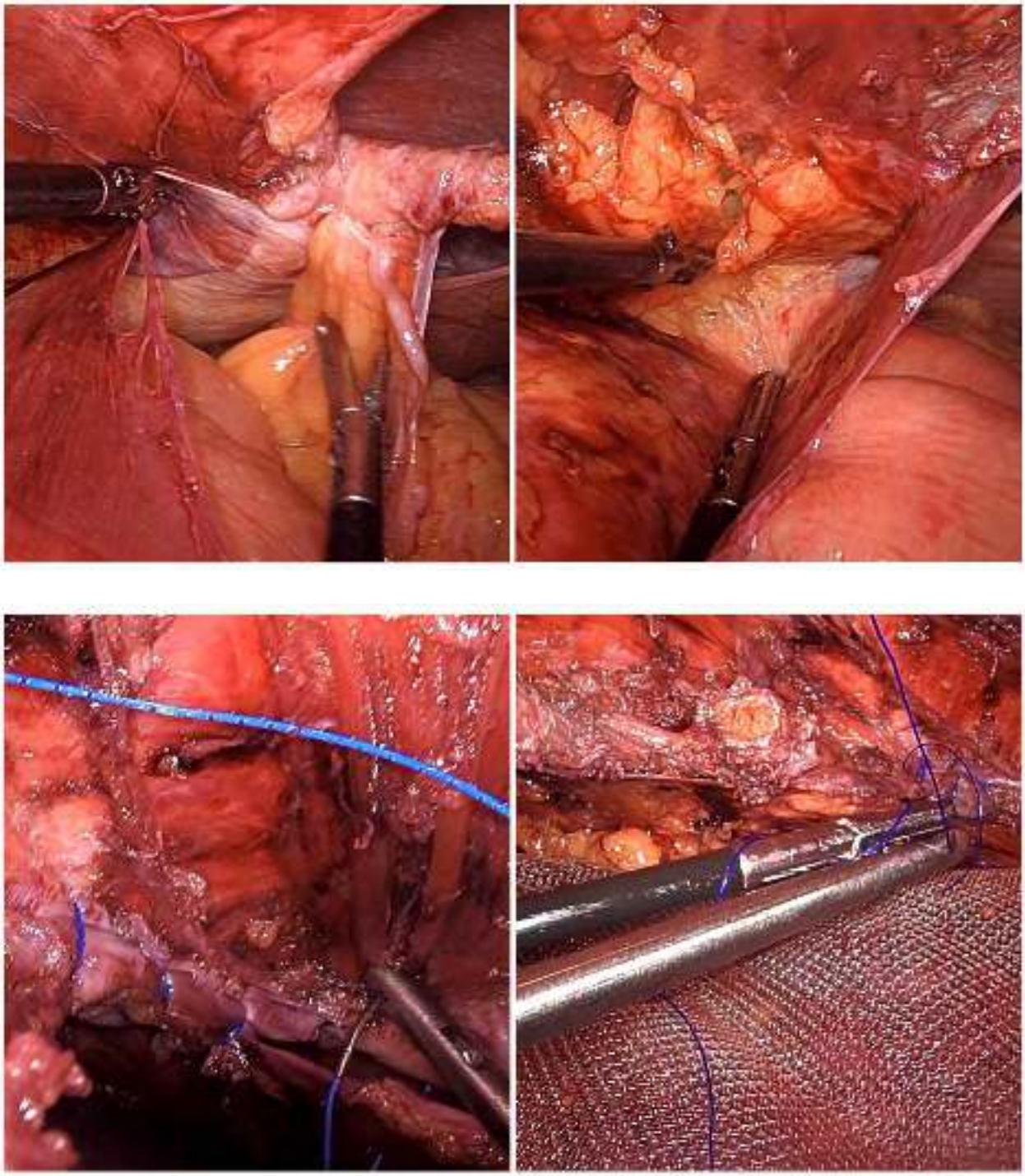
S Bobade, N Baste, A Bhende, Y Rahade, P Bachhuka
SMBTIMSRC Dhamangaon Nashik

Background: Acquired abdominal intercostal hernia, a rarest entity in ventral hernia, where hernia is in between lower ribs with intra abdominal contents. It is associated with diaphragmatic hernia. CECT is the preferred method for diagnosis. Chronic cough and trauma being its major causes. Very few cases of acquired abdominal intercostal hernia are reported in literature. Most common surgical procedure performed to treat this hernia is open or laparoscopic IPOM PLUS. Few cases reported are treated by robotic eTEP.

Methods: We performed laparoscopic eTEP RS with unilateral TAR with peritoneal flap with diaphragmatic hernia closure with large polypropelene mesh placement.

Results: Post operative period was uneventful except for mild pain near lower intercostal region. Post operative sonography shows mild seroma (10cc). Patient discharged on 8th post operative day.

Conclusion: Though we did not get any literature of laparoscopic eTEP RS with peritoneal flap for aquired abdominal intercostal hernia, laparoscopic eTEP RS is safe and feasible alternative to IPOM PLUS surgery in low socio economic regions with low affordability.



P61. Analytical Study For Development And Validation Of The Assessment Scale Of Surgical Plane In eTEP/TEP Surgery (ASSPES)

Y Rahade, N Baste
SMBTIMSRC Dhamangaon Nashik

Background: Laparoscopic hernia surgery is one of the most commonly performed surgery worldwide. A key step in E-TEP/TEP surgery is making a plane in the retrorectus space. The anatomical appearance of the normal retrorectus plane is supposed to be like a white mesh. Various factors like dissection techniques, blood pressure, anatomical variations, different instruments makes this plane vulnerable to bleeding and change in appearance of the plane. Despite development in various dissection techniques and energy sources, clear differentiation of their utility in better visualisation and dissection of plane is not comparable, due to lack of standardised definition of the changes in these planes. The objective of the following study was to develop and validate the ASSPES scale as a reliable and consistent tool to grade the surgical plane of ETEP/TEP surgery. Validation was based on the criteria provided by Food and drug administration for the scale to be considered acceptable. The criteria include the ability to detect change, clarity, relevance, repeatability (intra-observer agreement), reproducibility (inter observer agreement), response range, usability, construct validity. This scale can be used as a base for various research purposes with respect to ETEP/TEP surgery.

Methods: ASSPES was developed followed by an analytical cross-sectional study was done among various groups of surgeons including Consultants performing ETEP/TEP, Consultant not performing ETEP, Surgical trainees.12 surgical videos were randomised and presented to the groups, which were scored by them using the ASSPES scale. Inter observer and intra observer agreement was analysed using Kendall's coefficient of concordance (Kendall's W) statistic.

Results: The scale achieved an intra observer and inter observer concordance of 0.97 among the consultants perforning ETEP/TEP and Surgical trainees, which is considered excellent by Kendall's coefficient of concordance (Kendall's W) statistic. Kendall W 0.91 among the surgeons not perforning ETEP. 99% of the surgeons agreed that the scale is feasible to use with the clarity in distinction of all the four gradings.

Conclusion: ASSPES is a reliable and validated scale that can help to grade the surgical plane of ETEP surgery. It is a valid tool that can be used for research purposes in future. Effect of blood pressure, comparisons of surgical techniques, comparison of instruments of surgical planes in ETEP/TEP surgery are few examples of its implications.

P62. Examining Health Care Disparities In Time To Elective Inguinal Hernia Repair Surgery

I Sethi, A Khomotuva, A Torres, X Zhang, J Yang, K Powers, A Shmelev, K Spaniolas
Stony Brook University

Background: Many patients with inguinal hernias present asymptomatically or minimally symptomatic and a "watchful waiting" approach is taken for surgical management. Although disparities have been previously demonstrated in inguinal hernia repair (IHR) procedure choice and outcomes, little data exists surrounding how lack of access to care once symptoms do appear may lead to disparate IHR outcomes. We aimed to identify disparities in length of time to elective IHR and whether time to IHR affects procedure type.

Methods: The New York Statewide Planning and Research Cooperative System (SPARCS) database was used to identify adult patients who were diagnosed with inguinal hernia between 2008-2022. Patients who had IHR during the same encounter as diagnosis were excluded. For each patient, patient demographics (age, sex, socioeconomic status) and procedure type (open vs. MIS) were collected. Patients' socioeconomic status was measured using patient median income level for zip code and insurance status. Time to surgery was defined as time between hernia diagnosis to first IHR.

Results: 295,883 adult patients were diagnosed with inguinal hernia in the study time frame. 104,629 (35.36%) of patients underwent subsequent IHR, with 97,733 and 6,896 patients receiving elective and emergent surgery, respectively. There was a mean time difference of 174 □ 512 days and median of 19 days between inguinal hernia diagnosis and elective repair. Female patients were more likely to have shorter time to IHR compared to males (147 days vs. 176 days, p=0.0165). Black, non-Hispanic patients were significantly more likely to have longer time to IHR compared to Hispanic and White, non-Hispanic patients (204 vs. 166 vs. 180 days, respectively, p< 0.001) Medicare patients had significantly shorter time to IHR compared to Medicaid and commercially insured patients (147 days vs. 180 days vs. 186 days respectively, p< 0.001). High income patients also had significantly shorter time to IHR compared to median and low income patients. (152 days vs. 182 days vs. 190 days respectively, p< 0.001). Patients with who underwent open surgery had longer time to IHR versus patients undergoing laparoscopic surgery (median 20 days vs. 17 days, p< 0.001).

Conclusion: Overall, female, Medicare-insured, and high-income patients are likely to get IHR within a shorter time frame, in contrast to Black, non-Hispanic patients. Furthermore, longer times to IHR are associated with use of open approach to IHR. These results have important implications in understanding discrepancies to access to hernia care. Further research is needed to understand how disparate time to IHR may affect ultimate surgical outcomes.

P65. An Innovative Solution To A Rare Complication Of MIS Inguinal Hernia Surgery

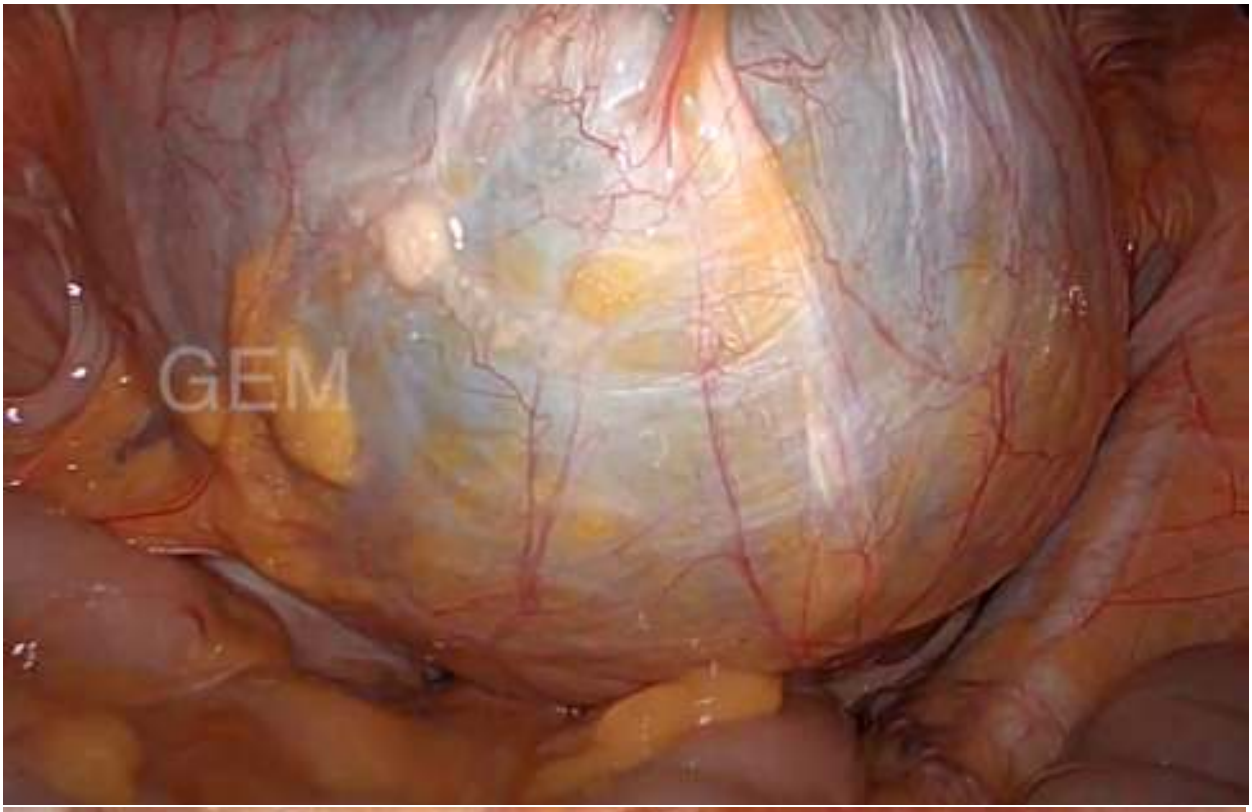
R Punjani, R Parthsarthi
Fortis Hospital

Background: MIS Inguinal surgery is quite safe, specially robot assisted. We encountered a ver rare complication & could apply a very innovative remedy.

Methods: 50 year old lady had a strangulated left femoral hernia. Underwent emergency robot assisted TAPP. There was strangulation of appendices epiploicae of sigmoid colon which was excised & dissection was done to achieve critical view of MPO. 3D mesh was deployed & glue fixation was done. Patient had uneventful recovery. She presented after 6 months with a swelling in groin with abdominal bloating. On Imaging, there was fluid collection in left femoral sac & also a very large cystic swelling in retroperitoneum pushing urinary bladder. On aspiration it was a clear fluid & did not grew any bacteria in culture. Lymphaic cyst was suspected. ICG was injected in left inguinal lymphnode prior to diagnostic laparoscopy. Cyst was opened & fluid drained. Lymphatics could be visualised as green streaks. Leakage site was identified. "Seraseal" was put over the leak. Cyst was sutured back over suction drain.

Results: Drain was pulled out in seven days. Patient recovered well, is asymptomatic & normal on sonography. Intending to do one CT scan before the conference to see final result, which will be 6 months post surgery.

Conclusion: MIS inguinal often has seroma But Lymphocoele is a very rare complication. We had a very innovative method to tackle it, which has given good result.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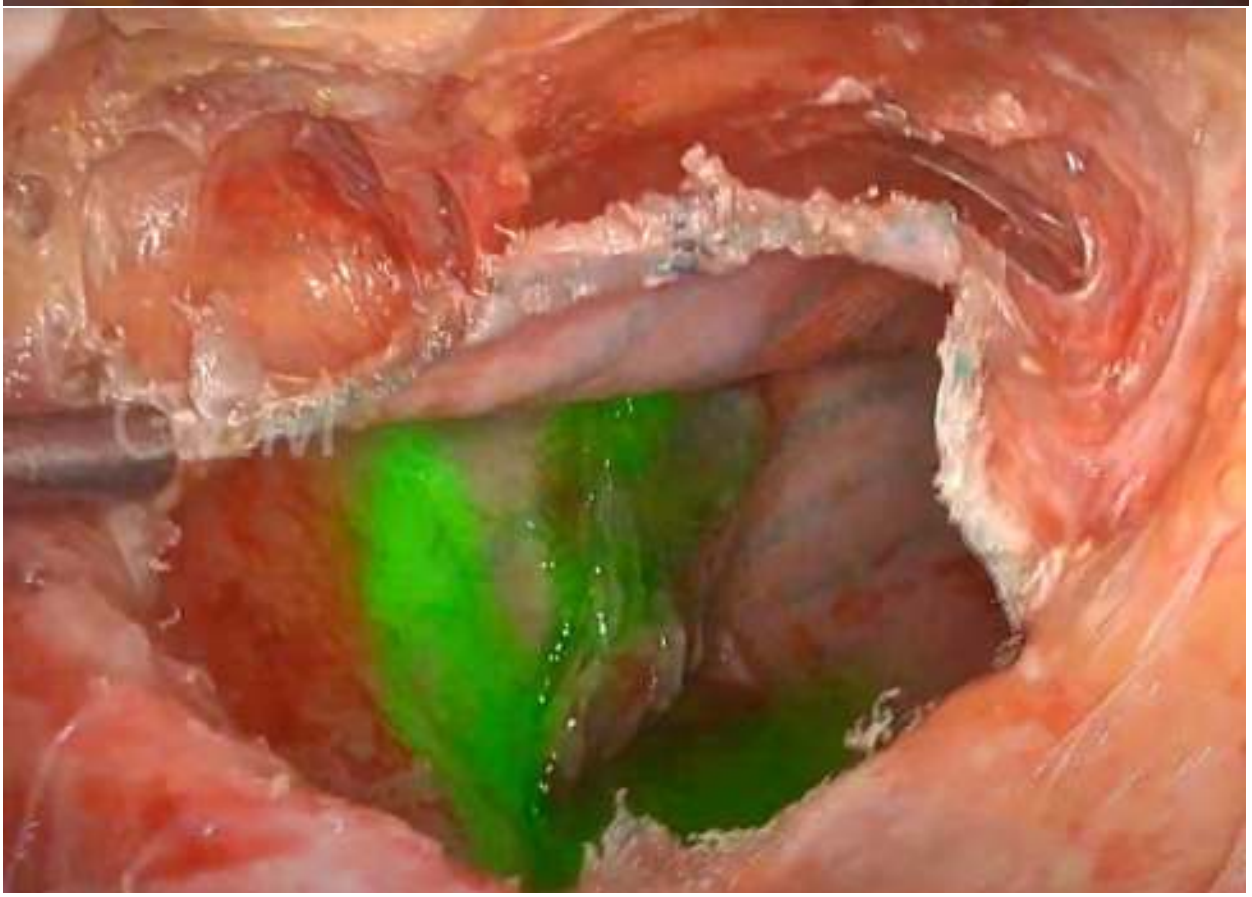
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P66. Outcomes Of A Reinforced Tissue Matrix Used In Inguinal Hernia Repair: An OviTex® Clinical Quality Improvement (CQI) Project

P Szotek, B Alvoid-Preston, R Forman, B Ramshaw
Indiana Hernia Center

Background: Various FDA-cleared synthetic and biologic hernia mesh options exist for inguinal hernia repair. A four-layer reinforced tissue matrix (OviTex Core Permanent) was designed to combine the benefits of a permeable biologic scaffold with the durability of embedded synthetic reinforcement. This reinforced biologic may have a better clinical value proposition than other available synthetic or biologic-only hernia mesh options. A newer approach using a clinical quality improvement (CQI) methodology was used to evaluate outcomes using real-world clinical data.

Methods: In this CQI project, one clinical site evaluated this reinforced tissue matrix for inguinal hernia repair. Recognizing that quality follow-up data is necessary to provide feedback for learning how to improve outcomes, a combination of manual and technological solutions was used to obtain clinical and follow-up data. Clinical data were obtained from the electronic medical record through GenAI data acquisition software tools as well as manual extraction. Follow-up data were obtained through a HIPAA-compliant text application, manual phone calls, and emails.

Results: OviTex was used to repair 313 inguinal hernias in 214 patients who had 217 hernia repair operations over 24 months (2021-2022). Five patients with giant inguino-scrotal hernias were excluded from this analysis. The approaches included robotic (184) and open (33) repairs for right (75), left (44), and bilateral (96) inguinal hernias (location for two repairs was not documented). Patient demographics included hernia repair in 205 males (96%) and 9 females (4%). There were 37 patients with recurrent hernias (17%) and 16 patients with chronic groin pain (7%). Mean follow-up time was 19.1 months (1-39 months). Median follow-up was 19 months. During this follow-up period, there were four recurrences (4/313, 1.3%) and three patients who developed occasional or moderate pain at a hernia site after hernia repair that did not impact their quality of life (3/313, 1.0%). There were no patients that developed new chronic groin pain. Follow-up of 6 months or more was achieved in 176 patients (82.2%), and follow-up of 12 months or more was achieved in 163 patients (76.2%).

Conclusion: A four-layer reinforced tissue matrix is being evaluated in a CQI project. The results suggest that this reinforced tissue matrix has a low recurrence rate and no new chronic post-operative pain in patients with inguinal repair. There were no mesh-related complications, and no mesh removal was required. A combination of automated and manual data collection was employed for clinical and patient follow-up, with a high success rate for follow-up.

P67. Evaluation Of Transorb™ Self-Gripping Resorbable Mesh Reinforcement In A Porcine Model Of Abdominal Wall Repair

L Bouré, r Vestberg, Y Bayon, J Lecuivre, a Radlovic
Medtronic

Background: Transorb™ Self-Gripping Resorbable Mesh is a novel slowly resorbable hernia mesh dedicated for open ventral hernia repair. The mesh is composed of a macroporous textile with the self-gripping ProGrip™ technology on one side. It is manufactured by knitting resorbable monofilament, poly-L-lactide, poly-trimethylene carbonate copolymer yarns. Transorb™ Self-Gripping Resorbable Mesh is a slowly resorbable hernia mesh designed to provide mechanical strength to the abdominal wall during at least 20 weeks, the critical period of healing (Hope et al, 2015) and to support the cellular ingrowth and remodeling until complete resorption evaluated between 36 to 60 months.

Transorb™ Self-Gripping Resorbable Mesh was shown to be well tolerated and biocompatible throughout its full implant lifetime, during an in vivo study performed under ISO 10993-6 guidance. Its reinforcement performance and remodeling up to 20 weeks were evaluated using a modified published porcine animal model of abdominal wall repair (Martin et al, 2013).

Methods: Two full-thicknesss abdominal walls defects were created in the abdominal walls on each side of the midline of 51 Yucatan miniature swine (n=17 per time point). The defects were repaired with an absorbable suture and reinforced with Transorb™ Self-Gripping Resorbable placed in a preperitoneal position. Four, 12 and 20 weeks after implantation, dedicated implanted sites were evaluated for mesh tissue integration and ingrowth using histopathologic semi-quantitative measurement and dedicated implantation sites were submitted for the mesh reinforcement measurement using the site bursting strength. Native Abdominal Wall (NAW) was harvested in caudal position to the implantation sites and was compared to the sites reinforced with the Resorbable Mesh.

Results: No device-associated complications were found in vivo at necropsy, or histologically. Macroscopically, all Resorbable Mesh implants were incorporated into host tissue at 4, 12 and 20 weeks after implantation. The defects were healed, and the Transorb TM Self-Gripping Resorbable Mesh meshes were visible. Histologic semi quantitative analysis showed a complete tissue ingrowth and full tissue integration of the Resorbable Mesh starting at 4 weeks after implantation and up to 20 weeks. The grips of the Resorbable Mesh were visible and fully integrated 4 weeks after implantation in the newly formed connective tissue. The burst strength of the Resorbable Mesh repaired sites were significantly higher to the one of the NAW at 4 weeks and 12 weeks ($p < 0.001$) and equivalent at 20 weeks post-implantation ($p=0.270$)

Conclusion: Transorb™ Self-Gripping Resorbable Mesh provides appropriate mechanical support for the 20 weeks of the critical healing period of the abdominal wall. It was well tolerated with no adverse effects, at all implantation times surveyed up to 20 weeks. The mesh also integrates quickly in the abdominal wall with a new connective tissue intertwining closely the mesh as well as the grips which should contribute to the mesh anchorage. This highlights the distinct feature of the Transorb TM Self-Gripping Resorbable Mesh with its grips feature.

P68. Post-Operative Leukocytosis In Abdominal Wall Reconstruction

F Richards, K McCabe, C Baumgartner, W Childers, Y Wirt
University of Pittsburgh Medical Center

Background: Abdominal wall reconstruction is a major surgery, often undertaken on patients with multiple comorbidities. Post-operative complications in the immediate post-operative period include hemorrhage, surgical site infections (SSI), and systemic complications such as pneumonia. At our institution, we routinely collect complete blood counts (CBCs) from patients following posterior component separation (PCS) with transversus abdominis release (TAR). However, it is not clear whether post-operative leukocyte count is a helpful data point to predict post-operative complications, or part of the natural clinical course for patients undergoing PCS with TAR.

Methods: We performed a retrospective analysis of 183 patients who underwent abdominal wall reconstruction with unilateral or bilateral transversus abdominis release at a single center. WBC counts were recorded for each patient during their post-operative course. We stratified patients based on return to WBC < 10.7 which is considered normal by our laboratory standards. We then compared post-operative leukocyte count with length of stay and diagnosis of surgical site infection.

Results: 100 out of 183 patients had labs values for POD1-4. There was no significant difference in post-operative leukocytosis on day 1-4 in patients who presented to the ED or for admission within 30 days, nor was there a significant difference between patients who developed surgical site infection and those who did not.

Conclusion: Leukocytosis is a natural part of the post-operative course for patients undergoing abdominal wall reconstruction. Patients who required readmission or developed SSI in our group did not have a significant difference in post-operative leukocytosis compared to those patients who had an uncomplicated post-operative course. Leukocytosis in the immediate post-operative period after hernia repair may not be informative of developing complication, and routine WBC serological testing is not necessary without clinical signs of infection.

P69. Staged Repair Of Recurrent Giant Inguino-Scrotal Hernia And Concurrent Midline Incisional Hernia

J Amundson, J Linn
Endeavor Health

Background: Here we present a case of staged repair of a recurrent giant inguino-scrotal hernia and concurrent midline incisional hernia. The patient is a 68-year-old man who presented to clinic for evaluation of a one-year history of midline bulge associated with pain. On physical exam, he was noted to have a 10x15 cm reducible, non-tender midline incisional hernia without any overlying skin changes. He also was found to have a tender, partially reducible, large left inguino-scrotal hernia. His surgical history was notable for previous open left nephrectomy and orchiectomy for retroperitoneal liposarcoma, open right inguinal hernia repair, and TEPP left inguinal hernia repair. He was taken to the operating room for a planned robotic repair of both his inguino-scrotal and ventral incisional hernia. Repair of his inguinal hernia required over three hours of anesthesia time due to sigmoid colon being incarcerated in the hernia sac and a re-operative field with previous mesh in situ. After completion of the first portion of his case, the inguinal hernia repair, component separation was deferred due to rising end tidal CO2. He recovered uneventfully from the first stage of his repair. Three months later, a staged robotic component separation with bilateral TAR was performed utilizing a 30x30 cm mesh. This was also tolerated well, with the patient discharged to home on post-operative day one. Most recently, he is recovering well with a small seroma on physical exam at post-operative day #20.

P70. Small Bites Technique (SB) For Abdominal Wall Closure And The Bias Of Jenkins' Rule: A Systematic Review And Meta-Analysis

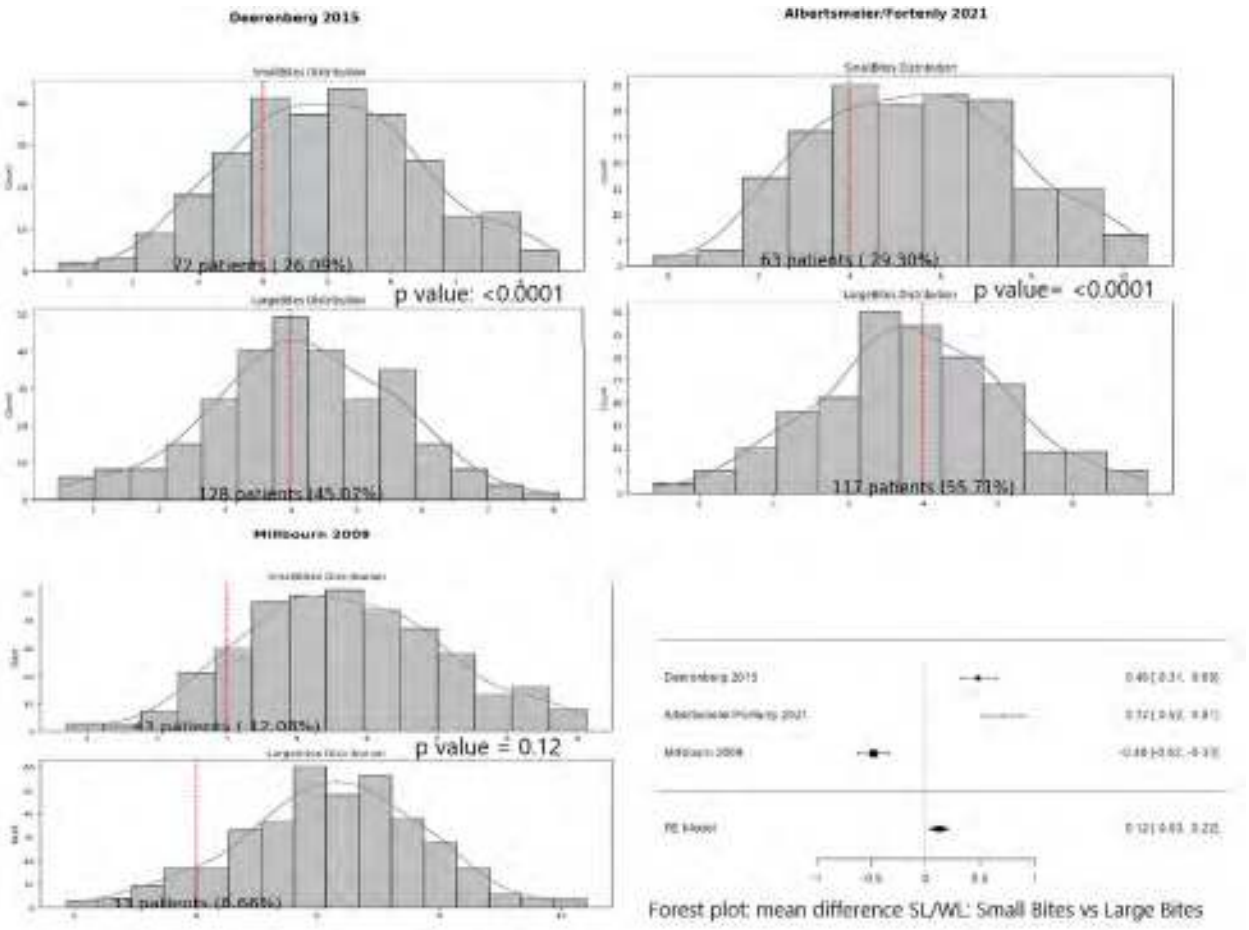
E Lozada Hernández
IMSS Bienestar Hospital regional de Alta Especialidad del Bajio

Background: The use of slowly absorbable monofilament materials and adhering to an SL/WL ratio greater than 4:1, along with the Small Bites (SB) technique, has been linked to reduced rates of incisional hernia (IH). Non-compliance with a 4:1 SL/WL ratio triples the risk of IH. This study aims to determine if adherence to the SL/WL ratio impacts IH occurrence.

Methods: Original studies reporting the use of the SB technique for abdominal wall closure were sourced from six databases. The SL/WL ratio in SB versus Large Bites (LB) technique studies was analyzed through pooled analysis and meta-analysis, with statistical analysis performed using Python and R. The analysis included design parameters such as mean, SD, and sample size, comparing the proportion of patients with an SL/WL ratio below 4 and assessing heterogeneity with I2 statistics.

Results: Five randomized controlled trials (RCTs) and three prospective cohort studies were included for meta-analysis and qualitative analysis, respectively, after excluding two RCTs and three cohort studies for lack of necessary parameters. A total of 1,722 participants (847 SB and 875 LB) were analyzed. Globally, SB patients had a lower SL/WL ratio (< 4) in 21% of cases, compared to 31% in LB, p=< 0.0001 OR 1.91 (95% CI 1.5-2.4) with significant individual study trends.

Conclusion: Overall, a higher proportion of LB technique patients had an SL/WL ratio below 4, potentially skewing the effectiveness of the SB technique in preventing IH.



Forest plot: mean difference SL/WL: Small Bites vs Large Bites

P71. eTEP Unilateral TAR Technique For Lateral Wall Incisional Hernia Repair Without Midline Cross Over- Video Presentation

R Mahadar
Jeevanshree Hospital

Background: The eTEP approach has gained prominence in hernia repair surgery due to its minimal invasive nature and favourable post operative outcomes. however, conventional eTEP procedures for lateral wall incisional hernias often require midline cross over, posing potential risks to surgical integrity and patient recovery

Methods: This video presentation introduces a modification of the eTEP technique for unilateral lateral wall incisional hernia repair, employing transversus abdominis release (TAR) without midline cross over. Surgical technique is demonstrated step by step , emphasising meticulous dissection and precise mesh placement to ensure optimal outcomes

Results: Case series is presented to illustrate successful outcomes and reduced postoperative complications associated with modified eTEP approach. The presentation of surgical integrity and enhanced patient recovery are highlighted ,showcasing the efficacy of TAR without midline crossover in lateral wall incisional hernia repair

Conclusion: The eTEP Unilateral Tranverus Abdominis Release Technique offers a safe and effective alternative for lateral wall incisional hernia repair without the need for midline crossover .This approach contributes to the advancement of hernia repair techniques, aiming to improve patient outcomes and minimise surgical risks

P73. Staying Totally Extraperitoneal For Robotic Inguinal Hernia Repair: The Robotic Enhanced-View Approach Experience

G Arevalo, C Amaya
Methodist Hospital Willowbrook

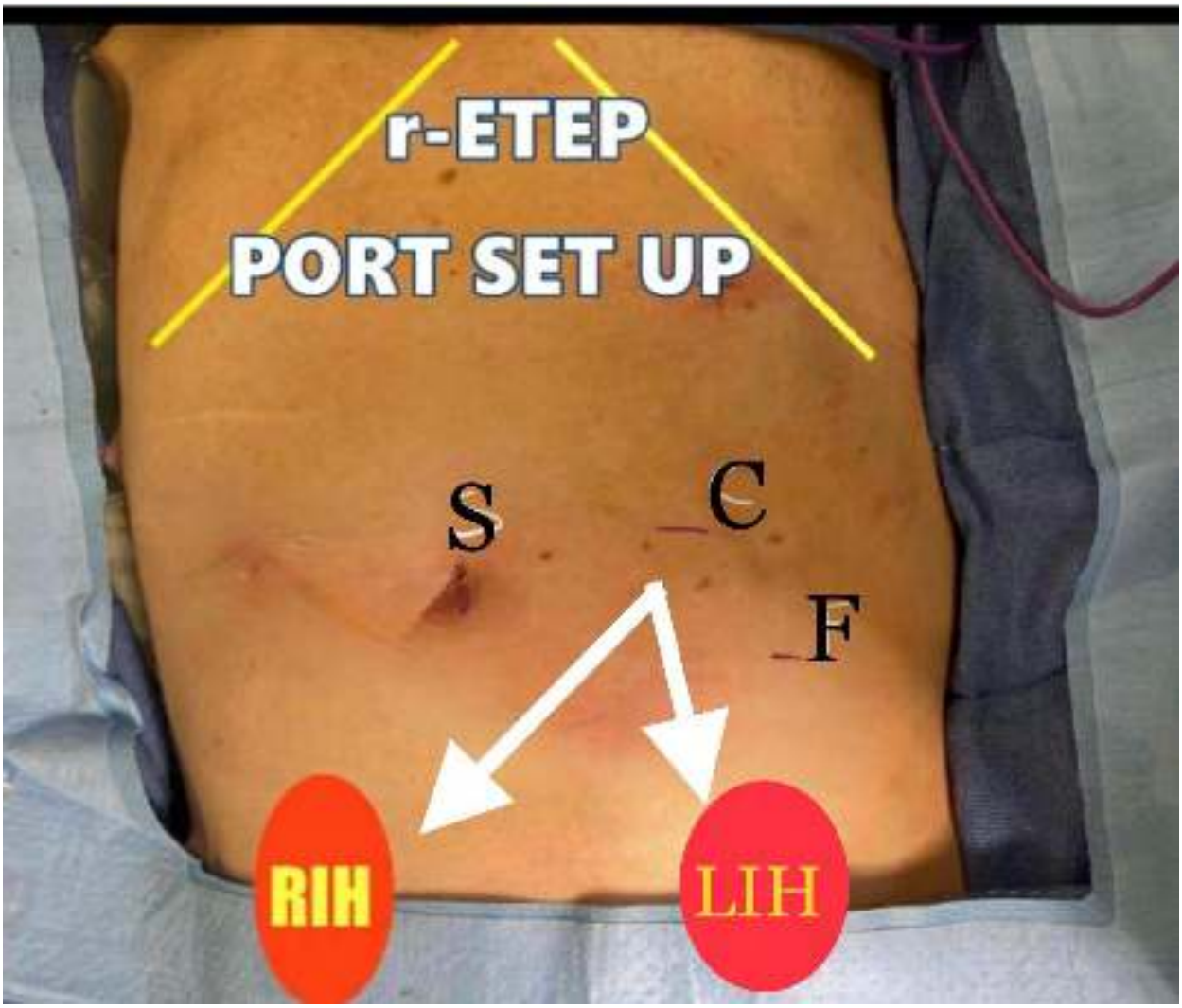
Background: This abstract builds upon Jorge Daes' seminal technique for the repair of inguinal hernias, the enhanced-view totally extraperitoneal (e-TEP) approach. With the widespread adoption of robotic surgery, the "enhanced view" concept has changed the paradigm of repair for abdominal wall hernias. We present our center's experience, utilizing the principles of the technique during robotic inguinal hernia repair, employing the Robotic e-Tep inguinal hernia technique.

Methods: A retrospective review of a prospectively collected database of patients who underwent r-ETEP inguinal hernia repair from August 2023 to February 2024 was performed at a single institution. The r-ETEP was implemented in 24 patients who underwent unilateral inguinal hernias, bilateral inguinal hernias, and femoral hernia repair. Demographics, quality of life scores using the EURA QS, pain scores, readmissions, were obtained. All patients underwent complete extraperitoneal dissection, with arcuate line division and a critical view of the Myopectineal orifice. Intraperitoneal assessment was only used in the first set of cases. No combined ventral hernia cases were included.

Results: Twenty-four patients underwent r-ETEP for inguinal hernias and were analyzed. Eighteen male and six female with a mean age of 45, body mass index 34, previous repair 3. Hernia type unilateral 21, bilateral 2, femoral 1. Mesh used three-dimensional contoured polypropylene mesh. Significant postoperative improvements in EURAHS-QoL scores ($p < 0.001$) for pain, activities, and cosmetic. Surgical site occurrence: 2 patients developed seroma that resolved conservatively. No hematomas, no conversions, no recurrences.

Conclusion: The benefits of an extraperitoneal repair combined with the robotic platform offer an ample view of the myopectineal orifice, identifying the hernias at its origin without dividend the peritoneum. Improvements in EURAHS-QoL scores demonstrated a positive impact on patients' quality of life. The technique is safe and reproducible; however, a proper understanding of the abdominal wall anatomy is paramount for correct anatomical dissection.


Fenestrated
Camera
Scissors
LIH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P74. Drain Versus No Drain In Elective Open Incisional Hernia Repair: A Propensity Score Matching Analysis Using The ACHQC Database

D Lima, R Nogueira, X Zheng, C Silveira, A Rasador, J Kasakewitch, P Sreeramoju
Montefiore Medical Center

Background: The benefits of prophylactic drains placement are controversial during elective open incisional hernia repair. The aim of this study was to evaluate drains impact on surgical site occurrences (SSO) and infection (SSI) after open elective incisional hernia repair with mesh.

Methods: A retrospective review of prospectively collected data from the Abdominal Core Health Quality Collaborative (ACHQC) was performed to include all adult patients who underwent elective open incisional hernia repair with permanent synthetic or resorbable synthetic mesh. A 1: 1 propensity score match (PSM) was conducted for balanced groups. Univariate analysis was performed to compare two groups (postoperative drain versus no drain) across preoperative, intraoperative, and postoperative timeframes. A multivariate logistic regression was performed to evaluate the relation of individual factors to the outcome variables.

Results: The ACHQC database identified 10,821 patients with incisional ventral hernias who underwent open VHR. A PSM analysis stratified 1,507 patients to each group with a total of 3,014 patients. The median age of patients in the drain group was 60 (IQR 50-68) and no drain 59 (IQR 48-69). There was no difference in BMI, DM, ASA class, gender, and smoking status between the groups. Recurrent hernia was higher in the drain group (42% versus 32%; $p < 0.001$). Most hernias were M2 and M3 in both groups. Median hernia width was 5 cm (IQR 4-7) in the drain group and 5 cm (IQR 3-7) in the no drain group. TAR was higher in the drain group (n=330, 22% versus n=136, 9%; $p < 0.001$), median mesh width was 15 cm (IQR 12-20) in the drain group versus 12 cm (IQR 8-15) in the no drain group ($p< 0.001$). Onlay mesh positioning was 21% in the drain group versus 5.6% in the no drain ($p< 0.001$) and no drain group had more sublay mesh (91% versus 74%; $p < 0.001$). Median LOS was 3 days (IQR 1-4) in the drain group versus 1 (IQR 0-2) in the no drain group ($p< 0.001$). 30 days readmission rate was higher in the drain group (87,5.8% versus 51, 3.4%; p 0.002) SSI was higher in the drain group (65, 4.3% versus 37, 2.5%; $p = 0.005$). Seroma was higher in the non drain group (118, 7.8% versus 67, 4.4%; $p< 0.001$) Logistic regression showed that drain was a predictor of SSI (OR 1.7, CI 1.15-2.6; $p = 0.010$), increased LOS (OR 2.9, CI 2.3 – 3.7; $p < 0.001$), increased 30 days readmission (OR 1.7, CI 1.2 – 2.4; $p = 0.004$) and decreased likelihood of developing seroma (OR 0.5, CI 0.4 – 0.7; $p < 0.001$)

Conclusion: Drain placement during elective incisional hernia repair was protective of postoperative SSO. However, it increased LOS, 30 days readmission and SSI.

P76. eTEP Approach For Ventral As Well As Inguinal Hernia - Case Series Of 101 Patients With Ventral And Inguinal Hernia At Tertiary Hospitals In One Year

V Patil, N Baste , V Patil
SMBTIMS RC Dhamangaon Nashik

Background: There has been a surge of innovative procedures in the field of abdominal wall hernias. Conventional and popular surgeries for ventral and inguinal hernias are open onlay mesh hernioplasty, open retro muscular mesh hernioplasty (Rives-Stoppa procedure), open lichenstein mesh repair for inguinal hernias. Evidence seems to suggest that retromuscular mesh hernioplasty has advantages over other procedures regarding recurrence and surgical site occurrences. An alternative strategy has been developed for this setting where a mesh is placed in retromuscular space by minimal access technique of the extended Totally Extraperitoneal approach (eTEP).

Methods: We have prospectively analysed the data of 101 patients who underwent an eTEP procedure for inguinal and ventral hernias with a minimum follow-up of 2 months from March 2023 to March 2024. Their data were analysed for operative details, intra-operative and post-operative complications. Total 49 ventral hernias and 52 inguinal hernias have been operated with eTEP at tertiary care hospital. Port positions for ventral hernia (figure 1a) and for inguinal hernia (figure 1b) is as shown below. Mesh placement in retro rectus plane is as shown in figure 2, in ventral hernia.

Results: For a total of 101 patients, we have recorded a total of one surgical site occurrence for B/L inguinal hernia and 1 seroma for unilateral inguinal hernia. There was no surgical site infection or mesh infection to any of the patients.

Conclusion: Judging from our short-term results, we suggest that the eTEP technique can be adapted in tertiary care centres also with advanced laparoscopic skills with the careful patient selection.


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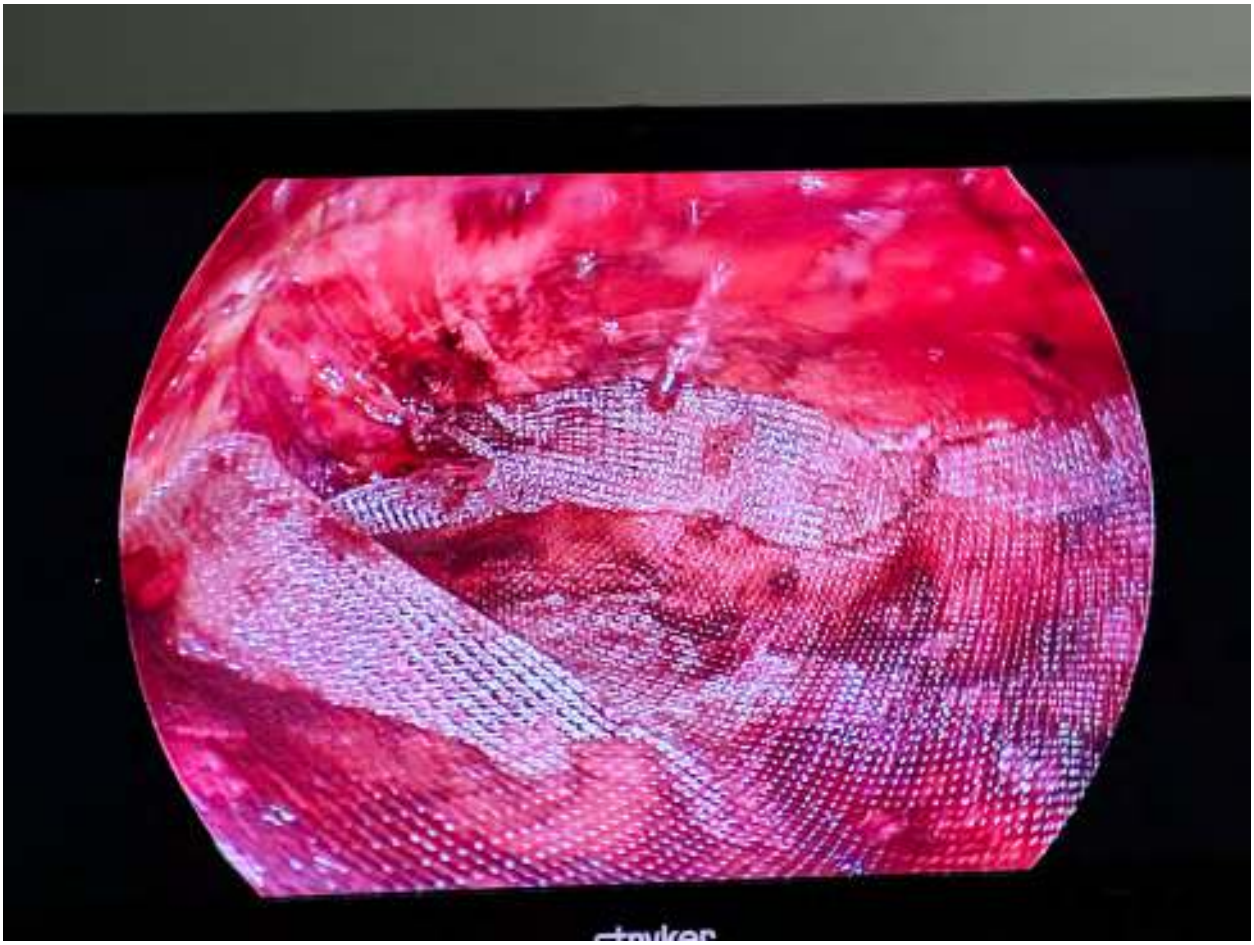
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P77. Different Methods Of Pseudo-Sac Management In Laparoscopic Hernia Repair

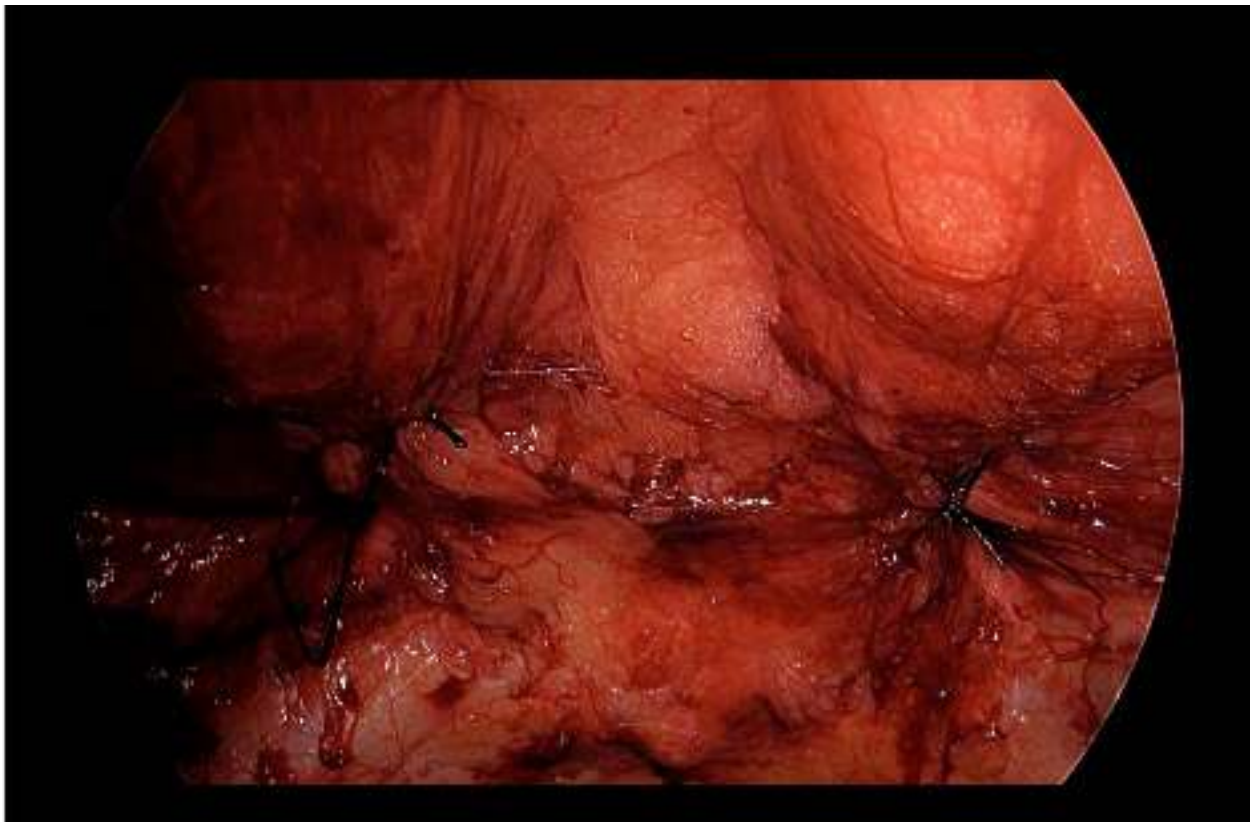
V Patil, N Baste , N Khairnar, N Dabhade
SMBTIMSRC Dhamangaon Nashik

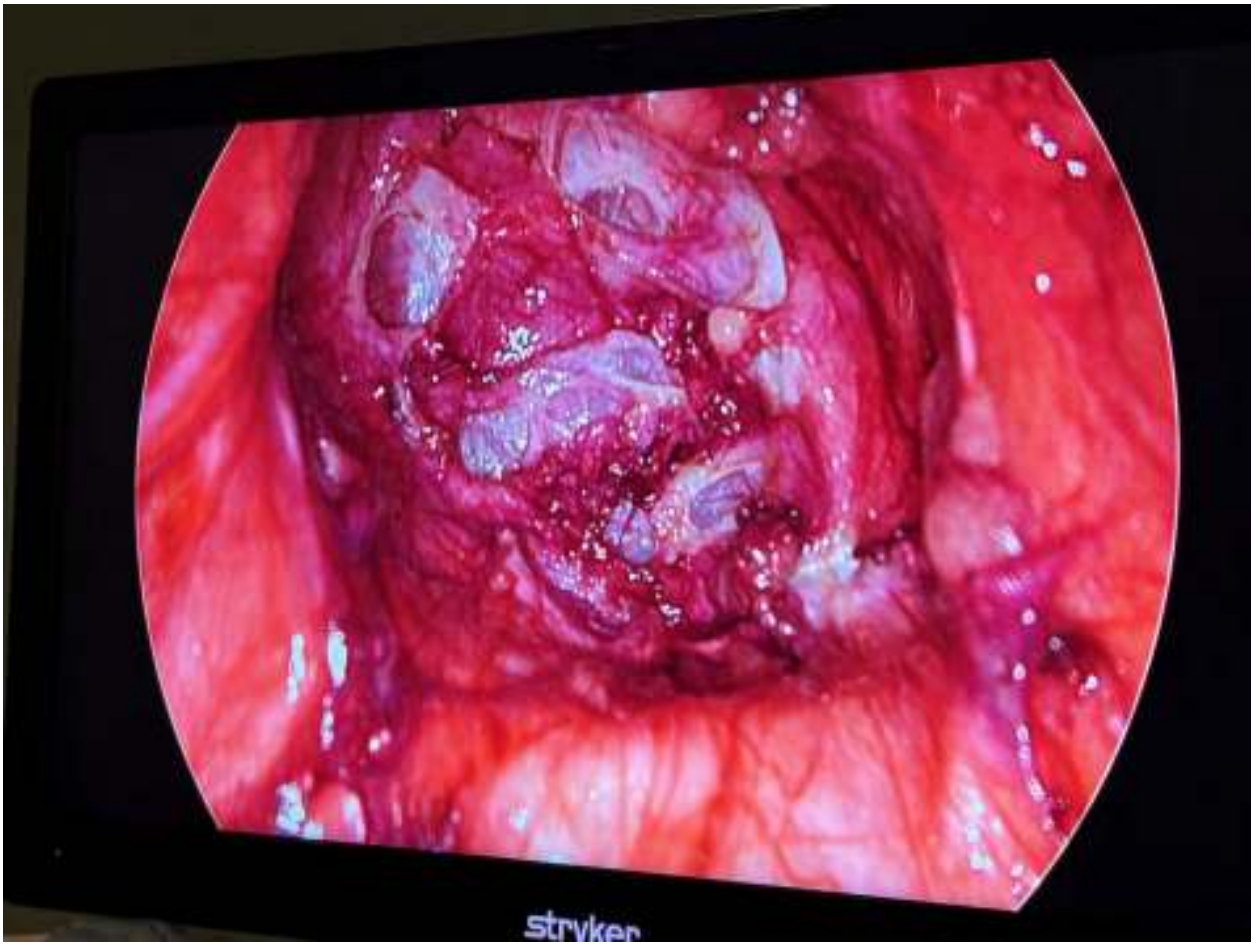
Background: Pseudosacs in hernia are a culprit for formation of seroma which is a common nuisance encountered by surgeons in postoperative period of any hernia surgeries. Although minimally invasive approaches have reduced the postoperative morbidity in hernia patients, complications like seroma formation are unavoidable. We are presenting different methods we have used for management of pseudo-sac and their outcomes.

Methods: Different methods we have used are as follows
1) Tucking of sac, 2) Fenestration of sac, 3) Excision of sac, 4) leaving the sac behind
All these methods are simple, feasible and effective

Results: Out of 80 patients who underwent inguinal hernia repair at our institution, in around 10 patients fenestration of sac was performed, tucking of sac was done in 12 patients, 2 underwent excision of sac and in the rest sac was left behind. After a long term follow up only 2 patients developed seroma

Conclusion: All these methods mentioned above are feasible and effective with more or less similar results. Their efficacy over one another is yet to be proven

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P78. Retrorectus Sublay Repair With Transversus Abdominis Release For Incisional Hernia Following Liver Transplantation In W2-W3 Hernias

R Shrivastava
SRI HN Reliance Foundation Hospital

Background: The lifetime incidence of incisional hernia in patients following liver transplantation. ranges from 1.7-43%. These patients are predisposed to developing incisional hernias due to factors such immunosuppressive therapy especially mTOR inhibitors, MELD score >22, acute rejection and post-transplantation ascites. A plethora of techniques are available for incisional hernia repairs including both open and laparoscopic modalities.
This study aims to assess postoperative outcomes following a sublay repair with posterior component separation technique in patients with incisional hernia post liver transplantation.

Methods: This is a prospective analysis of patients post liver transplantation undergoing incisional hernia repair. We reviewed a total of 7 patients using non-random, convenient sampling of which 4 patients underwent Laparoscopic Extended view Totally Extraperitoneal(ETEP) repair with bilateral Transversus Abdominis Release (TAR), 2 underwent ETEP hybrid repair and 1 Open bilateral TAR. Our method of choice was the laparoscopic modality however in cases of large hernial sacs/severe adhesions, we opted for an open or hybrid repair. We assessed primary outcomes such as pain(Visual Acuity Score;VAS), length of hospital stay(LOS) and secondary outcomes such as seroma formation, surgical site infection and recurrence upto a period of 1 year post-operatively.

Results: The mean VAS score of our sample was 2.2, mean LOS was 2.1days. 1patient had a clinically insignificant seroma, whereas none of our patients had a SSI or recurrence till our period of follow up.

Conclusion: A retrorectus sublay repair with TAR is a safe and feasible approach for repairing incisional hernias post liver transplantation and maybe considered as the procedure of choice for such cases.

P79. Hernia Literature Data Visualization - Is There A Better Way?

TOlson
W. L Gore and Associates

Background: There is a broad range of published hernia literature. With so many confounding factors such as defect size, plane of mesh placement, potential contamination, or patient comorbidities; it is hard to compare results between different studies. Oftentimes meta-analysis statistical methods are used to review medical literature. Because follow-up times can vary significantly between studies and it is well documented that increasing follow-up times correspond with increasing recurrence rates, de-coupling recurrence rates and follow-up time should not be performed.

Rather than presenting literature data in a table with means, standard deviations, and ranges, it is suggested to plot any data affected by time (i.e. recurrence rates, mesh infections, etc.) versus time.

Methods: In line with the principles of the PICO process (Population, Intervention, Comparator or Control, and Outcomes), the information considered to prepare the literature searches with specific inclusion and exclusion criteria. Data sources used were: MEDLINE on Dialog, Embase, UpToDate. As a relative benchmark, the Luijendijk/Burger randomized controlled trial was used since it is the most cited ventral/incisional hernia paper according to Scopus.* Additionally, a few other papers with comparator suture data were included that were not collected in the literature search. For data to be plotted in the analysis section a minimum of 20 subjects at a given timepoint was required.

Results: Confounding of follow-up time with recurrence rates can be demonstrated with Warren et al. paper. The abstract concludes, "Permanent synthetic mesh placed in an extraperitoneal position is not only safe for VHR…, but it confers a significantly lower rate of surgical site infection and recurrence compared with biologic or bioabsorbable meshes."

A closer look at the paper shows comparisons of recurrence rates between the mesh materials with a range of median follow-up times from 21 months to 91 months. Results from the Warren paper plotted on the same chart with the Luijendijk/Burger results shows that the biologic mesh and absorbable mesh fall in line with the Luijendijk/Burger polypropylene mesh curve. Additional plots of literature results by material type are provided to visualize the breadth of data and follow-up times for each material compared to the Luijendik/Burger reference. Because it has been established that recurrence rates increase with follow-up time, comparing data at different follow-up times (i.e. 12 months versus 24 months) may be very misleading based on the rapid increase in recurrence rates during the first 24 months of the healing phase. Furthermore, differences in statistical techniques such as intent to treat analysis versus Kaplan-Meier curves and percentage of patients with follow-up can dramatically impact conclusions.

Conclusion: Published ventral hernia literature can be a challenge to review and summarize with many different definitions of terms and analysis methods. Because recurrence rates and follow-up times are interdependent, the author suggests plotting the literature results to better visualize differences in performance that may not be clear when tabulated data or plotting results independently.

Hernia Literature Data Visualization – Is there a better way?

Todd B. Olson[1]

[1]WL Gore and Associates, Flagstaff, AZ, USA

Introduction

Methods and Analysis Rationale

Results

Conclusion

References and Additional Data

P81. Comparison Between ChatGPT And Hospital Provided Post-Operative Instructions For Inguinal Hernia Patients

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New York University Long Island School of Medicine

Background: ChatGPT is an artificial-intelligence large conversational language model chatbot with untapped and promising potential in many applications. Recently, ChatGPT's utility in healthcare education is being explored. Here, we conduct a qualitative study to assess the value of ChatGPT in postoperative instructions in post-inguinal hernia repair patients.

Methods: Two forms of postoperative instructions were obtained, re-formatted and blinded. Form A was created using ChatGPT v3.5. The following phrase was entered: "Please provide postoperative instructions for an adult who underwent an inguinal hernia repair. Provide these instructions at a 7th grade reading level." Form B were the post-operative instructions currently provided to patients from the healthcare institution. Reviewers from both the Acute Care and Minimally Invasive surgical teams at the institution were asked to evaluate both sets of instructions using the Patient Education Materials Assessment Tool Printable Materials (PEMAT-P). The primary outcome was the instructions' "Understandablity" and "Actionability"; a paired independent two-tailed test was used to compare categorical variables between the two forms.

Results: Overall, there were six survey responses for both forms, for a total of 12 responses. For Form A, the Understandability scores ranged from 41.1% to 100% ($\bar{x}$=78.3%) and Form B, 61.5% to 100% ($\bar{x}$=81.9%). Actionability scores for Form A ranged from 42.5% to 100% ($\bar{x}$=67.1%) and Form B, 50% to 100% ($\bar{x}$=76.7%). While institution instructions score appeared higher for both Understandability (p=0.57) and Actionability (p=0.36), this did not result in any significant difference.

Conclusion: ChatGPT provided overall similar quality material to the current institutional instructions. It was limited, however, in providing patients with actionable instructions specific to medication instructions or wound care. It is important to acknowledge the limitations of t-test and low sample size (less than 15), which can reduce the test's power and make it less likely to detect true differences in the data. Future studies will include a larger sample size as well as patient experience surveys.

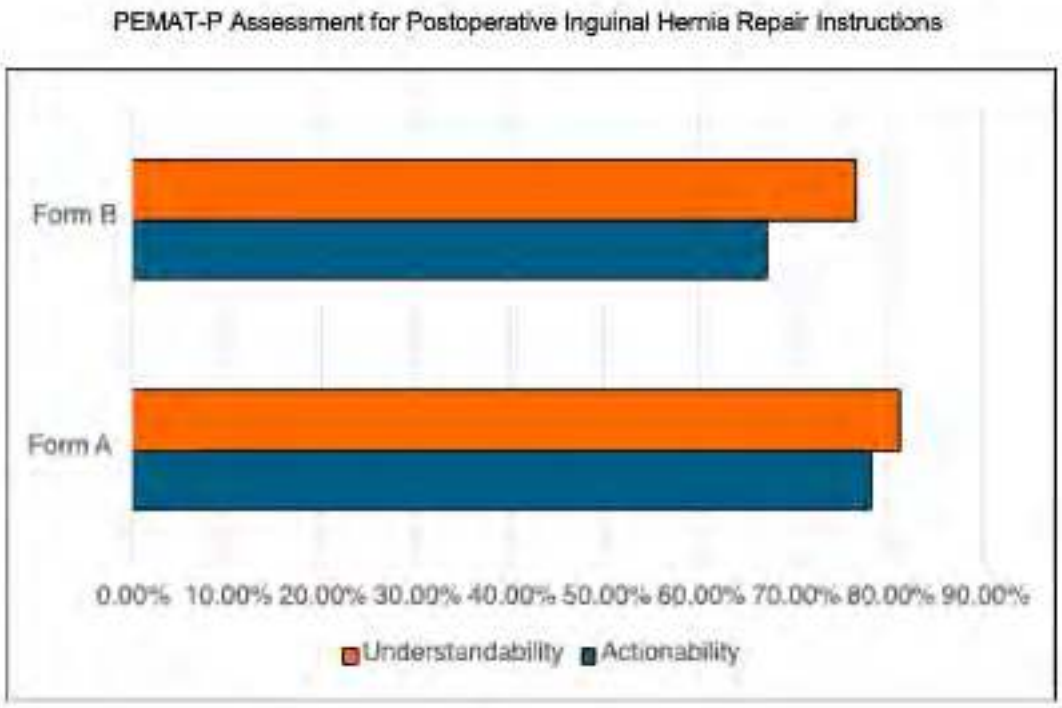


Figure 1. The average "Understandability" and "Actionability" between Form A and Form B

P82. Is There Any Learning Curve And Standardization For Laparoscopic Hernia Repair– eTEP In Ventral And Inguinal Hernia For A Surgeon?

V Patil, N Baste
SMBTIMS RC Dhamangaon Nashik

Background: The Extended Totally Extraperitoneal (eTEP) is a novel and advanced approach for the treatment of ventral and inguinal hernias. ETEP is a minimally invasive approach that can be performed laparoscopically or with robotic assistance, rather than being an open surgery technique. This technique was first introduced by Jorge Daes in 2012 and has since been adapted and refined by other surgeons for various types of hernias, including ventral hernias and inguinal hernia. The eTEP technique is characterized by its minimally invasive approach, which involves creating a large surgical workspace in the extraperitoneal space retromuscular without entering the abdominal cavity. This is achieved with skill full dissection in retromuscular plane and placement of large surgical mesh to cover the defect under all aseptic precautions to avoid the post-operative complications.

Methods: All patients presenting to surgery OPD with diagnosis of ventral hernias and inguinal hernias. Basis of diagnosis being USG (abdomen pelvis) who underwent laparoscopic hernia repair with eTEP between March 2023 to March 2024 by a single surgeon in tertiary care hospital in north Maharashtra. Study was conducted prospectively depending on the available database. The study was assessed for operative time, intra-operative bleeding and postoperative complications and recurrence for total 101 cases of ventral(49 cases) and inguinal(52 cases) hernia between initial 50% and later 50% cases done by a single surgeon at tertiary hospital in north Maharashtra.

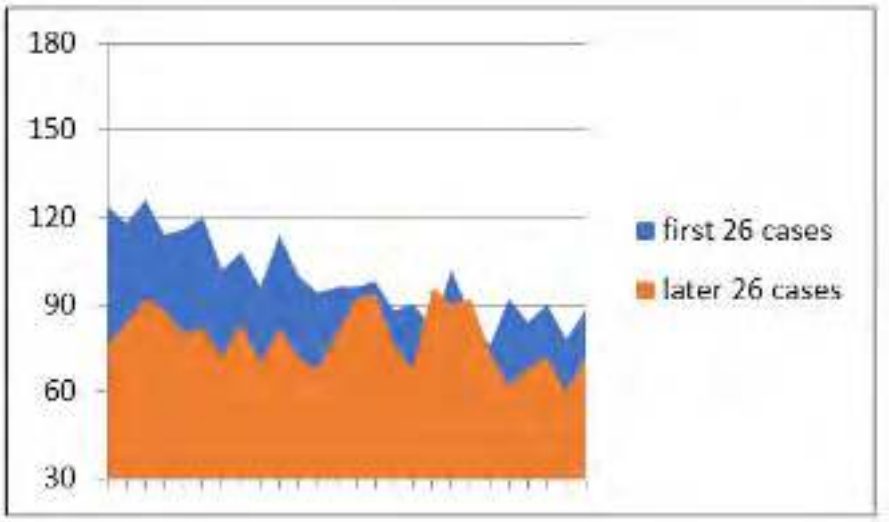
Results: Parameters
1) operative time.
2) Intra operative complications.(Pneumoperitoneum)
3)post operative seroma formation and recurrence, mesh infection.

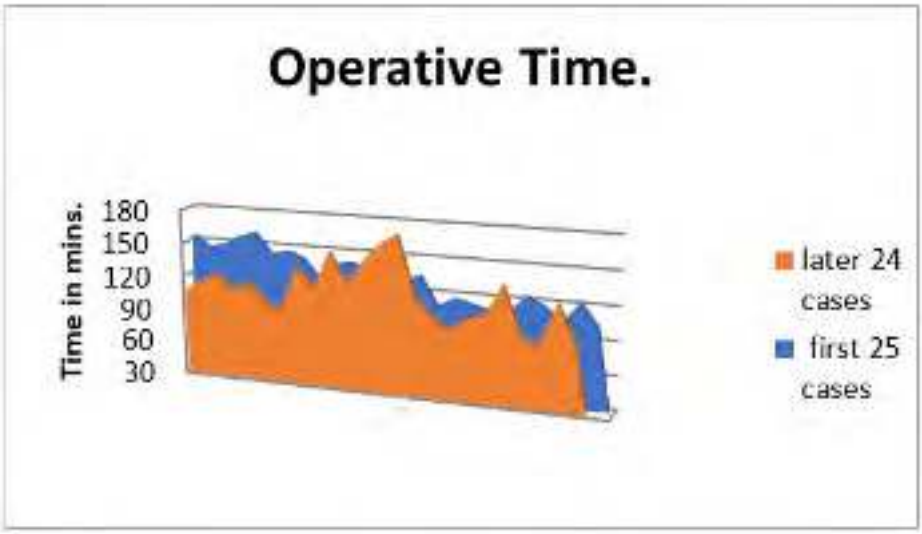
1) Operative time – operative time was assessed seperately for ventral and inguinal hernia.
Ventral Hernia

For ventral hernia
1)operative hernia - first 25 cases were compared with later 24 cases.
The mean time for first 25 cases was 129.6 and later 24 cases was 112.8
2) Intra operative complications like pneumoperitoneum for first 25 cases it was 24% which got reduced to 8.2% for last 24 cases.
3) No post operative complication to any patient like seroma formation or recurrence or mesh infection.

Inguinal Hernia.
1) Operative time – Average mean operative time for first 26 cases was 99.15 mins which was reduced to 78.69 mins in later cases.
2) Intra operative complications like pneumoperitoneum the rate for first 26 cases was 30.7% which got reduced to 11.5% in last 26 cases.
3) Postoperatively there was seroma formation in 1patient and 1 recurrence for bilateral inguinal hernia in first series of 26 patients, however no any postoperative complications in last 26 cases.

Conclusion: with the help of this study we came to conclusion that laparoscopic hernia repair has a steep learning curve. Which depends on various factors like surgical training, repeatedly watching operated videos by same surgeon, camera quality, hand eye co-ordination and the most important is laparoscopic maturity.





Parameters	First 26 cases (n=26)	Last 26 cases (n=26)
1) Operative time (averg) in minutes	99.15 mins.	78.69 mins.
2) Intra op complications (Pneumoperitoneum)	8 cases (30.7%)	3 cases (11.5%)
3) Post op complications (Seroma, mesh infection, recurrence)	1 case – seroma (3.8%) 1 case – recurrence (3.85%)	No any complication

P83. Correlation Between Obesity With The Risk Of Obstruction In Lateral Inguinal Hernia

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Background: Obesity is a state of excess weight due to accumulation of fat in adipose tissue so that can increase intra abdominal pressure. Increased intra abdominal pressure can increase the risk of obstruction in the lateral inguinal hernia. This study aims to determine the correlation between obesity and the risk of obstruction in patients with lateral inguinal hernia.

Methods: This study uses analytical research design with cross sectional approach by involving 152 patients with lateral inguinal hernia from January 2018 to August 2019. The technique of this research is a consecutive sampling and data was obtained from patient's medical records. The samples then analyzed with Chi-Square and the stratification confounding factors with Mantel-Haenzel.

Results: Table 1. Characteristic of Samples
Table 2. Confounding Variable Test
Figure 1. Characteristic of Samples
Figure 2. BMI Distribution
Figure 3. Age Distribution.
From 152 patients, 71 (46.7%) are obese and 81 (53.3%) are non obese, 59 (38.8%) are with obstruction, 93 (61.2%) are without
obstruction. There are correlation between obesity and the risk of obstruction in lateral inguinal hernia ($p = 0.032$, OR = 2.058, CI=
1.061-3.993). The analysis of Mantel-Haenzel shows that a history of hard working ($p = 0.125$) and a history of alcohol($p = 0.077$) as
confounding. The Breslow-Day homogeneity analysis shows that history of prostate enlargement ($p = 0.003$) as a confounding variable.

Conclusion: Obesity has a relationship with the risk of obstruction in patients with lateral inguinal hernia, with a confounding variable history of hard working, alcohol, and prostate enlargement.

P84. Bowel Obstruction Due To Visceral Block As Late Complication Of Intraperitoneal Mesh Coating

J Muradov
Owensboro Health

Background: Coated meshes were designed for intraperitoneal use and claimed to diminish the risk of adhesive complications. Experimental models show degradation and decreased efficacy of coatings over time (pubmed.ncbi.nlm.nih.gov/19224521) and recent clinical studies demonstrate an increased infection rate with the use of coated meshes (pubmed.ncbi.nlm.nih.gov/35220145). We present two cases of unusual long-term complications of coated meshes. Both patients experienced bowel obstructions due to visceral blockage 10+ years after their initial surgeries, raising concerns about the efficacy and safety of these products over time.

In the first case, a 68-year-old man presented with symptoms of a small bowel obstruction, which had temporarily resolved with a contrast challenge a week prior. He had a history of ventral hernia repair using intraperitoneal mesh over a decade ago. During a robotic-assisted laparoscopic examination, a dense fibrous peel over the mid-small bowel was identified as the cause of the obstruction. No prior surgical report was available; however, an exposed mesh label was found (Surgimesh - Aspide Medical).

The second case involved a 63-year-old patient who presented with an acute episode of bowel obstruction. His history included an open umbilical hernia repair in 2011 using a Bard Ventralight mesh. The patient failed to improve with nasogastric decompression, and robotic-assisted laparoscopy was performed. This patient also had a similar fibrous coating around the central viscera. Interestingly, there were no adhesions of the small bowel to the mesh itself.
In both cases, lysis of adhesions was performed, leading to a resolution of symptoms, and pathology confirmed fibrous tissue formation.

A case report dated 1999 (pubmed.ncbi.nlm.nih.gov/10613487) describes sepra film-induced peritoneal inflammation. Our findings of prominent chronic inflammation causing bowel obstruction could be explained by a delayed inflammatory response or an individual immunologic reaction to the coating material. These cases highlight the need for a more cautious approach to the use of coated meshes in hernia repairs, considering their long-term risks and benefits.

Moving forward, it may be beneficial to investigate the long-term outcomes of different coated meshes and explore new materials that maintain their efficacy and safety over time. This could help improve patient outcomes and guide future surgical practices

P85. An Innovative Method Of Surgical Training - 3D Anatomy Imagination: Is It Helpful For Improving Surgical Skills Of Residents To Perform Hernia Repairs?

V Patil, N Baste , A Mahajani, S Mustare
SMBT IMS RC Dhamangaon Nashik

Background: Surgical training outside operative rooms and knowledge of basic surgical anatomy is essential for every trainee resident learning surgery. Our surgery department has come up with an innovative idea of teaching surgery to residents by provoking 3D ANATOMY imagination. Objective of this study is to evaluate whether this new concept is beneficial and effective in upgrading the knowledge of surgical anatomy of trainee residents and improving their skills.

Methods: 4 phases have been conceptualised to provide step by step approach to develop the imaginative capacity of residents 1) Pre-operative discussion and teaching session of anatomy and possible steps of planned surgery by the operating surgeon and faculty, a day before surgery. 2) Pre-operative video sessions of planned surgery by different surgeons from social media handles like you-tube. 3) Intra-operative demonstration of the actual surgical anatomy 4) Post-operative discussion by combining the details of all the sessions to construct a final picture of the imagined anatomy.

Results: Total of 20 residents were involved in this study out of which one was excluded due to health issues. Out of the remaining 19 residents, 18 gave a positive feedback like increased confidence, reduced duration of surgeries, reduced complications, increased understanding of the subject and increased interest.

Conclusion: This innovative way of teaching and learning along with the traditional methods of surgical teaching, has proved to be successful and effective in improving the surgical knowledge and skills of trainee resident to a significant degree.

P86. Robotic Transabdominal Preperitoneal Repair Of Petit'S Hernia

D Park, E Cheng, K Jay, D Pastore
Inspira Medical Center

Background: Lumbar hernias are considered relatively rare, accounting for less than 3% of hernias with fewer than 400 cases reported in medical literature. Of the available data, approximately 10% of lumbar hernias are considered congenital, 25% are acquired via traumatic event, 50-60% are iatrogenic in nature and 5-15% are spontaneous. While it has been documented that robotic transabdominal preperitoneal repair is more favorable in patients with small defects and increased wound morbidity risks, only few cases have been reported on the use of a robotic approach to incisional hernia repairs let alone primary lumbar hernia repairs, regardless of defect size.

Methods: We highlight a rare case of a young 32-year-old male presenting with a symptomatic Petit's hernia following a traumatic accident. The patient agreed to a minimally invasive repair approach of this acquired lumbar hernia. The Da Vinci robot was utilized for a transabdominal approach with closure of hernia defect and extraperitoneal mesh placement.

Results: After obtaining consent, the patient was placed under general anesthesia, and the abdomen was entered in the left upper quadrant. Under direct visualization, two additional ports were inserted into the left abdomen. The da Vinci robot was docked in place. The left inferior lumbar hernia was visualized, immediately adjacent to the descending colon at a level just above the iliac crest. The peritoneum and transversalis fascia were incised and a pocket was dissected for mesh placement. The hernia sac was dissected free from the surrounding tissues, and reduced back into the abdominal cavity. Dissection was continued into the retroperitoneum until the psoas major muscle was exposed. The lumbar hernia defect measured 7 x 3 cm in size, and was bordered inferiorly by the iliac crest and superiorly by the transversus abdominis. Posteriorly, the ilioinguinal nerve was seen to traverse the quadratus lumborum, extending to the edge of the hernia defect. Additionally, the genitofemoral and lateral cutaneous femoral nerves were visualized in their expected locations and protected from injury throughout the case. The hernia defect was then imbricated using a continuous suture. We elected to reinforce the repair using medium weight polypropylene mesh in the extraperitoneal position. The mesh was secured to the retroperitoneum circumferentially and the peritoneal flap was closed over the mesh.

Conclusion: Lumbar hernias are a rare type of hernia, requiring a high clinical suspicion to identify as presentation and symptoms vary case by case. Lumbar hernia diagnosis is suggested by the appearance of a lumbar mass and low back pain and can be effectively confirmed by CT scan. As a function of the rarity of lumbar hernias, there is no consensus on appropriate surgical treatment. This complexity is likely further impacted by a lack of randomized controlled trials on lumbar hernias. The lack of consensus results in difficulties that start with diagnosing and reside through treatment selection itself. Regarding treatment, the various accepted interventions include primary repair, tissue flaps, and laparoscopic approaches. Despite inadequate consensus on surgical technique, this case reports the successful and effective use of robot-assisted lumbar hernia repair to treat a Petit hernia.

P87. Progression Of Obturator Hernia - Evaluation Focusing On Skeletal Muscle Mass And Kyphosis

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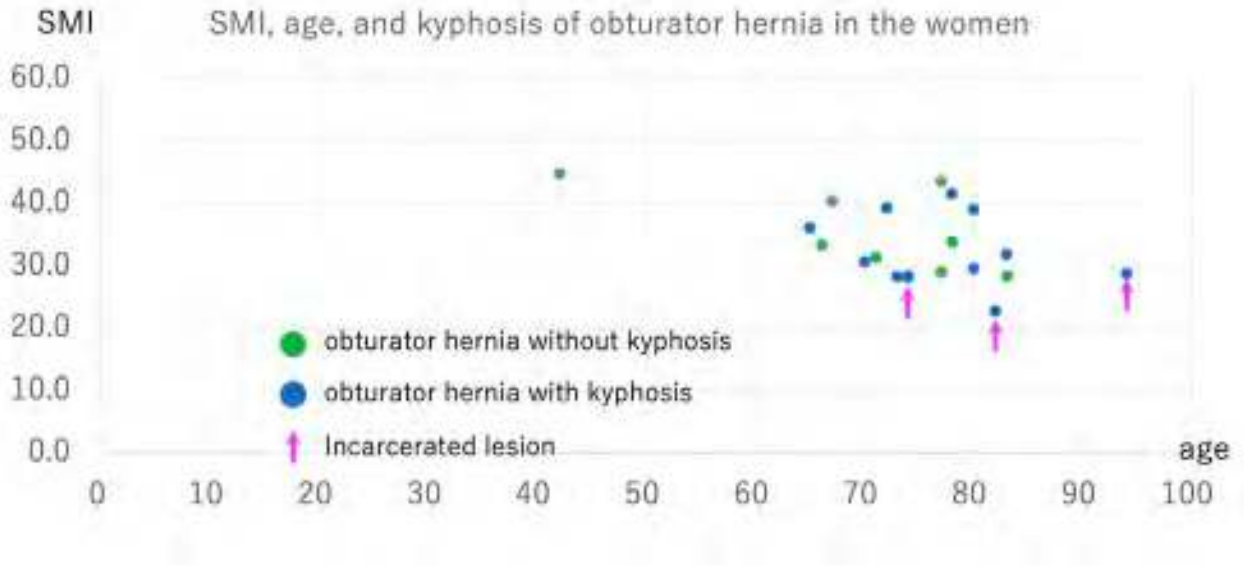
Kudanzaka Hospital

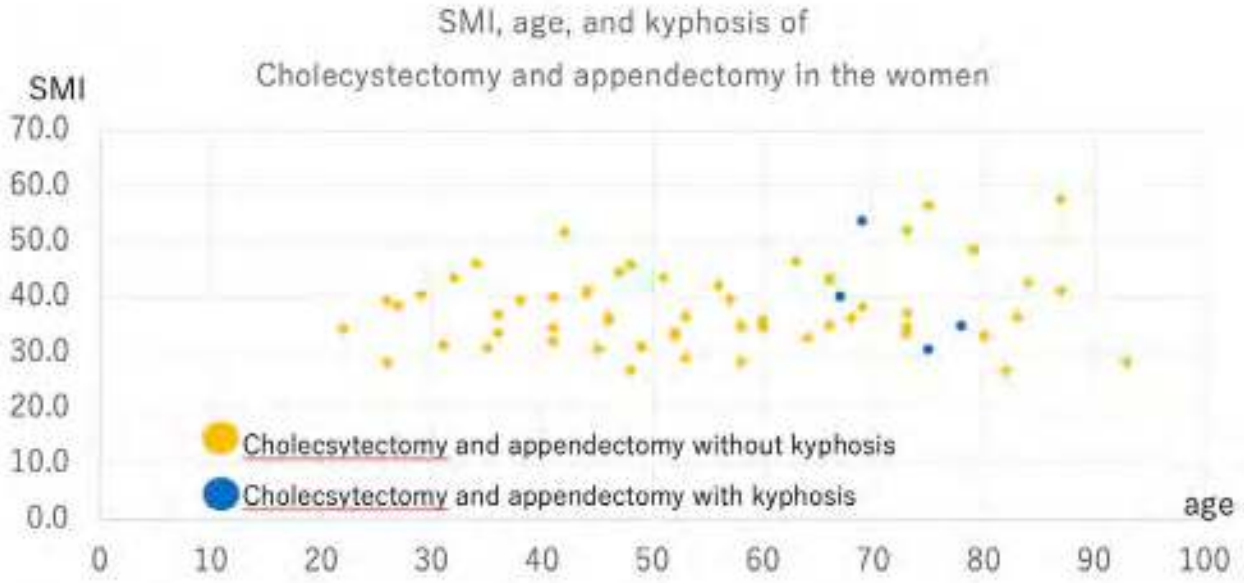
Background: We have previously reported stepwise progression of obturator hernia depends on the radiographic and laparoscopic finding, from small peritoneal dimple to permanent peritoneal cave. We have also reported that the prevalence of obturator hernias in elderly women is more common than that of lateral hernias. However, the incidence of incarcerated obturator hernia has been small. In this study, we will focus on volume of skeletal muscle mass since obturator hernia has been regarded as common in elderly thin women with multiple history of childbirth by previous reports.

Methods: 40 patients of female inguinal hernia treated between 2016 and 2023 who received preoperative CT were enrolled into this study. Patients were divided into two groups: Surgery for obturator hernia (3 with incarceration and 17 without incarceration) (Group A) and 20 cases other than obturator hernias (Group B). Volume of skeletal muscle were evaluated by Skeletal Muscle Index (SMI) which was calculated from the areas of skeletal muscles at the level of L3 by CT images. Body mass index (BMI) was also calculated. Among Group A incarcerated and non-incarcerated cases were also compared. Additionally, 61 cases of female patients who received cholecystectomy and appendectomy during the same period were designated as Group C and compared with Group A. Furthermore, since the incarcerated cases were complicated by kyphosis, we also examined the coexistence of kyphosis.

Results: In Group A, the age range was 42-94 years (mean 74 years), BMI 16-24 (mean 19.3), and SMI 22-45 (mean 33.4), with 75% classified as having reduced skeletal muscle mass (below 38) on CT. In contrast, for Group B, the mean age was 51.6 years (range 24-89), mean BMI 20.5, and mean SMI 36.4, with only age showing a significant difference. Regarding the 3 incarcerated cases, the mean BMI was 18, and SMI was 22.7-28.7, indicating a marked reduction in skeletal muscle mass. All 3 cases also exhibited kyphosis. In Group C, the age range was 22-93 years (mean 56 years), BMI 16-39 (mean 22.8), and SMI 27-58 (mean 38.1). Compared to Group A, both BMI and SMI were significantly higher, and age was younger in Group C. The prevalence of kyphosis was 55% in Group A, 15% in Group B, and 7% in Group C, being higher in Group A. However, when limited to cases aged 60 years or older, the prevalence was 58% in Group A and 50% in Group B, both being high, while it was 15% in the low frequency Group C.

Conclusion: Clinically asymptomatic obturator hernias in elderly women have a prevalence comparable to external inguinal hernias, with no major differences in body composition. However, incarcerated cases exhibited a marked reduction in skeletal muscle mass, reflecting that the hernia space composed of muscles is more vulnerable to intra-abdominal pressure. Conditions that increase intra-abdominal pressure, such as kyphosis, are also thought to contribute to hernia progression. It is suggested that asymptomatic obturator hernia cases may develop into an incarcerated condition with age-related skeletal muscle loss and kyphosis.


SMI
SMI, age, and kyphosis of obturator hernia in the women
60.0
50.0
40.0
30.0
20.0
10.0
0.0
obturator hernia without kyphosis
obturator hernia with kyphosis
Incarcerated lesion
age
0
10
20
30
40
50
60
70
80
90
100


SMI, age, and kyphosis of
Cholecystectomy and appendectomy in the women
SMI
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Cholecsytectomy and appendectomy without kyphosis
Cholecsytectomy and appendectomy with kyphosis
age
0
10
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50
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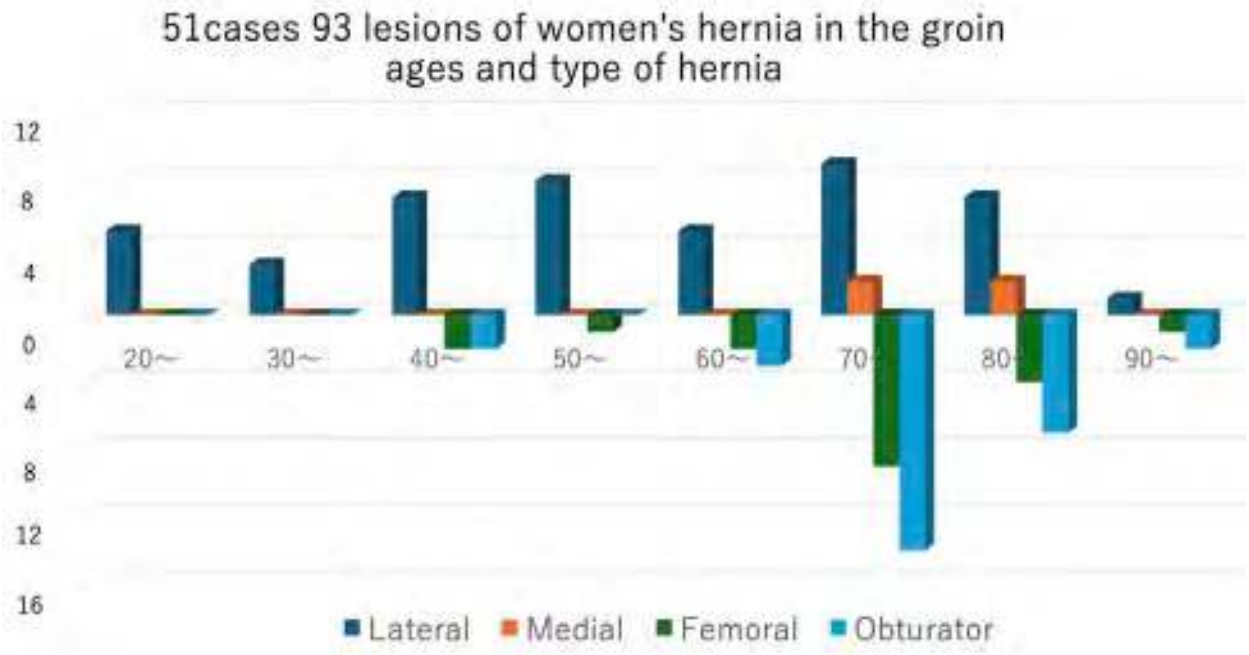
51cases 93 lesions of women's hernia in the groin
ages and type of hernia
12
8
4
0
4
8
12
16
20～
30～
40～
50～
60～
70～
80～
90～
Lateral
Medial
Femoral
Obturator

P89. Loss Of Domain Hernia, An Early Experience

R Punjani
Fortis Hospital

Background: Large Ventral Hernia needs to have midline closure for optimal functional outcomes. This necessitates myo-fascial release by one of the component separation techniques. Significant number of cases of large ventral hernia have an element of Loss of Domain (LODH). LODH needs ancillary procedures in addition, for "safe" midline closure. Some of the cases with massive LODH also need organ resection. We present our experience with the cases of LODH.

Methods: Between 2016 till date, we have operated Five fifty cases (550) of large ventral hernia with Open bilateral Transverse Abdominis Release (TAR) by Novitsky's technique.
Eighty-five cases were documented LODH (Hernia sac Volume / Total peritoneal volume, Sabagh Index > 20 on CT scan). All patients were pre-optimized before surgery. (BMI 4.0, Pre-habilitation done).
Forty of them did not opt for ancillary procedures & were subjected to TAR.
Forty-five cases, underwent injection of Botulinum toxin A (BTA). Diluted 300 international units of BTA were injected in the bilateral lateral muscles under sonography guidance, one month before surgery.
Twenty-two of them also underwent Progressive Pneumoperitoneum (PPP) two weeks before surgery. Intraperitoneal catheter was placed & atmospheric air was injected on alternate day, in progressive manner till total volume of air was three times hernia sac volume.
Eighteen cases did not get PPP as they were unfit or unwilling.
All these Eighty-five cases were then subjected to TAR. Complete mid-line closure was aimed at, but few had bridging up to 5 to 7 cm, which was accepted.
Four of them had massive LOD & very wide defects which could have massive bridging despite BTA + PPP + TAR. We did an organ resection (Two Hemicolectomy & two total colectomy) & achieve midline closure. None in the resected group had any complications.

Results: Total cases of LOD 85
Group 1) TAR, no ancillary procedures, 40 cases. All midlines could be closed except 5 (12.5%).
Group 2) BTA + TAR 23 cases, all midline could be closed except 2 (8.69%).
Group 3) BTA + PPP + TAR 22 cases, all midline could be closed except 1 (4.54%).
Group 4) BTA + PPP + TAR with organ resection 4 case, all midline could be closed, no bridging.

Conclusion: Ancillary procedures, BTA & PPP, are beneficial in LODH to achieve safe midline closure & reduce incidence of bridging. Organ resection can be added in select group of cases to achieve safe midline closure & avoid massive bridging.

P90. Complex Parastomal Hernia Repair——The Critical Decision Making

B LI
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Background: Development of parastomal hernias (PH) is very common after stoma formation and carries a risk of subsequent bowel incarceration or strangulation. The management of PH remains a challenge for the hernia surgeons, and there are currently no standardized guidelines for the treatment of PH. Even more difficult is the management of complex parastomal hernias (CPH).

Methods: Complex parastomal hernias (CPH) include PH with large fascial defect, loss of domain, recurrent PH, PH with multiple operative history, Type Ⅳ PH（combined hernia）, PH with associated infections and PH that has resulted in bowel perforations or fistulas, last but not least, PH require stoma re-do for circumstances such as stoma prolapse/ infected skin/ tumor recurrence/ combined operation.

Results: This narrative review discusses the highly individualized comprehensive therapeutic techniques for CPH, and illustrates this top challenging domain by several extreme complex PH cases, then elucidates the critical decision-making tactic in this dilemmatic scenario.

Conclusion: The optimal treatment of complex PH requires multidisciplinary expertise involvement and the intraoperative critical decision making.


What we require for the complex?
整形外科
plastic
胃肠
GI
泌尿
Urinary
腹壁重建术
AW
Reconstruction
胸科
Thorax
骨科
Ortho-
妇科
Gyn-

P92. Liposarcoma Of The Spermatic Cord Mimicking An Inguinal Hernia: Our Experience And The Current State Of Art

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Helios St. Elisabeth Hospital Bad Kissingen

Background: Liposarcoma is a rare soft tissue malignancy with aggressive behavior and poor prognosis. Most malignant paratesticular tumors are sarcomas but 5 to 7% are liposarcomas. Liposarcoma of the spermatic cord (LSC) is a rare condition characterized by a painless inguinal or scrotal mass. Obviously only about 200 cases have been previously reported in the literature. These tumors are often mistaken for common scrotal swellings, such as hydroceles and hernias.

Methods: The present work describes the case of a 88-year-old man with liposarcoma of the spermatic cord who arrives at our institution with painless left sided scrotal hernia. The patient was subsequently surgically treated with excision of the tumor, plus hernial plastic according Lichtenstein Technique. Histological examination revealed a mature adipocyte neoplasm whose morphological and molecular characteristics are consistent with the diagnosis of well-diferrentiated liposarcoma G1.

Conclusion: Spermatic cord liposarcoma is an extremely rare malignancy. It's not easy to identify as it can simulate an inguinal hernia, hydrocele, lipoma, funicular cyst, or testicular tumor. Diagnosis is usually established postsurgery. We also provide a literature review of other cases that have been reported.


cm 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17


cm 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

P93. Complete Abdominal Wall Reconstruction In A Patient With Chronically Infected Mesh

O Sayed Taddeo Ghani, V Henrique Almeida Guimarães, A Coutinho Barros de Brito, A Hiroshi Fernandes Murakami, C Augusto Vianna Birolini
Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

Background: A 53-year-old male presented to the HCFMUSP's Abdominal Wall Clinic with a history four prior surgical procedures in 2012 due to complications of acute appendicitis in another hospital. Three days after the first surgery, he developed a subphrenic abscess, which required an exploratory laparotomy and a peritoneostomy was performed. In sequence, he underwent two more laparotomies to ensure abdominal sepsis treatment until peritoneal cavity was closed with a mesh. He was hospitalized for a total of 64 days.
He had no comorbidities other than being an active half-pack a day smoker for the past 42 years. His BMI was 29,3 kg/m². The initial physical examination, in June/2023, showed scarified wound, areas of exposed mesh and a contained eventration, occupying approximately one third of anterior abdominal wall's surface. The patient referred limitating pain for laboral activities and purulent discharges in the exposed mesh areas.
A complete abdominal CT was performed, revealing 16cm x 13cm discontinuity in the abdominal wall, lateralized rectus abdominis muscles and a mesh restraining the left hepatic lobe and the small intestines. There was no fistula or obstruction.
On March 23 of 2024 he was admitted at HCFMUSP for total abdominal wall reconstruction. Surgical access was through an incision surrounding the scarified area. That skin and the previous mesh were removed, showing significant signs of fibrosis, infection and necrosis. Fragments of the mesh were sent to microbiological culture. There were intense adhesions of the mesh to the peritoneum that were carefully separated. Then, the abdominal cavity was explored, separating intestinal adhesions. An opportunistic cholecystectomy was performed. Primary abdominal wall closure was possible after performing extensive bilateral Gibson's relaxing incisions, using small bites technique with polyglactin 0. Subcutaneous tissue was dissected from the aponeurosis until the anterior axillary line, preserving the perforating arteries, avoiding postoperative skin necrosis. An onlay polypropylene mesh was fixed with polyglactin 2-0. Healthy subcutaneous tissue and skin were closed either.

There was no need of ICU after surgery. Deambulation and diet were re-established on the first postoperative day. Oxacillin was administered for 7 days as empirical antibiotic therapy, until mesh cultures revealed multisensitive Proteus mirabilis and Pseudomonas aeruginosa. Subcutaneous drains presented diminishing serosanguineous discharges, being removed in the 7th postoperative day, when the patient was discharged receiving oral Ciprofloxacin for 7 days.

In his first post-operative follow-up, patient was asymptomatic. Physical examination showed no signs of infection, hernia recurrence or mesh exposure.

The current medical literature tends to recommend complete excision of the infected mesh when approaching this patient's profile. However, there is no consensus protcol to reconstruct the abdominal wall. Shubinets et al. (1) describe good outcomes with the single-stage approach and the use of retromuscular biological meshes achieving an hernia-free state. Devin, C.L(2), however demonstrates that polypropylene meshes are safe for infected sites repairs, analyzing various mesh positions.

In conclusion, this case reported aims to reinforce that, as demonstrated by Birolini, C. et al(3)., synthetic onlay mesh presents good results in infection control, non-recurrence of hernias, and low rates of severe complications.

P94. Robotic Amyand's Hernia Repair In A Community Hospital Setting

D Park, J Park, S Liu, E Cheng
Inspira Medical Center

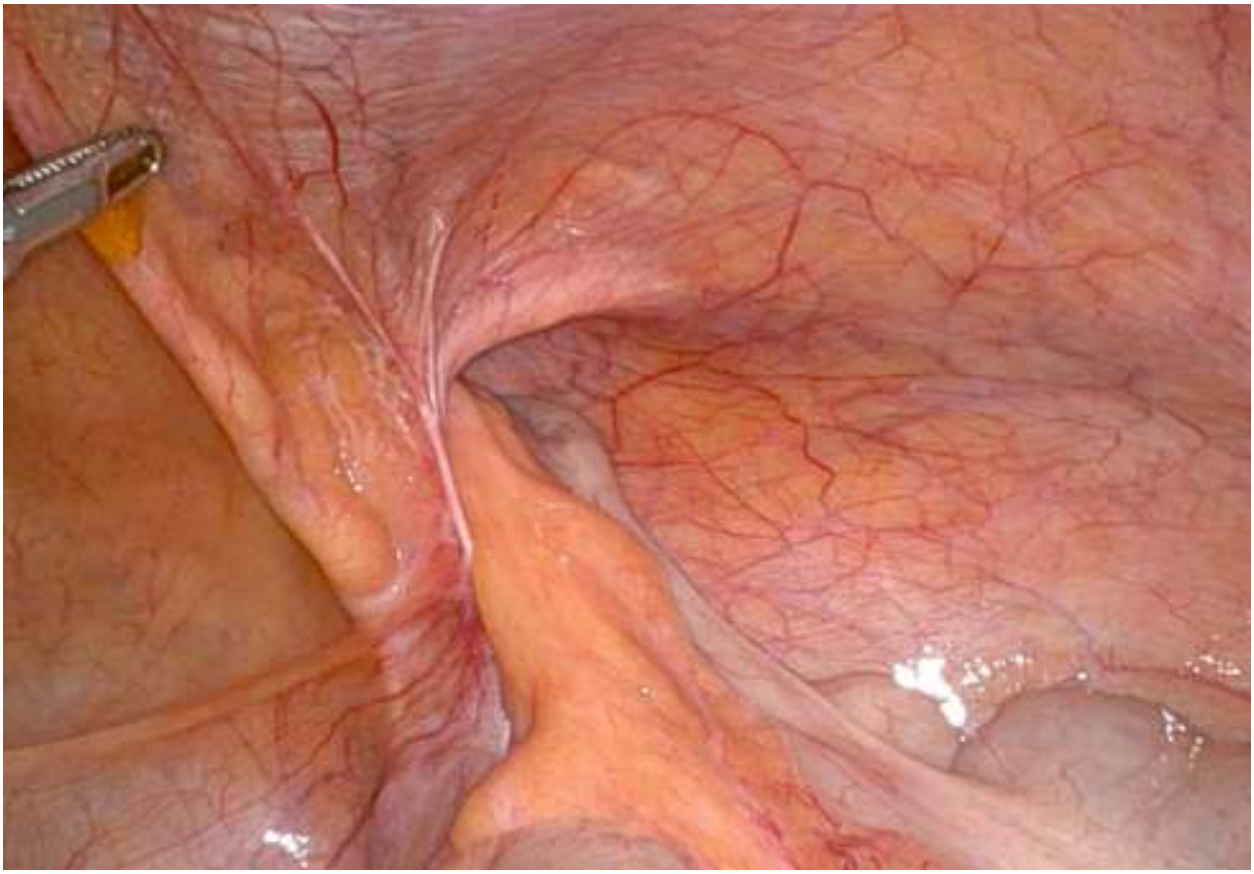
Background: Amyand's hernia is a rare (incidence 0.19-1.7%) presentation of an appendix discovered within an inguinal or femoral hernia sac. This condition is three times more common in pediatrics than in adults due to their patent processus vaginalis. Historically, this type of hernia was first coined in 1953 after the first documented case by a military surgeon, Claudius Amyand in the 18th century. Several attempts have been made to classify and standardize the optimal treatment methods. Most recently, Losanoff and Basson published their version of Amyand's hernia classification. Type 1 is described as an inguinal hernia containing a portion of appendix and the corresponding management is a simple hernia reduction and mesh hernia repair. Type 2 is described as localized appendicitis within the hernia sac but without evidence of abdominal sepsis. Surgical management requires performing an open appendectomy through the hernia and primary repair of hernia defect without prosthetic mesh. Type 3 is described as acute appendicitis with abdominal wall sepsis. Management includes open laparotomy, appendectomy, and primary repair of hernia defect without prosthetic mesh. Type 4 is acute appendicitis with concomitant abdominal pathology. This is managed similarly to Type 3 with management of abdominal pathology. This case explores a completely incidental finding of a Type 1 Amyand's hernia.

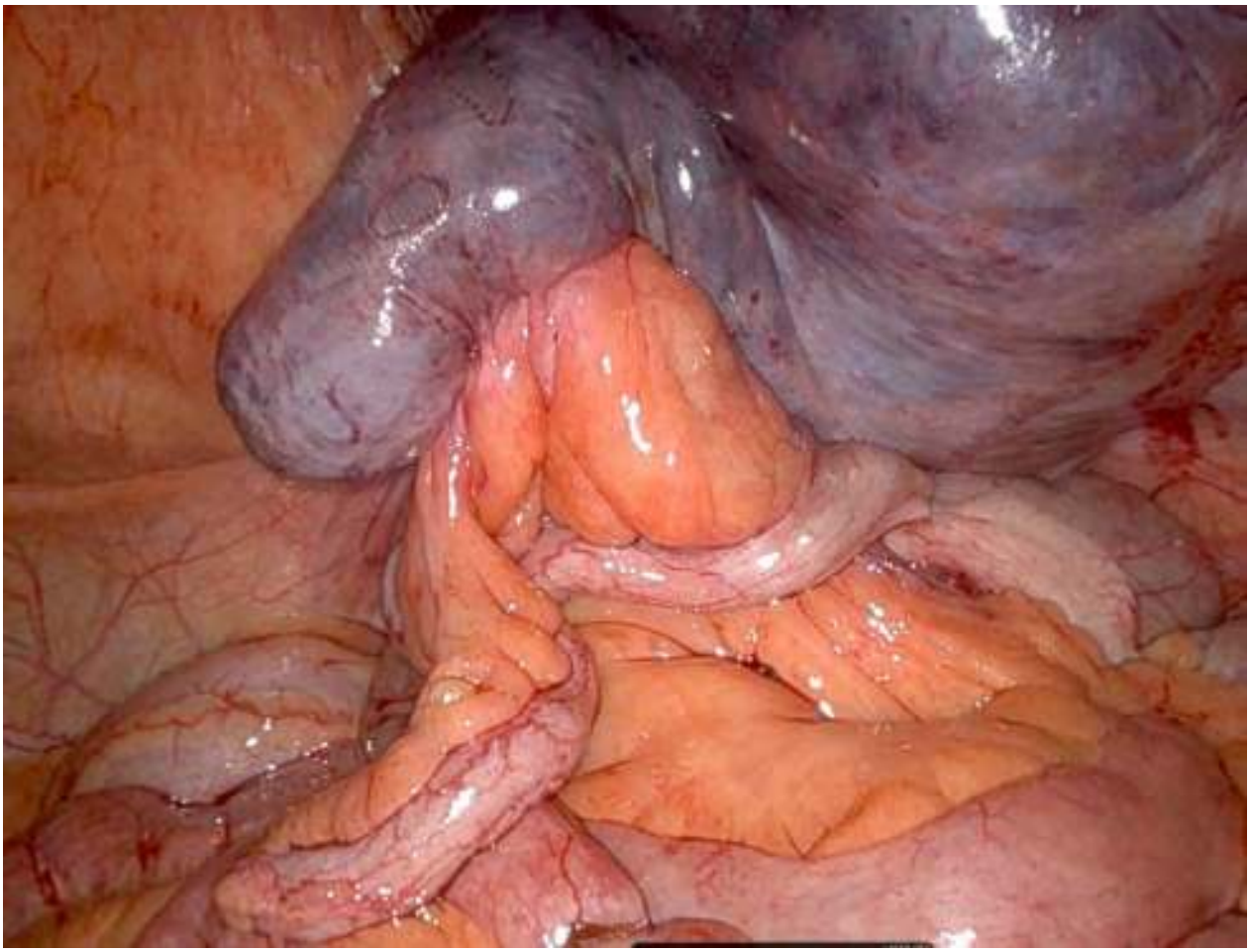
Methods: Patient is a 54 male with a past medical history of tobacco use and no previous abdominal surgical history who presented for an elective inguinal hernia repair. He reported a chronic reducible right inguinal hernia with worsening pain and swelling. After outpatient evaluation, the patient agreed to a robotic assisted laparoscopic repair of right inguinal hernia.

Results: In the operating room, the right indirect inguinal hernia was noted to contain a vermiform appendix that was without acute inflammation. The appendix was easily reduced from the hernia sac and the intended right indirect hernia repair was completed without complication. The patient tolerated the procedure well and has been recovering well post-operatively.

Conclusion: Amyand's hernia has been reported since its discovery, however, the incidence remains low. While there has been only one other previous case reported in 2016 that was completed using a robotic approach, we report the second robotic-assisted Amyand's hernia. Despite the rarity of an Amyand's hernia, there is not a single gold standard for surgical approach. Based on the most current classification and views on prophylactic appendectomy, we focused on performing a straightforward herniorrhaphy without an appendectomy. Any high index of suspicion for this condition with any acute inflammatory evidence warrants surgical intervention.

With this case report, we would like to highlight the robotic approach performed in a community hospital setting and bring to attention the need for further research in more robust guidelines of repair and approach in the setting of an unexpected anatomical variation. We also would like to bring to attention to the use of robotic approach in repair of an Amyand's hernia. With the current limited guidelines in approaching Amyand's hernia as shown by multiple attempts at classification, further investigation the management should be explored.





P95. Minimally Invasive Approach To Management Of Posterior Rectus Sheath Breakdown & Interparietal Hernia After Robotic eTEP Retrorectus Hernia Repair

V Grille, E Sodomin, N Eng
Penn State Health Milton S. Hershey Medical Center

Background: Interparietal hernias are rare abdominal wall defects in which intraabdominal contents protrude between layers of the abdominal wall. There are three subtypes which are classified according to the anatomical location of the hernia sac - preperitoneal, interstitial or superficial. Preperitoneal is when the hernia sac is between the peritoneum and transversalis fascia; interstitial is between the transversalis fascia and the transversalis, internal oblique or external oblique muscles; and superficial is between the aponeurosis of the external oblique muscle and the skin. These are often diagnosed radiographically as they can be difficult to diagnose by physical exam due to the intact superficial layers of the abdominal wall. When performing any component separation based ventral hernia repair, the layered closure of the abdominal wall allows for potential risk of dehiscence and subsequent development of an interparietal hernia. This can lead to incarceration and possible strangulation of intraabdominal viscera between the mesh and posterior sheath, as well as possible development of enterocutaneous fistula from the direct contact between the permanent mesh and bowel. In any patient undergoing a retromuscular repair, there should be a high index of suspicion if a patient develops obstructive symptoms or new abdominal bulges in the postoperative period. They should immediately undergo CT imaging or diagnostic laparoscopy for evaluation. Our case presents a 65 year old female who underwent a robotic assisted eTEP bilateral retromuscular repair with mesh for symptomatic ventral hernias. Her postoperative course was complicated by a "coughing fit" and subsequent disruption of the posterior sheath. A CT scan was done on POD15 that demonstrated a 5x2cm interparietal hernia containing a loop of bowel and fat. She was subsequently taken back to the OR for a robotic lysis of adhesions with intraperitoneal underlay mesh placement. Upon entry into the abdomen via hasson technique in the left upper quadrant, the loop of bowel seen on CT scan had spontaneously reduced and the defect contained omentum only. Once adhesions were lysed, the mesh was noted to remain incorporated on the posterior aspect of the rectus muscles. The posterior sheath edges were circumferentially freed and a 6x4cm defect was identified, which was unable to be closed without tension. The edges of the posterior sheath were tacked to the mesh using 2-0 vicryl stitches and a Phasix ST mesh was used to cover the defect. This case demonstrates a minimally invasive option to manage this postoperative complication. Although the posterior sheath was unable to be re-approximated primarily, the placement of the phasix ST mesh allowed for coverage of the defect to avoid any bowel incarceration/strangulation, along with creating a barrier between the permanent mesh and the underlying bowel to prevent fistula development.

P96. A Clinical Quality Improvement (CQI) Project For Robotic Ventral Hernia Repair (RVHR): Assessing The Impact Of Low-Pressure Pneumoperitoneum

A Holland, W Lorenz, P Colavita, B Alvoid-Preston, R Forman, B Ramshaw, V Augenstein
Atrium Health Carolinas Medical Center

Background: Low-pressure pneumoperitoneum can potentially improve short-term outcomes for patients undergoing robotic ventral hernia repair. Traditional insufflation devices are typically used at a pressure of 15 mmHg. This level of pressure may impact short-term pain and recovery.

Methods: Using real-world clinical data, a single-site clinical quality improvement (CQI) project is a relatively new way to measure and improve outcomes for any definable patient care process. In this CQI project attempting to improve outcomes for ventral hernia repair patients, one clinical site used a robotic ventral hernia repair (RVHR) approach.

Results: The clinical site had 125 patients (50 females, 53 males). The mean age was 58.5 years (range 22 – 90, SD = 13.24), the mean BMI was 31.91 (range 18.45 – 50.06, SD = 6.60), and there were 17/103 (16.5%) patients with recurrent hernias. To assess the impact of low-pressure pneumoperitoneum, a comparison of patients operated on with AirSeal and without AirSeal is summarized in Table 1.
To better determine if the larger hernia and mesh size in the non-AirSeal group were the factors correlated to a higher length of stay (LOS), a subpopulation of the same number of patients as in the AirSeal group was compared to those patients who were operated on with AirSeal. The hernia and mesh sizes were not statistically different between these groups. The insufflation pressure was significantly lower in the AirSeal group (p</= 0.0001), and the length of stay (LOS) was considerably lower in the AirSeal group (p= 0.0102). These comparisons are presented in Table 2:

Conclusion: A CQI method for measuring and improving RVHR outcomes has been implemented at one clinical site. In an attempt to improve outcomes such as LOS, a low-pressure pneumoperitoneum system was introduced into the surgical process. There was a significant decrease in LOS without a statistically significant change in OR charges or total charges.

RVHR	AirSeal (n = 30)	No AirSeal (n = 95)	P-value
Age, years (SD)	58.9 (+/- 14.4)	58.5 (+/- 13.3)	p= 0.8718
BMI (SD)	30.70 (+/- 3.57)	32.02 (+/- 6.58)	p= 0.3022
Hernia Size, cm2 (SD)	19.5 (+/- 20.3)	37.0 (+/- 38.2)	**p= 0.0459**
Mesh Size, cm2 (SD)	201.1 (+/- 110.8)	303.4 (+/- 209.2)	**p= 0.0228**
Insufflation Pressure, Hg mm (SD)	9.6 (+/- 0.81)	15.0 (+/- 0)	**p</= 0.0001**
EBL, ml (SD)	16.6 (+/- 25.8)	36.0 (+/- 75.7)	p= 0.1678
OR Time, min. (SD)	122.9 (+/- 43.8)	164.0 (+/- 77.2)	p= 0.0064
LOS, days (SD)	1.8 (+/- 1.7)	3.0 (+/- 1.6)	**p= 0.0012**
OR Charges, $ (SD)	40,511.36 (+/- 10,556.14)	35,709.21 (+/- 12,253.99)	p= 0.0969
Total Charges, $ (SD)	83,696.04 (+/- 28,995.25)	77,963.26 (+/- 24,673.73)	p= 0.3443

Table 1: Treatment and outcomes data from a CQI project for RVHR assessing the impact of a low-pressure pneumoperitoneum system

RVHR	AirSeal (n = 30)	No AirSeal (n = 30)	P-value
Age, years (SD)	58.9 (+/- 14.4)	59.1 (+/- 14.7)	p= 0.9648
BMI (SD)	30.70 (+/- 3.57)	32.54 (+/- 6.24)	p= 0.1723
Hernia Size, cm2 (SD)	19.5 (+/- 20.3)	28.8 (+/- 28.81)	p= 0.2175
Mesh Size, cm2 (SD)	201.1 (+/- 110.8)	263.1 (+/- 158.95)	p= 0.1108
Insufflation Pressure, Hg mm (SD)	9.6 (+/- 0.81)	15.0 (+/- 0)	**p</= 0.0001**
OR Time, min. (SD)	122.9 (+/- 43.8)	135.0 (+/- 56.8)	p= 0.3577
LOS, days (SD)	1.8 (+/- 1.7)	3.0 (+/- 1.7)	**p= 0.0102**

Table 2: Comparison of an equal number of patients between those who were operated on with AirSeal and those who had standard insufflation.

P98. Development And Implementation Of A Structured Continuous Quality Control At A Tertiary Care Hernia Center

A Muthumani, V Nwigwe, D Podolsky, P George, A Addo, Y Novitsky
Columbia University

Background: Post-operative monitoring is crucial for optimizing outcomes and ensuring patient satisfaction following hernia repair. Traditionally scheduled follow-up methods may lack efficiency and timely intervention. We aimed to implement a structured monitoring system utilizing patient-reported outcomes (PROs) to continuously track recovery progress and identify potential complications.

Methods: A quality improvement initiative was implemented by way of a post-operative monitoring system. A dedicated Quality Officer was charged with frequent follow up interactions. Key outcome measures included pain levels at various levels of activity, analgesics/narcotics consumption, gastrointestinal function, diet, and return to work, were assessed via a modified validated survey on post-operative days 1, 3, 7, 14, 30, 60, 90, 180, and then annually. Data collection was integrated into routine care workflows.

Results: Frequent follow up interactions were performed as scheduled by the dedicated Quality Officer. Patients were most often reached by phone though some data was obtained in person during scheduled post-operative visits when applicable. The survey was short, and the questions were simple. Compliance with the monitoring system was excellent. Acquisition of PROs was dependent on patients' response to outreach attempts and, thus, one challenge of survey administration included hard to reach respondents. The monitoring system provided valuable insights into patient recovery trajectories. It was able to detect/diagnose and treat early GI and wound issues prior to scheduled routine follow up.

Conclusion: Implementation of a structured monitoring system for post-operative hernia repair patients allows for comprehensive tracking of recovery parameters and the identification of complications in a timely fashion. The program demonstrated feasibility within routine clinical workflows and highlighted areas for improvement in patient care and follow-up protocols. While we emphasize the need for a dedicated provider to administer surveillance, future digital solutions may improve efficiency and reduce cost. Survey constraints remain a limitation. We advocate for a similar CQI methodology for all specialized hernia centers as it can serve as a scalable model for adoption, and enable standardized and efficient tracking of recovery parameters.

COLUMBIA
HERNIA CENTER

Post-Operative Follow for OUTPATIENT Hernia Repair Patients

Name: _____
MRN: _____
Date of Surgery: _____
Contact Number: _____
Inguinal [ ] Robotic [ ] Laparoscopic [ ] Open
Umbilical [ ] Robotic [ ] Laparoscopic [ ] Open
Ventral [ ] Robotic [ ] Laparoscopic [ ] Open

	POD1	POD3	POD7	POD14	POD30	POD90	POD 180	POD 365
Do you have any pain (0-10)? Groin Incisions In-between								
Pain Med Consumption Tylenol/Motrin Narcotics (quantity)								
GI function (normal/constipation)								
Diet (normal/difficulties)								
Activities of Daily Living Pain (0-10)								
Light Physical activities (Y/N) Pain (0-10)								
Return to Work (Y/N) Any Limitations (Y/N)								
Exercise/Strenuous Activities Pain (0-10)								
Comments								

P99. Mitigating FRAILTY: Pre-Operative Rehabilitation For Abdominal Wall Reconstruction, A Case Study

A Muthumani, V Nwigwe, Y Novitsky, D Podolsky
Columbia University

Background: Frailty is increasingly recognized as a risk factor in surgical patients, including those undergoing abdominal wall reconstruction. Pre-operative rehabilitation has been described with favorable outcomes in cardiac surgery. This case study investigates the impact of pre-operative rehabilitation on frailty and subsequent surgical outcomes in a patient referred for abdominal wall reconstruction.

Methods: A patient referred for abdominal wall reconstruction underwent pre-operative frailty assessment using the Clinical Frailty Scale during her new patient consultation. Recognizing the patient's frailty level as 6 (living with moderate frailty), we implemented a tailored intervention plan involving physical therapy sessions twice a week for six months to improve strength and frailty. The surgical procedure was postponed to allow for sufficient time for rehabilitation.

Results: Following the six-month physical therapy intervention, the patient demonstrated significant improvements in strength and frailty. This proactive approach resulted in optimized pre-operative condition and readiness for abdominal wall reconstruction. Subsequent surgical intervention proceeded with enhanced patient preparation and reduced risk profile. Her post-operative course was rather streamlined and she avoided major complications.

Conclusion: The integration of pre-operative rehabilitation, including physical therapy, proved pivotal in mitigating frailty and optimizing the patient's condition for abdominal wall reconstruction. This case underscores the potential benefits of targeted interventions aimed at improving frailty status in candidates for complex hernia repair. Future directions involve cohort studies to evaluate relative risk for both quantitative and qualitative post-operative outcomes when compared to those who did not undergo a pre-operative rehabilitation program.

CLINICAL FRAILTY SCALE

1 **VERY FIT** — People who are robust, active, energetic and motivated. They tend to exercise regularly and are among the fittest for their age.

2 **FIT** — People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g., seasonally.

3 **MANAGING WELL** — People whose **medical problems are well controlled**, even if occasionally symptomatic, but often are **not regularly active** beyond routine walking.

4 **LIVING WITH VERY MILD FRAILTY** — Previously "vulnerable," this category marks early transition from complete independence. While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up" and/or being tired during the day.

5 **LIVING WITH MILD FRAILTY** — People who often have **more evident slowing**, and need help with **high order instrumental activities of daily living** (finances, transportation, heavy housework). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation, medications and begins to restrict light housework.

6 **LIVING WITH MODERATE FRAILTY** — People who need help with **all outside activities** and with **keeping house.** Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **LIVING WITH SEVERE FRAILTY** — **Completely dependent for personal care,** from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~6 months).

8 **LIVING WITH VERY SEVERE FRAILTY** — Completely dependent for personal care and approaching end of life. Typically, they could not recover even from a minor illness.

9 **TERMINALLY ILL** — Approaching the end of life. This category applies to people with a **life expectancy <6 months**, who are **not otherwise living with severe frailty.** (Many terminally ill people can still exercise until very close to death.)

SCORING FRAILTY IN PEOPLE WITH DEMENTIA

The degree of frailty generally corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia,** recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia,** they cannot do personal care without help.

In **very severe dementia** they are often bedfast. Many are virtually mute.

DALHOUSIE UNIVERSITY

Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489–495.

P101. Robotic Enhanced View-Totally Extraperitoneal Approach For Inguinal Hernias. Why Not?

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Methodist Hospital Willowbrook

Background: The enhanced view-totally extraperitoneal technique (eTEP) was first described for laparoscopic inguinal hernia repair. With the widespread adoption of robotic surgery, the "enhanced view" concept has change the paradigm of repair for abdominal wall hernias specially of ventral hernias. Combining the benefits of the robotic platform with a technique that does not penetrate the peritoneal cavity we present the r-eTEP technique for inguinal hernias.

Methods: We describe the robotic approach for inguinal hernia repair, completely extraperitoneal. The videos presented are of unilateral inguinal hernias. The technique has three components: proper port placement, division of the arcuate line and the critical view of the myopectineal orifice.

Results: We place the first incision 4 cm cranial to the umbilicus at the midclavicular line on the same side of the hernia. Using an optical view trocar the retrorectus space is created bluntly. Two additional robotic trocars are inserted under direct vision, one at the suprapubic area just lateral to the midline and another at the umbilicus, at a distance of 6 cm apart.
Through the lowest trocar a ligature is used to dissect the preperitoneal space and divide the arcuate line, medial to the semilunaris.

The robot is the dock, with the camera at the umbilicus, scissors and fenestrated bipolar are used for the two working ports.

For bilateral inguinal hernias, the suprapubic port is placed in the left lower quadrant and camera is moved to the must cranial port for better triangulation.
The critical view of the MOP is achieved with an ample surgical field.

Conclusion: The benefits of an extraperitoneal repair combine with the robotic platform offer an ample view of the myopectineal orifice identifying the hernias at is origin with out disrupting the peritoneum. The technique is safe and reproducible however proper understanding of the abdominal wall anatomy is paramount for correct anatomical dissection.

P102. Experience Of Laparoscopic Assisted Sandwich Mesh Hernioplasty For Complicated Incisional Hernia In A Single Center In Taiwan

P Tsai, T Chen
National Yang Ming Chiao Tung University

Background: Only surgical intervention can completely correct and prevent the risk of incarcerated incisional hernias. There were several methods proposed to place the mesh for complicated incisional hernia. The jury of how to use a simple but safe procedure to achieve good outcome after hernioplasty was still out.

Methods: The aim of this study was to report the feasibility and safety of laparoscopic assisted sandwich mesh hernioplasty for complicated incisional hernia in a single-center experience.

Results: A retrospective analysis of 135 patients who underwent laparoscopic assisted sandwich mesh hernioplasty from 2019 to 2023 at Taipei Veterans General Hospital was performed. While 77 patients (57%) were male, 58 patients were female (43%). The mean age of the patient was 62.7 year old (26 to 96). The incisional hernia size was 8.7 ± 5.3 cm (range : 5-35 cm). Mean operative time was 157.5 ± 58.9 minutes (range 40-270 minutes). The intra-operative blood loss was less than 100 cc. None of the patients had died in follow-up. None of the patients had recurrence after follow-up for one year. There were two uremic patients developed compartment syndrome postoperatively who got much improved 3 days after mechanical ventilator support in intensive care unit. There was one patient has fibrotic sac mass for 6 months which resolved spontabeously. Eight patients had skin necrosis which need further debridement. Two patients has mesh reaction who need to remove the mesh.

Conclusion: Laparoscopic assisted sandwich mesh hernioplasty method is easy for surgeons who are familiar with the anatomy of the abdominal wall. It is safe and feasible for complicated incisional hernia patients with good outcome.

P103. Use Of Botox In Complex Hernia Repair Using A Minimally Invasive Approach: Feasibility And Advantages

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Background: Complex ventral hernias present significant surgical challenges. Botox, used for Chemical Component Paralysis, has been increasingly studied for its safety and effectiveness in these cases [1-6]. BTA is especially noted for its role in managing complex midline incisional ventral hernias, primarily through an open approach [1, 4]. BTA works by temporarily paralyzing the abdominal wall, effecting chemical component separation, which eases the midline closure and streamlines the minimally invasive repair process [1, 4, 6-8]. A standardized BTA protocol for complex hernia repairs lacks consensus among surgeons [7]. While most studies focus on open procedures [1, 4], scant literature exists on BTA's role in minimally invasive techniques [9]. Our preliminary work with BTA in robotic hernia repairs showed promise, leading us to pursue a more comprehensive evaluation in this study.
Objectives and Purpose: To determine the benefits of preoperative application of botulinum toxin type A (BTA) followed by robotic approach in patients with complex hernias. In addition, to analyze recovery, recurrence, and complication rates associated with this minimally invasive approach.

Methods: A preexisting abdominal wall database was queried for all patients who underwent robotic abdominal wall reconstruction preceded by BTA chemodennervation of the abdominal wall. Inclusion criteria required achievement of primary fascial closure via a robotic minimally invasive technique with posterior component separation. All mesh was placed in the retromuscular space. Concomitant inguinal repairs, mesh explantations, scar revisions and panniculectomy were included as long as the soft tissue work was completed after robotic fascial closure. Data regarding patient demographics, hernia characteristics, operative technique, and outcomes at 1, 3, 6, 12 and 24 months were collected and analyzed.

Results: Nineteen patients were analyzed. Median age was 64. Median BMI was 31.3kg/m². Sixty three percent of patients had an ASA class 2. The median hernia width was 14.4 cm and 63% had a Hernia grade 2 with a median Tanaka ratio of 13.6%. In defects with less than 12 cm width, the mean Tanaka Ratio was 18.4%. The median length and width of mesh used was 36x30cm. The median length of stay for these patients was 3 days. At 30 day follow-up, there were no SSI, 3 SSO (16%), and no SSOPI. Average length of follow-up was 6 months (range 3 months to 24 months) with no recurrences.

Conclusion: The study confirms the safety and potential benefits of using preoperative BTA for complex ventral hernias exceeding 12cm or with a Tanaka ratio over 18%. These conditions appear particularly suited for the advantages offered by a minimally invasive robotic approach while providing adequate midline closure. Future prospective studies with larger sample sizes are needed to further validate these findings and refine the application of BTA in such procedures.

Patient Demographics

Variable	N = 15
Age	
Median (IQR)	64 (57-75)
Mean (SD)	64 (11)
Race	
African Am	1 (6%)
Hispanic	1 (6%)
White	17 (89%)
Gender	
Female	10 (53%)
Male	9 (47%)
Smoking Status	
Current	4 (21%)
Former	9 (47%)
Never	5 (26%)
No	1 (5%)
BMI	
Median (IQR)	31.3 (28.5-35.2)
Mean (SD)	31.4 (6.4)
COPD	1 (5%)
HTN	12 (63%)
Diabetes	6 (32%)
Immunosuppressants	1 (5%)
ASA Class	
2	12 (63%)
3	7 (37%)

n (%)

Operative Details

Variable	N = 15
Mesh Length (cm)	
Median (IQR)	36.4 (31.8-41.9)
Mean (SD)	35.2 (4.7)
Mesh Width (cm)	
Median (IQR)	20.3 (20.0-20.5)
Mean (SD)	20.6 (5.4)
Mesh Size Area (cm²)	
Median (IQR)	1,000.0 (800.0-1,162.5)
Mean (SD)	1,026.7 (312.7)
Onlay Use	11 (58%)
Underlay Mesh Used	
Yes	1 (5%)
2/0	4 (21%)
0/0	10 (53%)
4/0	4 (21%)
Surgical Technique	
Open RTAR	6 (32%)
Open RTAR + SIS	3 (16%)
Open RTAR + mesh suspension	1 (5%)
Open RTAR + other	1 (5%)
Open RTAR + panniculectomy +/- scar rev	4 (21%)
Lap/RTAR + other	1 (5%)
Lap/RTAR	1 (5%)

n (%)

30 Day Follow Up Outcomes

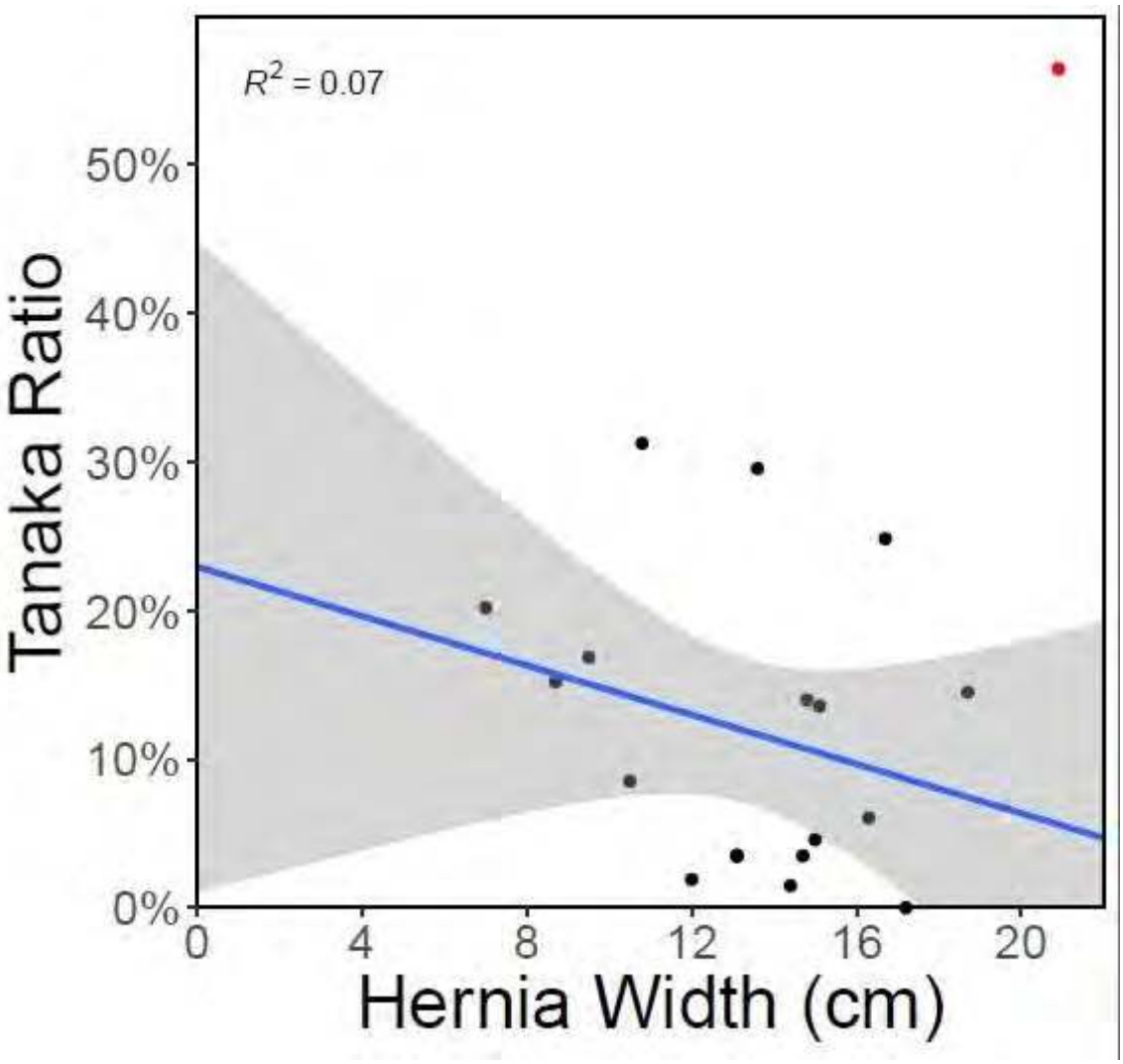
Variable	N = 15
LOS (days)	
Median (IQR)	3.0 (3.0,3.0)
Mean (SD)	3.0 (1.7)
Readmission	0 (0%)
Reoperation	0 (0%)
SSI	0 (0%)
SSO	1 (10%)
SSOPI	0 (0%)
Clavien-Dindo	
None	15 (79%)
I	2 (11%)
II	2 (11%)

n (%)

Long Term Follow Up Outcomes

Time (Follow Up#)	1 Month N = 19	3 Months N = 18	6 Months N = 18	1 Year N = 8	2 Years N = 1
Recurrences	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

n (%)


$R^2 = 0.07$
Tanaka Ratio
50%
40%
30%
20%
10%
0%
0
4
8
12
16
20
Hernia Width (cm)

P104. Optimizing Abdominal Wall Reconstruction: Multimodal Approach In Complex Surgical Cases

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Northwell Health

Background: Abdominal wall reconstruction surgery is a procedure that uses component separation and mesh placement to correct a weakness in the abdominal wall and reinforce its integrity and function. In patients with extensive medical and surgical histories, the inclusion of muscle flaps, such as those derived from the rectus femoris muscles, may be necessary to ensure adequate support and coverage. The rectus femoris muscle, a superficial and vertically-oriented muscle in the anterior thigh, can be used as it provides a large amount of well-vascularized tissue and can be rotated to cover defects in the abdominal wall.

Methods: 56 yo female with a complex past medical history presents for elective repair of abdominal wall hernia with mesh placement followed by bilateral pedicled rectus femoris flap rotation by 180 degrees to cover the abdominal wall along with thigh donor site reconstruction with bilateral skin grafts. Her PMH includes endometriosis, uterine leiomyomas s/p partial hysterectomy, DVT on Eliquis, h/o tracheostomy, and past surgical history of brazilian butt lift and liposuction in 2021 c/b bowel perforation, necrotizing soft tissue infection, and septic shock requiring an exploratory laparotomy with small bowel resection and anastomosis and multiple debridements with split thickness skin grafts to the abdomen and bilateral flanks.

Results: The surgical procedure involved harvesting a 30 x 20 cm skin graft from the anterior abdominal wall and developing a transverse rectus abdominis plane for mesh placement. Incisions were made in her thighs to carefully dissect the bilateral pedicled rectus femoris flaps and position them to cover the abdominal wall by rotating them 180 degrees upward. They were confirmed to have adequate vascularization using the doppler and then sutured in place. The skin grafts that were previously harvested from the anterior abdominal wall were used to close the bilateral thigh defects. Postoperative, the patient was transferred to the SICU for hemodynamic monitoring. She had an unremarkable postoperative course marked by timely ambulation, dietary tolerance and passage of flatus. She was discharged to home on postoperative day 6 with scheduled follow-up in the clinic after one week.

Conclusion: Abdominal wall reconstruction surgery plays a crucial role in correcting the weakness in the abdominal wall, allowing the abdominal wall to regain its strength and function. For patients with complex medical histories, achieving successful repairs requires extensive and meticulous planning prior to surgery. By combining component separation, mesh placement and muscle flap rotation, the surgical team was able to provide the patient with the most abdominal wall coverage to minimize the risk of recurrence as well as optimize cosmetic outcomes.

P105. Robotic Transversus Abdominis Release With HUGO-TAR. Initial Experience

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Pontificia Universidad Católica de Chile

Background: Transversus abdominis release (TAR) is an effective technique for treating large midline and off-midline hernias. Recent studies have demonstrated that robotic TAR (rTAR) is technically feasible and associated with improved outcomes compared to open surgery. Few experiences have been published on abdominal wall repair using the novel robotic platform HUGO RAS System (Medtronic).

Methods: All consecutive patients who underwent a rTAR in our institution were included. Each arm configuration was defined by our team and Medtronic personnel. rTAR was performed as previously described. When completing the TAR of one side, a redocking process with different, mirrored arm angles was performed to continue with the contralateral TAR. Operative variables and early morbidity were recorded.

Results: Eighteen patients were included. The median BMI was 30.4 (21-40.6) kg/m2. The median height was 1.6 m (1.5-1.9 m). A trend to decrease operation time, console time and redocking time was seen in the consecutive cases. No intraoperative events were reported. One patient was readmitted for a small bowel obstruction. A laparoscopy was performed, observing an adherence in the upper abdomen, which was released with no need for bowel resection. The median length of stay was 2 (1-6) days.

Conclusion: Robotic TAR with the HUGO RAS system is feasible and safe. The adoption of this procedure on this novel platform for the treatment of complex abdominal wall hernias has been successful for our team.

P106. Surgical Strategies For Amyand'S Hernia Management: A Case Series Study

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Background: Amyand hernia is a rare surgical entity, accounting for less than 1% of all hernias, it involves the presence of the appendix within the hernia sac. The incidence of acute or chronic inflammation of the appendix within the hernia sac is approximately 0.1% to 0.13% of the cases. These hernias pose unique challenges in diagnosis and management. In recent years, surgical approaches to Amyand hernias have evolved, with varying strategies employed based on the presence of contamination within the hernia sac.

Methods: A detailed description and review of three cases of Amyand's hernia with different presentations and their management according with surgical findings, involving primary repair in the presence of inflammatory changes within the appendix and mesh placement when no signs of inflammation was detected

Results: In this study, we present three successful surgical management cases of Amyand hernias, focusing on two distinct scenarios: the application of mesh in clean cases and the avoidance of mesh in clean-contaminated cases. Two patients showed signs of either acute or chronic inflammation in their appendix and underwent appendectomy and primary hernia repair. The third patient did not exhibit any signs of inflammation and was treated with appendectomy and hernia repair with mesh placement.

Conclusion: Amyand's hernia repair should be guided by the cleanliness of the surgical field and the severity of appendiceal inflammation. While mesh may be considered in clean cases to reduce the risk of recurrence, its use in clean contaminated cases should be approached cautiously, weighing the potential benefits against the increased risk of complications. Individualized treatment plans, based on a thorough assessment of patient factors, such as age and activity level are essential to optimize outcomes in the surgical management of Amyand hernias.

Classification	Description	Surgical management
Type 1	[illegible]	[illegible]
Type 2	[illegible]	[illegible]
Type 3	[illegible]	[illegible]
Type 4	[illegible]	[illegible]

Table 1 [illegible]

P107. Complications Of Laparoscopic eTEP Inguinal Hernia Repair And Their Troubleshooting

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Background: The field of hernia repair has been revolutionized since the advent of totally extraperitoneal (TEP) repairs. The concept of ETEP(extended view TEP) repairs have further expanded horizons by overcoming the challenges faced in TEP repairs. Although laparoscopic ETEP hernia repairs offer a myriad of advantages, these procedures pose a steep learning curve and may pose complications which maybe difficult to manage.

This study aims to highlight the complications faced during laparoscopic ETEP inguinal hernia repairs at our centre and provide possible trouble-shooting solutions for the same.

Methods: This is a high volume single-centre, single team prospective observational data of patients undergoing laparoscopic ETEP inguinal hernia repairs from January 2020 to October 2023. We reviewed a total of 252 such patients and collected demographic details, co-morbidities, intra-operative complications and post-operative recovery of the patients.

Results: We have highlighted the possible complications and recommended trouble-shooting approaches to tackle them. The incidence of intra-operative and early complications like early pneumoperitoneum, injury to brick's artery, injury to inferior epigastric artery, peritoneal rents, urinary retention in our study was 5.15%,0.02%,0.003%,10.3%,1.9% respectively. Late complications like seroma, hematoma, recurrence showed an incidence of 1.58%,0.003%,0.003% respectively. Our cohort did not have any cases of visceral injury(bowel/bladder) or surgical site infection.

Conclusion: It is essential to identify and address complications faced during laparoscopic ETEP repairs to ensure patient safety, improved outcomes and reduced recurrences and surgical site infections. Implementing the suggested troubleshooting strategies may help improve the surgical outcome and in turn postoperative patient well-being and quality of life in patients undergoing ETEP repairs.

P108. Laparoscopic eTEP-RS For Ventral Hernias-Single Institute Single Surgeon Surgery Technique Data For Evaluation Of Early Operative Outcomes

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SMBT IMS RC Dhamangaon Nashik

Background: ventral hernias occur through defect in fascia of abdominal walls. Sometimes repair of these hernias are challenging. Complications in ventral hernia surgery is common entity which should be prevented by meticulous dissection in layers of abdominal wall. eTEP RS is one challenging technique if done in right way is the gold standard to treat ventral hernias.

Methods: A prospective study of early outcomes was conducted for all ventral hernia patients, defect ranging between 3cm to 12cm who underwent eTEP RS with or without TAR between feb 2023 to january 2024.

Results: Till January 2024 we performed a total of 47 eTEP RS procedures.
The mean age of patients was-43.5
The mean defect of hernia was-4.5cm
The mean duration of surgery- 123 min
The average size of hernia mesh used was23*15cm
Average follow up of patients was 5 months
There is no recurrence in any operated hernia.
Post operative seroma formation was seen in 1 patient. (first eTEP RS where we didnt used strapping)
There was a intraoperstive bleeding from inferior epigastric artery in one patient.
Bloody obscured operative field is seen in 4 patients.
There is no wound infection or mesh infection in any patient.

Conclusion: The eTEP RS procedure is surgically and skillfully challenging surgery but is safe alternative to IPOM PLUS and open ventral hernia surgery. This procedure creates a large retrorectal space for large mesh placement. Simultaneously multiple hernia can be addressed at same surgery. The key to effective and efficient surgical technique is to have detailed knowledge of anatomy of anterior abdominal wall.

P109. Laparoscopic eTEP RS With Unilateral Tar With Peritoneal Flap For Large Paramedian Incisional Hernia I2/I3W2

V Patil, N Baste , N Khairnar, N Dabhade , A Patil
SMBTIMS RC Dhamangaon Nashik

Background: 55 male , swelling in flank to iliac region on right side , with pain in abdomen swelling increases on coughing
Reducible swelling
P/h/o emergency exploratory laparotomy from right paramedian incision for perforated appendicitis.

Methods: Plan- Laparoscopic eTEP RS with TAR with large mesh placement
Standard eTEP RS ports. Left retrorectus space access.
Crossover to right retrorectus space by incising posterior rectus sheath.
Peritoneum near previous scar is fibrosed and got open during dissection.
Incisional hernia identified. Omental adhesiolysis done. Retrorectus space enlarged. Peritoneal flaps from 3 aspect of defect taken.
Bottoms up TAR done to reach right lateral margin of defect. TAR extended. Peritoeum sutured with barbed 2-0 suture.
Defect closed with barbed 1 number suture. 25*22 cm mesh kept. Drain kept. Port sites removed and sutured.
Strapping on operative site given.

Results: Uneventful post op period.
Patient discharged on 6th post op day.

Conclusion: eTEP RS with TAR with peritoneal flaps avoids bilateral TAR and it is a very helpful step to bridge the large gap between posterior rectus sheath.

P110. Robotic Repair Of Iatrogenic Radiation Induced Diaphragm Hernia

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The University of Texas MD Anderson Cancer Center

Background: The multi-disciplinary treatment of stage IV colorectal cancer has improved with advancements in cancer care. Yttrium-90 (Y-90) radioactive tumor ablation for hepatic metastases was once seen as therapy for patients who were not eligible for liver transplants. Tertiary cancer centers have expanded indications for hepatectomy after Y-90 treatments. This is an active area of research and optimal dosing and treatment duration are still being determined. The collateral effects of this tumor directed treatment, such as local tissue damage, are still being elucidated. Additionally, cancer patients experience a much higher incidence of complex post-operative ventral incisional hernias secondary to risk factors for cancer, such as obesity, and unconventional incisions, such as reverse-L incisions for hepatectomy. We have previously published the 12-month hernia rate for colorectal cancer patients as 38% and hepatectomy patients as 41%. We present a case of iatrogenic radiation induced diaphragm hernia in the setting of a complex ventral incisional hernia that requires component separation for abdominal wall reconstruction in a colorectal cancer patient.

Methods: After performing standardized measurements of the patient's ventral incisional hernia and diaphragm hernia, we determined the optimal structural approach to hernia repair. Using a cancer phase of care approach, we developed a preoperative strategy to offer the best structural approach to hernia repair (robotic transversus abdominus release) and a next best available offer (bridged mesh diaphragm hernia repair and open Rives-Stoppa retrorectus repair) should previous cancer treatments make the initial strategy unattainable.

Results: After performing a diagnostic laparoscopy, the robotic platform was used to perform hernia reduction. The feasibility of a robotic transversus abdominus release was limited, and a bridged mesh diaphragm repair and open Rives-Stoppa retrorectus repair was performed successfully. Chest drainage was accomplished with transabdominal intrathoracic drain placement. Cancer surveillance CT imaging at 3 months reveals intact hernia repairs.

Conclusion: Cancer patients present with complex hernias requiring complex decision making. Preoperative planning using a cancer phase of care framework and anticipating uncommon challenges facilitates surgery through having well developed alternative surgical approaches.

P112. Comparative Analysis Of Opioid Use Between Robotic And Open Ventral Hernia Repair

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Background: Open ventral hernia repair surgery (OVHS) is one of the most frequently performed operations worldwide. Pain is a significant barrier to discharge following OVHS and has led to the development of ERAS protocols with multimodal pain management to decrease opioid use. Recently, robot-assisted techniques have become more conventional for ventral hernia repair surgery. However, few studies have thoroughly examined opioid use after robot-assisted ventral hernia repair (RVHS), and none has compared opioid use between OVHS and RVHS. This study aims to evaluate inpatient opioid use in OVHS and RVHS as a determinant of perioperative pain.

Methods: This single-center, retrospective cohort study was conducted at an academic center from January 2022 to June 2023. Patients aged 18 years and above who underwent either robotic or open ventral hernia repair were included. The dose and route of all perioperative opioid medications were recorded, with "perioperative" defined as the period from the start of the operation until discharge from the hospital. The primary outcome was total perioperative opioid consumption, measured in oral morphine equivalents (OME). Secondary outcomes included epidural usage, difference in pain scores, and the number of opioid pills that patients received upon discharge. Regression analysis was used to control for differences in hernia characteristics, other non-opioid pain medication use, and previous opioid use (defined as at least one opioid prescription in the 30 days preceding the operation).

Results: The study included 71 robotic and 125 open procedures. Patient characteristics were similar between the two groups. Robotic cases had significantly smaller hernias (29.6±33.0 vs 103.2±139.2 cm2, P< 0.001), were less likely to be recurrent hernias (18±25 vs 54±43, P=0.019), and were more likely to utilize synthetic mesh (97% vs 78%, P=0.002). In a regression model, RVHS was associated with lower total OME (147±114 vs 411±617, P=0.041). The three most frequently used pain medications were fentanyl, hydromorphone, and oxycodone. Among patients who used fentanyl, the dose was higher for robotic than open procedures (300±105 vs 236±122, P< 0.001), although a lower dose of oxycodone offset this (28±43 vs 94±117, P=0.009). No patients in the robotic group required epidural administration. Furthermore, there was no difference in pain scores (-0.3±3 vs -0.1±3, P=0.313) or opioid pills prescribed upon discharge (14.8±15 vs 17.6±25, P=0.112) between the groups.

Conclusion: RVHS is associated with a decreased need for opioids with no difference in pain scores compared to OVHS. Moreover, RVHS eliminated the need for epidural pain control in this population. These results provide a rationale for considering robotic ventral hernia repair when feasible to minimize opioid use.

Table 1: Baseline demographic characteristics for patients who underwent robot and open ventral hernia repairs from January 2022 to June 2023

	Robot	**Open**	***P* Value**	
Age, mean (SD), y	61.2 (12.5)	58.1 (12.5)	0.099	
Male sex, n (%)	38 (54)	61 (49)	0.626	
Race/Ethnicity, n (%):			0.928	
White	44 (62)	84 (67)		
African American	5 (7)	7 (6)		
Asian	2 (3)	3 (2)		
American Indian/Alaska Native	1 (1)	3 (2)		
Declined	19 (27)	27 (22)		
BMI, mean (SD)	31.5 (7.2)	31.6 (7.7)	0.901	
Comorbidities, n (%):				
Diabetes	12 (17)	27 (22)	0.463	
COPD	2 (3)	7 (6)	0.492	
Current Smoking	3 (4)	10 (8)	0.383	
Immunosuppressed	11 (15)	14 (11)	0.384	
Hypertension	38 (54)	53 (42)	0.177	
Heart Failure	2 (3)	5 (4)	1.00	
Functional status, n (%):			0.536	
Independent	71 (100)	123 (98)		
Dependent	0 (0)	2 (2)		
ASA, n (%):			0.719	
1	2 (3)	6 (5)		
2	37 (52)	58 (46)		
3	32 (45)	59 (47)		
4	0 (0)	2 (2)		

BMI = body mass index, COPD = chronic obstructive pulmonary disease, ASA = American Society of Anesthesiologists

Table 2: Hernia characteristics for patients who underwent robotic and open ventral hernia repairs from January 2022 to June 2023

	Robot	**Open**	***P* Value**
Hernia type, n (%):			0.719
Primary	13 (18)	41 (33)	
Epigastric	2 (3)	13 (10)	
Umbilical	8 (11)	27 (22)	
Spigelian	3 (4)	1 (1)	
Incisional	57 (80)	84 (67)	
Hernia area, mean (SD), cm^2	29.6 (33.0)	103.2 (139.2)	<0.001
Recurrent hernia, n (%)	18 (25)	54 (43)	0.019
Mesh area, mean (SD), cm^2	246.2 (129.2)	264.0 (278.3)	0.574
Mesh type, n (%):			0.002
Synthetic	69 (97)	98 (78)	
Biologic	0 (0)	4 (3)	
No mesh	2 (3)	20 (16)	
Ventral hernia working group, n (%):			0.558
1	24 (34)	36 (29)	
2	44 (62)	85 (68)	
3	2 (3)	4 (3)	
Prior mesh, n (%):			0.255
Yes	10 (14)	27 (22)	
No	61 (86)	98 (78)	

Table 3: Perioperative opioid use and pain outcomes between robotic and open ventral hernia repairs from January 2022 to June 2023

	Robot	Open	Estimate*	*P* Value
Total OME, mean (SD), MME	147 (114)	411 (617)	-144.97 (-283.95, -5.98)	0.041
Average OME per day, mean (SD), MME	74 (42)	74 (66)	1.69 (-16.46, 19.83)	0.855
Fentanyl use, n (%)	61 (86)	94 (75)	1.52 (-0.48, 1.35)	0.367
Fentanyl dose, mean (SD), mcg	300 (105)	236 (122)	64.12 (27.55, 100.68)	<0.001
Hydromorphone use IV, n (%)	52 (73)	86 (69)	1.07 (-0.72, 0.85)	0.872
Hydromorphone dose IV, mean (SD), mg	1.8 (2)	3.8 (5)	-0.73 (-2.06, 0.59)	0.277
Oxycodone use PO, n (%)	61 (86)	95 (76)	1.59 (-0.45, 1.41)	0.326
Oxycodone dose PO, mean (SD), mg	28 (43)	94 (117)	-40.86 (-71.29, -10.43)	0.009
Epidural usage, n (%)	0 (0)	52 (42)	NA	NA
Difference in pain score, mean (SD)	-0.3 (3)	-0.1 (3)	-0.67 (-1.98, 0.64)	0.313
Number of opioid discharge pills, mean (SD)	14.8 (15)	17.6 (25)	-5.55 (-12.41, 1.31)	0.112

*Estimate represents adjusted mean differences for continuous variables and odds ratio for categorical variables (reference = open)

OME = oral morphine equivalents, MME = morphine milligram equivalents, IV = intravenous, PO = by mouth

P113. Outcomes Of Abdominal Wall Reconstruction When Utilizing Vicryl Mesh For Posterior Sheath Reconstruction

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Background: Abdominal wall reconstruction may restore abdominal wall structure and function in patients with large ventral hernias. Posterior component separation (PCS) with transversus abdominis release (TAR) has become the standard for hernias previously deemed "unfixable." Absorbable Vicryl (polyglactin) mesh may be incorporated into the posterior fascia to provide separation between permanent mesh and viscera in a PCS with TAR when the posterior fascia has defects that cannot be reapproximated primarily. In this study, we examine outcomes of hernia repairs with TAR with and without Vicryl mesh placement.

Methods: Between March 2018 and August 2021, 184 patients underwent elective ventral hernia repair with TAR. 28 patients received a Vicryl mesh implant (Vicryl group), and 156 did not (non-Vicryl group). The primary outcomes were surgical complications including hematoma, wound dehiscence, surgical site infection (SSI), and death. We also examined hospital admissions and ED visits within 1-30 days and 31-90 days from the repair. Data was collected for at least three months post-operatively, with an average follow-up of 19 months.

Results: There were no significant demographic differences between groups. There were no statistically significant difference between readmission or ED visits between groups. Complication rates did not differ significantly between groups for any variables. SSI appeared more common in the Vicryl group, but did not reach statistical significance.

Conclusion: In our study, the addition of absorbable mesh appears to be an acceptable adjunct to traditional PCS with TAR in the elective setting

P114. Case Report On The Use Of Tissue Expanders In Conjunction With Botox Injections For Abdominal Wall Reconstruction

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Background: Abdominal wall reconstructions in the setting of trauma are often performed in the aftermath of a significant loss of abdominal wall domain and are preferably performed with direct fascial reapproximation and mesh reinforcement, however, bridging mesh can be required if closure is not possible. One unique approach to aid in approximation is the use of abdominal wall tissue expanders (TE) as is described by Wooten et al. (2017). In addition, it has been established that injecting botulinum toxin (BTA) preoperatively to induce chemical short-term paralysis of the lateral abdominal wall muscles can enable a tension-free closure of the midline (Seretis et al. 2021). We present a case report to contribute to the evidence for the potential for TE's in conjunction with BTA in repair of complex ventral hernias to increase success in repair as a novel approach.

Methods: This is a case of a patient who suffered a gunshot wound (GSW) in 2020 with multiple surgeries and failure to close his abdominal wall due to significant loss of domain resulting in a large ventral wall abdominal defect covered with a skin graft. He additionally underwent bilateral above knee amputations as a result of the initial trauma. The abdominal wall defect measured as follows: craniocaudal length of 28 cm; 15 cm at the level of the umbilicus, 14 cm at the lower border of the costal margin, and 14 cm midway between the umbilicus and the caudal edge.

The possibility of using a latissimus dorsi flap was initially considered, however it was felt that this would further compromise this patients mobility. Therefore, expansion of the anterior abdominal wall with the assistance of plastic surgery appeared to be the approach with the best possible outcome.

Results: Two 700cc expanders (Mentor) were surgically inserted between the external and internal oblique and BTA (100 units per side) was injected into external and internal oblique muscles at multiple sites. Over the course of 5 months, a total of 900 cc of normal saline was gradually injected into both abdominal wall expanders over multiple clinic visits. We then removed the tissue expanders and performed bilateral posterior component separation. A polypropylene mesh bridge was used to reapproximate and reconstruct the posterior layer and the anterior fascial layer was able to be reapproximated primarily. The patient recovered from surgery without significant complications and maintained his preoperative mobility.

Conclusion: We present a case with the novel use of bilateral abdominal TE and BTA injections in a patient with a large ventral defect in conjunction with abdominal myofascial releases to achieve closure. We demonstrate that BTA injections used to relax the lateral abdominal wall muscles in conjunction with the use of TE to increase muscle tissue compliance can be used to achieve a previously impossible final approximation. In addition, when abdominal wall reconstruction is desired without the potential limitations in mobility from a muscle flap, abdominal wall TE and BTA injections are viable choices to help achieve tension free closure without the use of bridging mesh or non anatomic muscle flaps.

POD 1. The Analgesic Impact Of Erector Spinae Plane Block In Inguinal Hernia Repair: A Systematic Review And Meta-Analysis Of Randomized Controlled Trials

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Montefiore Medical Center

Background: The analysis of postoperative pain has gained prominence as an important outcome following inguinal hernia repair (IHR). In this context, various strategies have been employed, including multimodal analgesia based on the Enhanced Recovery After Surgery (ERAS) protocol. One commonly utilized component of these multimodal strategies is nerve blocks. The erector spinae plane block (ESPB), which is an interfascial plane block, boasts low complication rates, can be performed in patients with contraindications for neuraxial blocks, promotes minor hemodynamic changes, and presents fewer associated risks. We aimed to perform a systematic review and meta-analysis analyzing the analgesic efficacy of ESPB for IHR.

Methods: We searched Pubmed, Embase, Cochrane, and Web of Science from inception until April 2024 for randomized controlled trials (RCTs) analyzing the impact of ESPB on pain outcomes following IHR. Titles, abstracts, and full texts were reviewed, and independent reviewers performed data extraction. The primary outcomes analyzed were the Visual Analogue Scale (VAS) of postoperative pain at 2h, 6h, 12h, and 24h postoperatively. We used a 1-point difference as cutoff to clinical relevance on the VAS analysis. As a secondary outcome, we analyzed postoperative nausea and vomiting (PONV) rates. Statistical analyses were done using R software.

Results: The initial search yielded 845 results, of which 11 articles were considered eligible for full-text analysis. After full-text reading, a total of three RCTs were included, comprising 145 patients, of which 66 (45.5%) were submitted to ESPB. Between the included studies, two analyzed minimally invasive IHR, while one analyzed open Lichtenstein technique. We found no differences in VAS pain scores at 2h (MD -0.56; 95%CI [-3.53; 2.42]; P = 0.71) and at 6h (MD -1.13; 95%CI [-2.50; 0.23]; P = 0.1) postoperatively. Also, not clinically or statistically significant differences were found in VAS score for ESPB at 12h (MD -0.96; 95%CI [-1.94; -0.02]; P = 0.051) and at 24h postoperatively (MD -0.19; 95%CI [-0.53; 0.15]; P = 0.28). No statistically significant differences were found in PONV rates between the groups (7.6% vs. 20.3%; RR 0.38; 95%CI [0.14; 1.0]; P = 0.05).

Conclusion: This meta-analysis found no differences in postoperative pain scores or PONV between the ESPB and control groups. More studies are needed to better understand the role of ESPB in patients that underwent IHR.

POD 2. Centralization Of Elective Groin Hernia Repair Can Reduce Recurrence Rates Of Groin Hernia Surgery

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Halland Hospital

Background: Region Halland centralized the majority of the region's elective groin hernia surgeries through different administrative measures in the health system taken between 2008 and 2012. The aim of this study was to compare the recurrence rates following groin hernia repair of Region Halland before and after centralization.

Methods: Recurrence rates in the Swedish Hernia Register of primary and recurrent hernia repair of the region Halland have been compared between the pre- and post-centralization periods: before 2007 and after 2013. In order to reduce the effect on recurrence of a natural progress of the quality of surgery during such periods, the study used the national average in the respective period as control in a hazard ratio analysis. Changes in the hazard ratio of the risk of recurrence with respect to the national average in the different periods were analyzed.

Results: The hazard ratio for recurrences of primary hernia repair of the region with respect to the national average decreased from 2.0 (CI 1.8-2.3) during 1997-2007 to 0.8 (CI 0.6-0.9) during 2013-2022 (Table 1). For recurrences of recurrent hernia repair, the hazard ratio decreased from 1.4 (CI 1-1.9) to 0.5 (CI 0.2-0.9) for the same periods.

Conclusion: The present study found a reduction in the cumulative risk of recurrence of groin hernia after centralization of elective inguinal hernia repair in a region, therefore centralization of this type of surgery could be a way to improve the quality of inguinal hernia repair.

POD 3. Surgical Management Of Chronic Adductor Longus Tendon Tears: Retrospective Analysis Of Outcomes

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Houston Methodist Hospital

Background: Injuries to the adductor tendons comprise more than ½ of the cases of groin pathology, with the adductor longus having the highest incidence of involvement. Repair of the adductor tendons has not been extensively described and it's still controversial but is an important procedure in reconstructing the core following injury. This case series demonstrates the efficacy of adductor longus repair in chronic injuries.

Methods: We reviewed a total of 13 male patients with complete avulsions to adductor longus tendon, with injuries considered chronic by standard definition (>3 months).

Patients presented similar clinical characteristics. The diagnosis was confirmed by patient history, physical examination, and magnetic resonance imaging (MRI). Most patients referred to a pop-like or tearing sensation in the groin area at the time of injury.

A low incision is made in the inguinal crease over the pubic bone with the patient in the frog legged position. The external oblique tendon is opened. The cord structures are retracted to expose the inguinal floor deep and the adductor tendon inferiorly. The proximal tendon is dissected from the compartment. Any scar tissue or heterotopic ossification is removed from the adductor compartment. A lengthening tenotomy is performed along the longitudinal aspect of the tendon, 4-7cm from the pubic bone. Permanent suture (Smith& Nephew MiniTape) is used in a running-locking fashion on the tendon. Scar tissue is removed from the pubic bone prior to the 1.8mm tunnels drilled in the bone. The bone anchors were used to secure the tendon to the bone. Additional suture is used to further secure the anterior surface of the adductor tendon to the pubic bone.

Results: Patients age ranged from 16 to 57 years of age, with a muscle retraction average of 1.5cm ± 1.3cm, observed on MRI, on average patients' injury dated back to 9 months with the maximum time observed of 40 months prior to surgical repair.

Complete relief of symptoms was observed in all patients with return to baseline at an average of 7.6 weeks ± 1.3 weeks reintegration to usual activities, observed in 100% of cohort at 4.5 months.

2 postoperative complications, superficial dehiscence of scar, no intervention required and a seroma that required I&D, no further complications after reintervention.

Conclusion: In patients with chronic complete avulsions, conservative management is usually insufficient and complete recovery and reintegration to sports or usual activities rarely occurs without surgical treatment. The surgical technique described allows for repair of the adductor tendon to the pubic bone and full return to activity in this small cohort of patients.


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POD 4. Lichtenstein Versus Desarda'S Open Inguinal Hernia Repair: An Updated Systematic Review And Meta-Analysis

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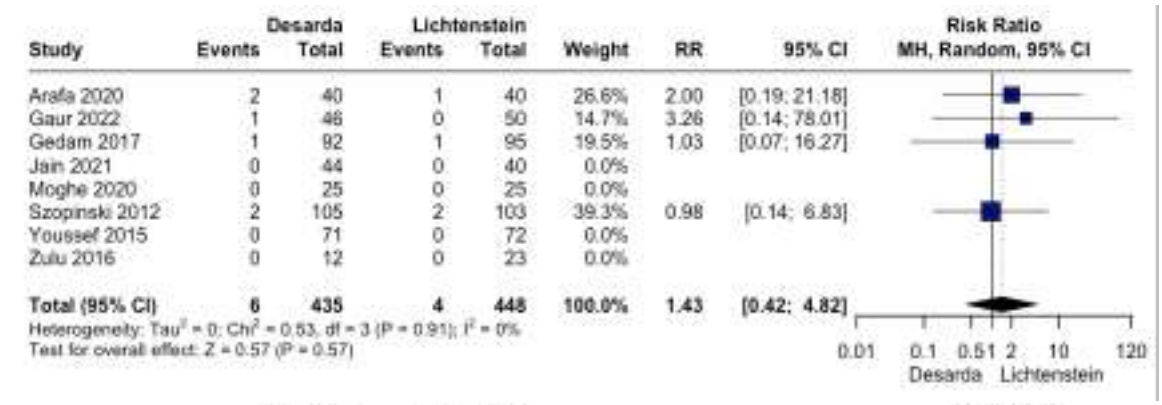
Montefiore Medical Center

Background: Despite recent guidelines recommending tension-free mesh repair for inguinal hernia repair (IHR), questions persist regarding potential postoperative complications associated with mesh, prompting consideration of alternative techniques such as the Desarda's tissue repair. We aimed to perform a systematic review and meta-analysis comparing Desarda and Lichtenstein techniques for IHR.

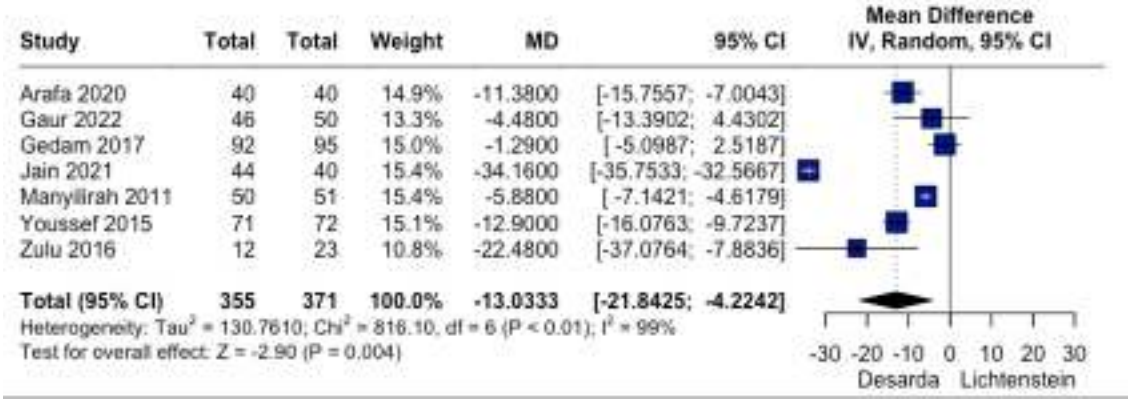
Methods: Cochrane Central, Embase, PubMed, MEDLINE, and Web of Science were searched for studies comparing Desarda and Lichtenstein's techniques for IHR from inception until April 2024. Our primary outcomes analyzed were recurrence, chronic pain, VAS of pain in 1 day, 1 week, 1 month, 3 months postoperatively, and time to return to basic activities, to gait, and to return to work. Secondary outcomes assessed were surgical site infection (SSI), hematoma, seroma, operating time, and hospital length of stay (LOS). Only studies with at least 1 year of follow-up were included in recurrence rate analysis. Data analysis was done using RStudio 4.1.2 Software.

Results: The initial search yielded 33 results, of which the full-text review was done for ten studies. A total of nine studies were included, of which six were RCTs, two were prospective cohorts and one retrospective study. Almost all the analyzed studies, including the RCTs, were performed in developing countries. Our sample comprised 984 patients, of which 485 (49,3%) underwent Desarda's IHR. We found no differences in 1 year recurrence rates between Desarda and Lichtenstein groups (1.38% vs. 0.89%; RR 1.43; 95% CI 0.42 to 4.82; P = 0.57). Furthermore, no differences were found in chronic pain rates (3.9% vs. 11.9%; RR 0.43; 95% CI 0.13 to 1.51.; P = 0.19). No differences were found in VAS scores at 1 day (MD -0.53; 95% CI -1.1 to 0.04; P = 0.07), 1 week (MD -0.33; 95% CI -0.7 to 0.05; P = 0.09), 1 month (MD -0.47 hours; 95% CI -1.27 to 0.33; P = 0.25), and 3 months (MD -0.25 hours; 95% CI -0.97 to 0.46; P = 0.49) postoperatively. Interestingly, Desarda IHR presented a lower time to gait (MD -0.47 hours; 95% CI -0.74 to -0.2; P < 0.001). No differences in time to return to basic activities (MD -1.27 hours; 95% CI -2.83 to 0.29; P = 0.11) or to work (MD -3.55 hours; 95% CI -8.73 to 1.64; P = 0.18) were found. Also, no difference was noted in SSI (1.8% vs. 2.25%; RR 0.77; 95% CI 0.28 to 2.13; P = 0.61), hematoma (4.6% vs. 5.8%; RR 0.79; 95% CI 0.43 to 1.48; P = 0.47) or seroma (3.2% vs. 5.1%; RR 0.7; 95% CI 0.35 to 1.39; P = 0.3) rates. No differences were found in LOS (MD 4.7 hours; 95% CI -0.67 to 10.1; P = 0.4). Desarda's hernioplasty presented a reduced operative time (MD -13 minutes; 95% CI -21.8 to -4.2; P = 0.004).

Conclusion: Our analysis showed no differences between Desarda and Lichtenstein techniques, despite Desarda's repair showed a reduced operative time and postoperative time to gait.


Study
Desarda Events Total
Lichtenstein Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Arafa 2020 2 40 1 40 26.6% 2.00 [0.19; 21.18]
Gaur 2022 1 46 0 50 14.7% 3.26 [0.14; 78.01]
Gedam 2017 1 92 1 95 19.5% 1.03 [0.07; 16.27]
Jain 2021 0 44 0 40 0.0%
Moghe 2020 0 25 0 25 0.0%
Szopinski 2012 2 105 2 103 39.3% 0.98 [0.14; 6.83]
Youssef 2015 0 71 0 72 0.0%
Zulu 2016 0 12 0 23 0.0%
Total (95% CI) 6 435 4 448 100.0% 1.43 [0.42; 4.82]
Heterogeneity: Tau² = 0; Chi² = 0.53, df = 3 (P = 0.91); I² = 0%
Test for overall effect: Z = 0.57 (P = 0.57)
0.01 0.1 0.51 2 10 120
Desarda Lichtenstein


Study
Desarda Events Total
Lichtenstein Events Total
Weight
RR
95% CI
Risk Ratio MH, Random, 95% CI
Arafa 2020 2 40 4 40 25.1% 0.50 [0.10; 2.58]
Gedam 2017 0 92 1 95 11.4% 0.34 [0.01; 8.34]
Jain 2021 4 44 25 40 35.1% 0.15 [0.06; 0.38]
Szopinski 2012 5 105 3 103 28.4% 1.63 [0.40; 6.67]
Total (95% CI) 11 281 33 278 100.0% 0.43 [0.13; 1.51]
Heterogeneity: Tau² = 0.9098; Chi² = 7.98, df = 3 (P = 0.05); I² = 62%
Test for overall effect: Z = -1.31 (P = 0.19)
0.01 0.1 0.51 2 10 120
Desarda Lichtenstein


Study
Total Total
Weight
MD
95% CI
Mean Difference IV, Random, 95% CI
Arafa 2020 40 40 14.9% -11.3800 [-15.7557; -7.0043]
Gaur 2022 46 50 13.3% -4.4800 [-13.3902; 4.4302]
Gedam 2017 92 95 15.0% -1.2900 [-5.0987; 2.5187]
Jain 2021 44 40 15.4% -34.1600 [-35.7533; -32.5667]
Manyilirah 2011 50 51 15.4% -5.8800 [-7.1421; -4.6179]
Youssef 2015 71 72 15.1% -12.9000 [-16.0763; -9.7237]
Zulu 2016 12 23 10.8% -22.4800 [-37.0764; -7.8836]
Total (95% CI) 355 371 100.0% -13.0333 [-21.8425; -4.2242]
Heterogeneity: Tau² = 130.7610; Chi² = 816.10, df = 6 (P < 0.01); I² = 99%
Test for overall effect: Z = -2.90 (P = 0.004)
-30 -20 -10 0 10 20 30
Desarda Lichtenstein

POD 5. Chronic Groin Pain Leading A 34-Year Old To Disability

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Oswaldo Cruz German Hospital

Background: A 34-year-old male with a six-year bilateral inguinal pain, at the start as left-sided discomfort without bulging. At first a left inguinal herniorrhaphy was performed using the Lichtenstein technique, although the patient continued to experience the symptoms. After the management with analgesics and anti-inflammatory medications there were no signs of pain relief. With continued pain led to a secondary bilateral inguinal herniorrhaphy. After the second surgery there was an increase of pain, characterized as neuropathic with a burning sensation and radiation to the bilateral testicular regions, showed to us the complexity of his condition. Physical examination revealed positive Tinel's sign at the bilateral external inguinal rings, and nerve mapping indicated hyperesthesia in the territories of the genitofemoral, iliohypogastric, and ilioinguinal nerves. After the findings, a diagnostic bilateral anesthetic block of these nerves provided temporary but complete pain relief, confirming a neuropathic pain associated with nerve injury. A surgical intervention was recommended, involving triple neurectomy and removal of polypropylene mesh, which had potentially contributed to the nerve pain.

Results: The surgical approach included laparoscopic bilateral sectioning of the genital branches of the genitofemoral nerves followed by an inguinotomy for mesh removal and neurectomy targeting the origins of the iliohypogastric and ilioinguinal nerves. Postoperatively, the patient was managed with pregabalin to address residual neuropathic pain, reporting complete resolution of symptoms at the one-year follow-up.

Conclusion: This patient illustrates to us the importance of nerve-related issues in patients with chronic inguinal pain post-herniorrhaphy. Patients may benefit from a better evaluation for neuropathic pain, mostly young one, especially when normal pain relief treatments fail. Surgical intervention, normally being the last resort, can be done if accurately targeted at the involved nerves. Chronic inguinal pain can be a management challenge, particularly in young and active individuals. Early identification of the pain and knowing if it's neuropathic is crucial, as may significantly alter the approach and improve the patient outcomes. This case show to us the potential success of surgical intervention to the specific nerve in alleviating chronic pain and restoring quality of life.

September 4-6, 2025
Renaissance Nashville Hotel

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