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# Umbilical Hernia- This is how I do it

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# Disclosures

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W.L. Gore

# Umbilical hernia Techniques

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## EVOLUTION OF SURGERY

1740 Cheselden - First umbilical hernia repair

1901 WJ Mayo "An operation for radical cure of umbilical hernia,"

- "Vest over pants"

1930 Spitzzy's umbilical hernia repair

1994 Amid and Lichtenstein "Tension-free repair of umbilical, epigastric and incisional hernia's - 1% recurrence rate at 5 years

1995 Bazire et al, "Hernioplasty: a tension-free repair for umbilical hernia"

**2001 Arroyo "Mesh is standard of care in umbilical hernia"**

## SURGICAL PROCEDURES

Primary Suture Repair

Intraperitoneal Mesh placement

Preperitoneal mesh placement

Mesh onlay technique

IPOM – Intra-Peritoneal Onlay Mesh

TARUP – Robotic Transabdominal Retromuscular Umbilical Prosthetic Hernia Repair

MILOS and EMILOS – Endoscopic Mini or Less Open Sublay

Darn technique - Suture weave

TESLAR – Total Endoscopic-assisted Linea alba reconstruction /Umbilical repair

# Mesh vs No Mesh Repair

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2002 G. Voeller – 93 lap repairs with mesh – 0% recurrence

2006 Asolati et al. AJS - VA study No difference except with co-morbid conditions

2006 Eryilmaz et al - Suture repair with higher recurrence rate (14% vs 2%) even in < 2 cm hernias

2008 Martin et al. Intraperitoneal mesh with 1% recurrence, 4.5% complications

2010 Vychnevskaya et al Intraperitoneal mesh with 2% recurrence

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2011 Tollens et al. 5 year follow up – 9% recurrence and 1.5% bowel obstruction

2012 Ambe et al – Mesh with recurrence rate of 2%

2012 Helgstrand Ann surg Danish Hernia registry Primary repair underestimated and has 4 year recurrence 15% / Reoperation rate 4%

2013 Botinck et al - Increased recurrence with > 2cm IP mesh (12%)

2014 Berger et al. JSR - No difference in non-obese, health patients

2019 Porrero et al Hernia – Preperitoneal mesh with low complication and low recurrence

# Sublay Mesh Placement

## INTRAPERITONEAL

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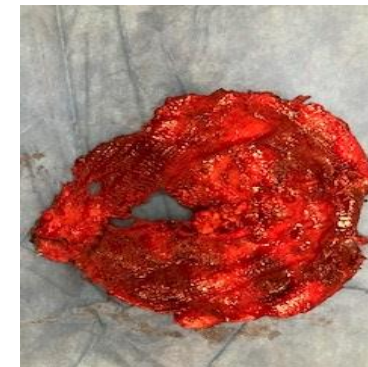
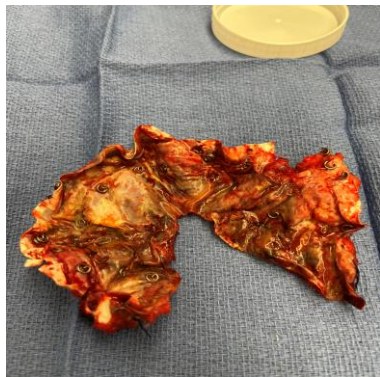
2008 Martin and Voeller Hernia Composite ePTFE/mesh safe and low recurrence

2010 Berrevoet et al. WJS Laparoscopic evaluation shows deficiencies in memory ring deployment during small ventral hernia repair.

2011 Berrevoet et al. Intraperitoneal mesh had higher recurrence, readmission and pain

2011 Muysoms et al Complications of mesh devices for IP umbilical hernia repair: a word of Caution

2013 Botinck et al – Centrapedal contraction in all meshes up to 77% increased recurrence with > 2cm IP mesh (12%)



# Chronic pain with umbilical hernia repair

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1. 2013 **Hernia** Erritzoe-Jervild and Christoffersen : Long term complaints after elective repair for small of umbilical hernia's  
12% of Patients reported moderate to severe pain at 36 months after primary repair

2. 2015 **Am J Surg** Christoffersen : Long-term recurrence and chronic pain after repair for small umbilical or epigastric hernias: a regional cohort study of 1313 patients

- 10 % recurrence with mesh 21% recurrence for primary repair
- 43 months avg 6% chronic pain after mesh and 5% after suture repair

3. 2020 **American Surgeon** Fadaee and Towfigh  
#Mesh: Social Media and Its Influence on Perceptions in Hernia Repair

- 14536 members on Facebook with 95% negative comments regarding mesh

## ACHQC Patient Engagement Committee

- Harriett Schwartzman – Chairperson
- Patients with chronic debilitating pain associated with hernia surgery and mesh
- Patients feel they are not being heard by their surgeon regarding QOL after hernia surgery

# ACHQC Outcomes - 16,105 Patients

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Gender - 69% male

80% White, 9.7% African American, 6% Hispanic

Wound Class - 96% clean

Operative time -  
60% < 1 hour  
28% less 2 hours

Approach-  
65% open  
25% robotic  
8 % laparoscopic

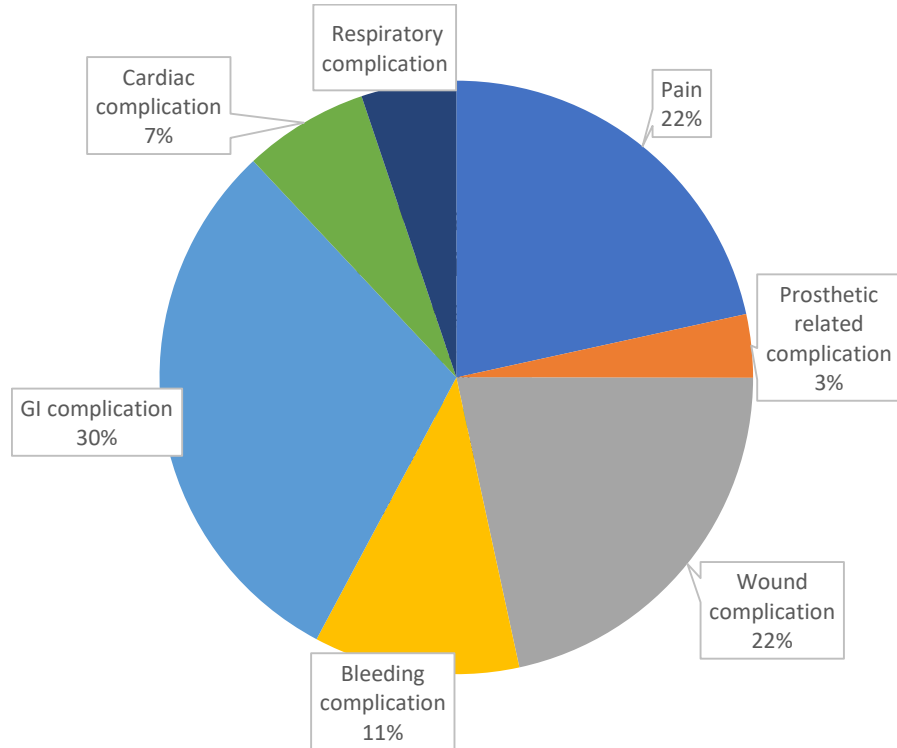
93% Sublay-  
12 % Rectorectus  
48 % Preperitoneal  
41 % Intraperitoneal

Co-Morbid Conditions:

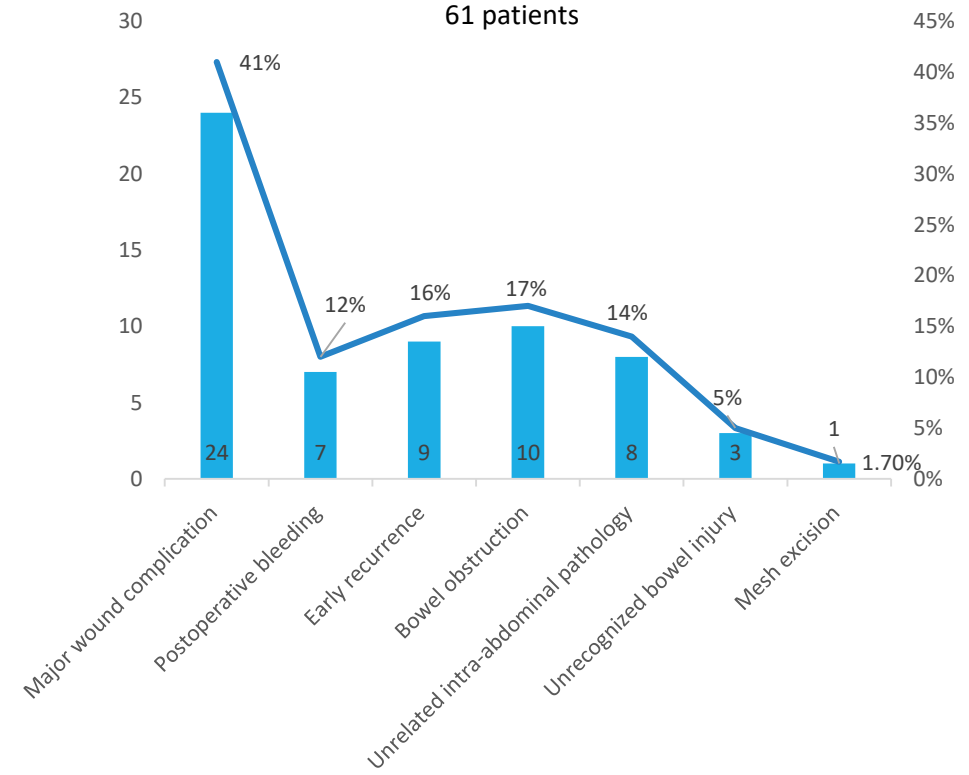
- Median BMI 31.5
- Tobacco use 9.5%
- Diabetes 11%
- HTN 36%
- COPD 2.9%
- Immunosuppressants 1.8%

# ACHQC 30 Day Follow Up - 12,487 pts

101 patients readmitted



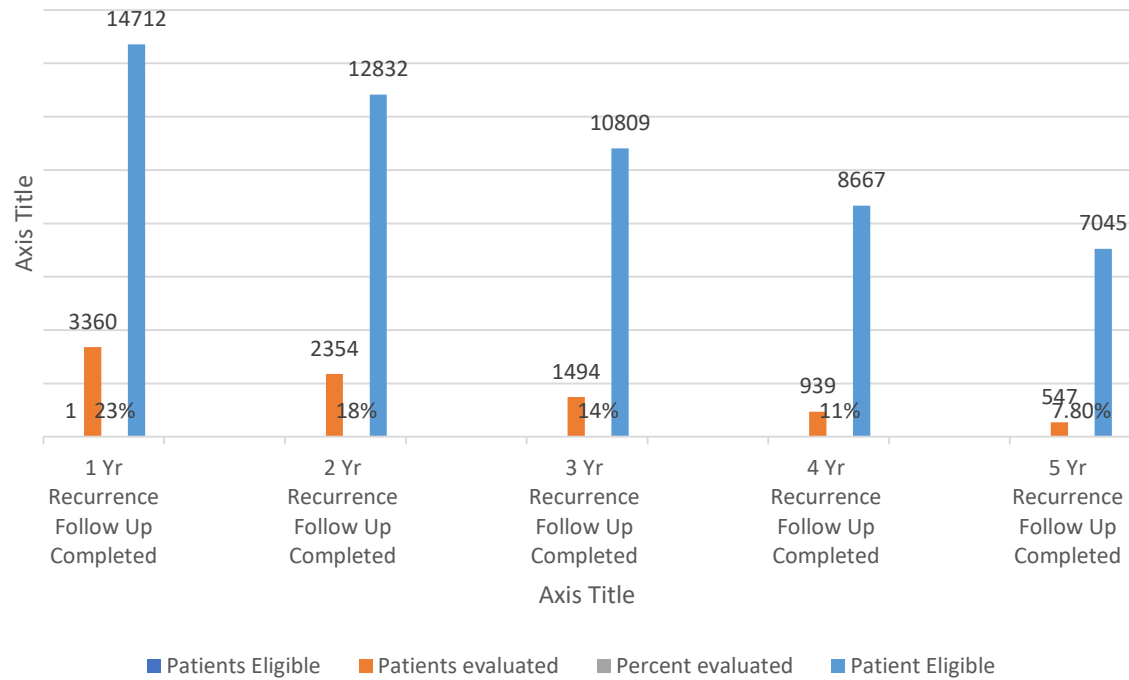
Return to OR Indications



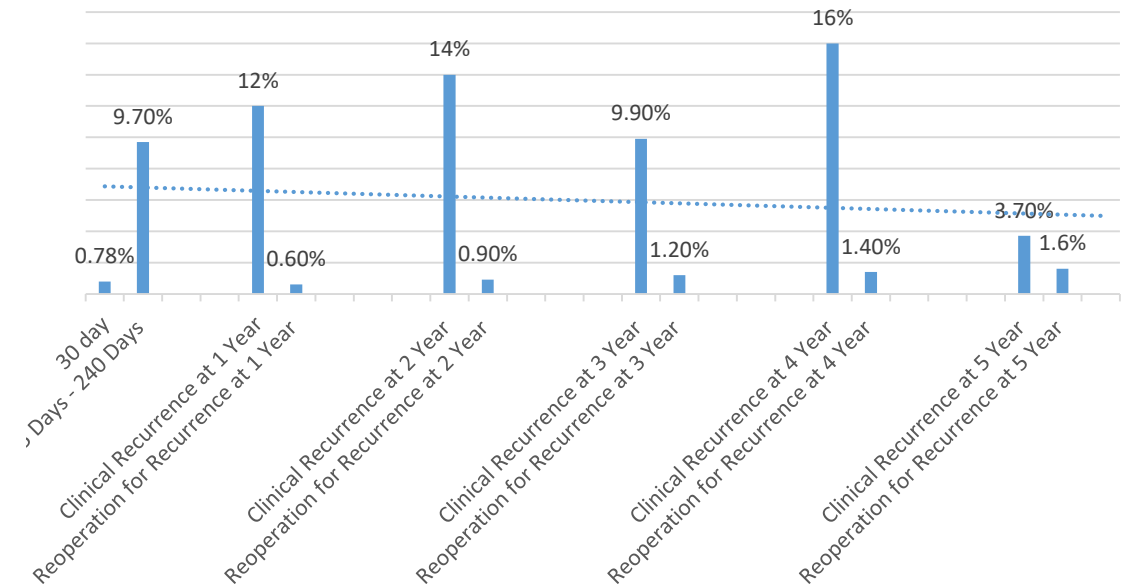
16,105 initial patients

# ACHQC 1 thru 5-year data from 16,105 operations

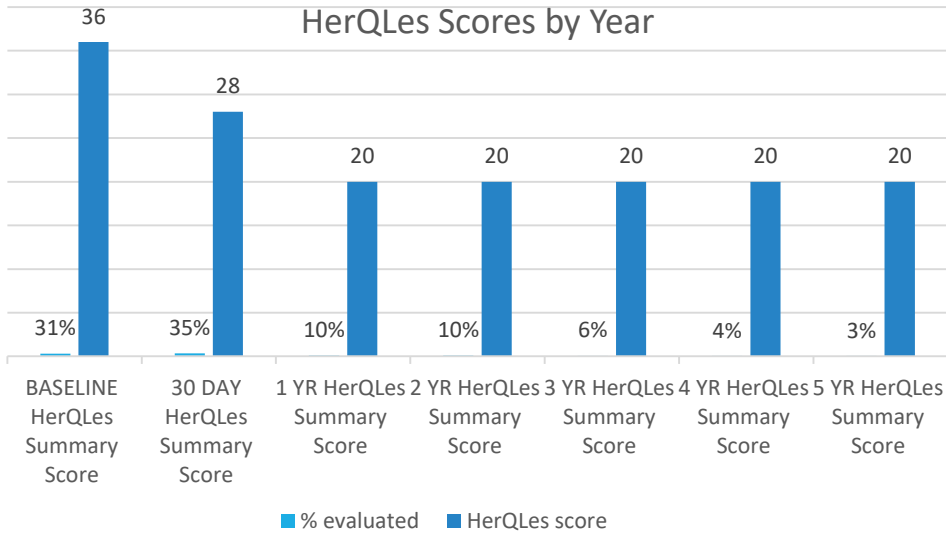
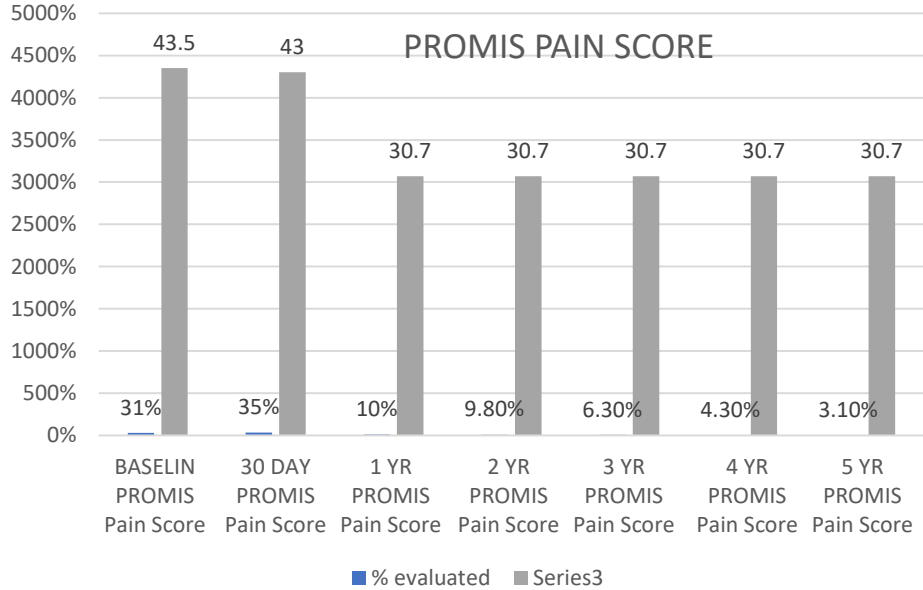
1 thru 5 year Patients Evaluated



Clinical Recurrence and Reoperation



# PROMIS and HerQles Quality of Life Scores



# Umbilical hernia repair – How I do it

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## Preoptimization –

- Weight loss - bariatric surgery, medical weight loss with semiglutide, dietary counseling
- Pre-op physical therapy – Core strengthening protocol
  - ACHQC exercises to all patients
  - Referral to pre and post surgical Physical Therapy
- Smoking Cessation Program
  - Rx and non-medical options
- Diabetic control – endocrinology team

# Umbilical Hernia Repair – How I do it

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## PRIMARY SUTURE REPAIR

< 1 cm and BMI < 26  
Potential pregnancy,  
mesh adverse pt,

Mayo repair vs primary suture repair

**Permanent Braided Monofilament suture**

## MESH REPAIR

> 1.5 cm  
< 1.0 cm but history of tobacco use  
BMI < 30  
Any comorbid conditions  
Lightweight PP mesh in the **Pre-peritoneal** position

Bmi >35 consider robotic TAPP approach  
Heavyweight mesh mesh in the Pre-peritoneal position

# Umbilical hernia Repair – How I do it

## PREGNANCY

If Asymptomatic - Attempt to wait until 6 weeks post-partum

If symptomatic – Primary repair in the 2<sup>nd</sup> trimester

- Primary mesh repair with discussion regarding recurrence vs Bioabsorbable repair
- discuss risks of synthetic mesh

## RECTUS DIASTASIS

1. Open Repair with retro-muscular or preperitoneal mesh in combination with plastic surgeon diastasis plication and abdominoplasty
2. Robotic Diastasis Plication and Pre-peritoneal Sublay Mesh
3. Preperitoneal Mesh Repair with discussion of recurrence



# Umbilical hernia in cirrhotic

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1. Pre-op and post op paracentesis
2. Pre-op beta blockers to decrease portal pressure if indicated
3. Preperitoneal Placement of synthetic mesh if no infection or bioabsorbable mesh if SBP or other concern for contamination

**Umbilical hernia safe in cirrhotic patients”**  
MD Pescovitz – 1984

**Management of complicated umbilical hernias in cirrhotic patients using permanent mesh: RTC**  
Ammar – 2010

**Umbilical Hernia Repair in Cirrhotic Patients With Ascites: A Systemic Review of Literature**  
Guo, Chenchen MSc\*; Liu, Quanguo MSc\*; Wang, Yong MD†; Li, Junsheng MD†

# ACHQC Personal demographics - 421 umbilical hernias

## Demographic data

72% male

90% White, 5% African American,  
0.7% Hispanic

9.5% with smoking history

12 % with DM

## Operative Data

95% Open

4% Robotic

1 % Laparoscopic

78% < 59 minutes

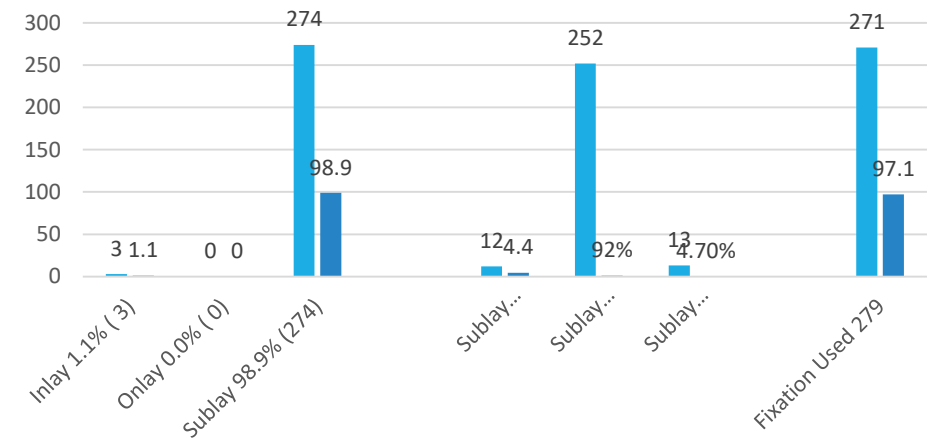
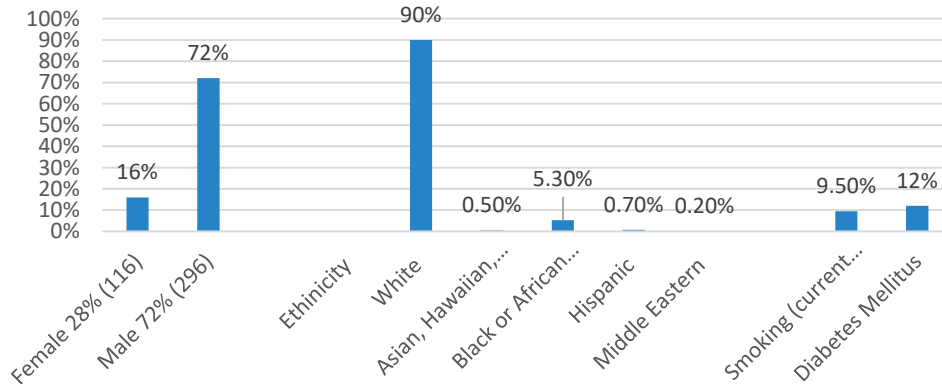
18% < 60 -120 minutes

## Operative Technique

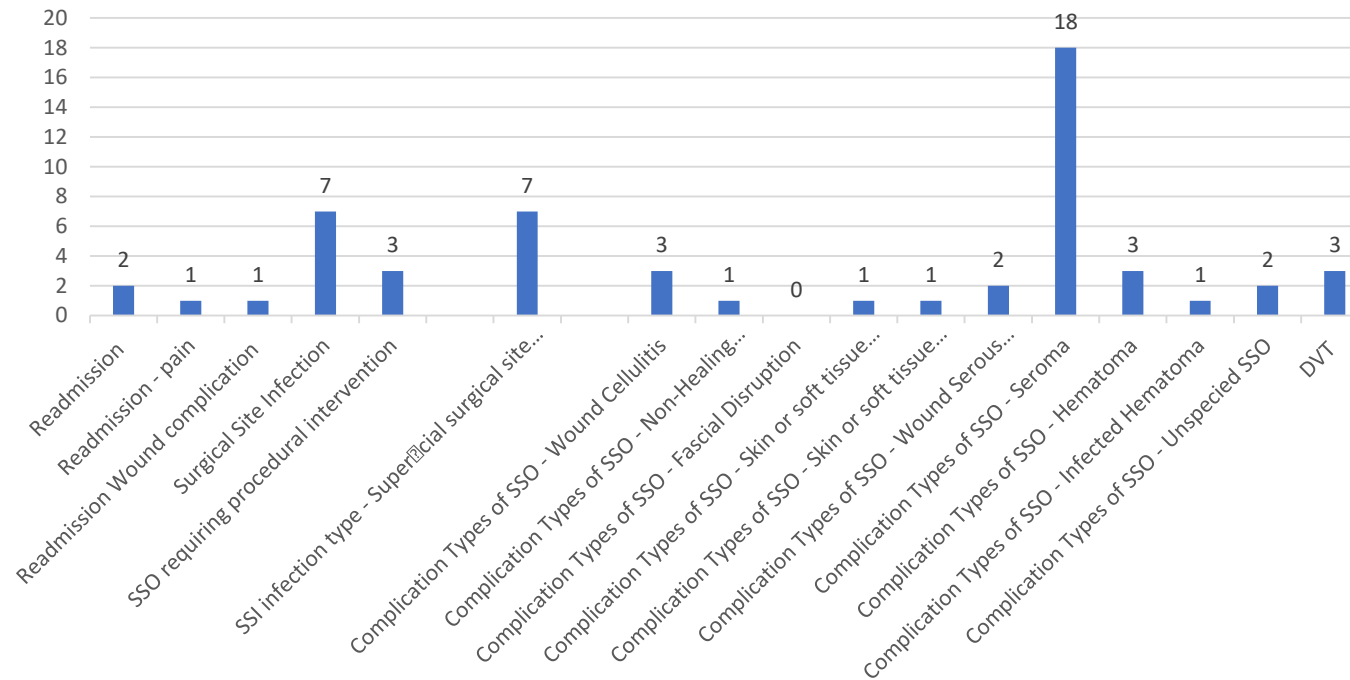
98% Sublay

92% Preperitoneal

97% Fixation

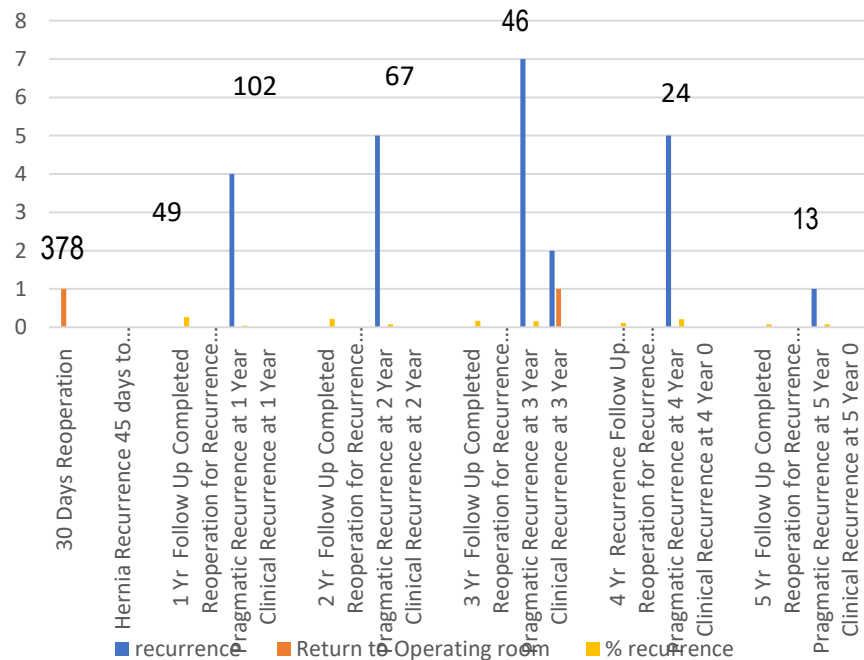


# Complications of 378 umbilical hernia repairs

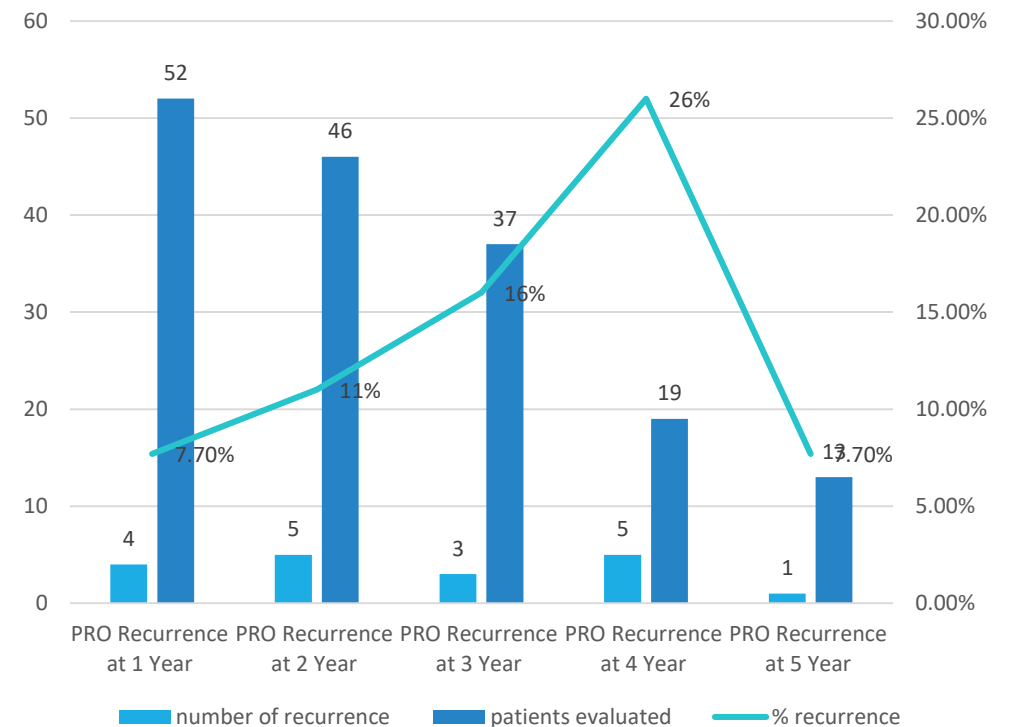


# ACHQC Personal 5 - Year Recurrence Data

2 recurrences (30 days and 4 years)



Patient Reported Outcomes years 1-5 post op



# What I learned

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1. **Pre-peritoneal** flat mesh placement with interrupted **permanent suture** (anterior technique) appears to be an acceptable technique
2. Robotic Pre-preperitoneal repair for BMI > 35 and if large diastasis requiring plication
3. Synthetic or bioabsorbable mesh pre-peritoneal for cirrhotic patients
4. QOL scores consistently show increase in chronic complaints with recurrence and appears to independent of the mesh type

## Future Goals

Establish better long-term protocols for follow up and data entry into the QC

Learn to incorporate/interpret QC data better for my practice

# Questions

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Last slide

