Bariatric Surgery & Ventral Hernia Repair

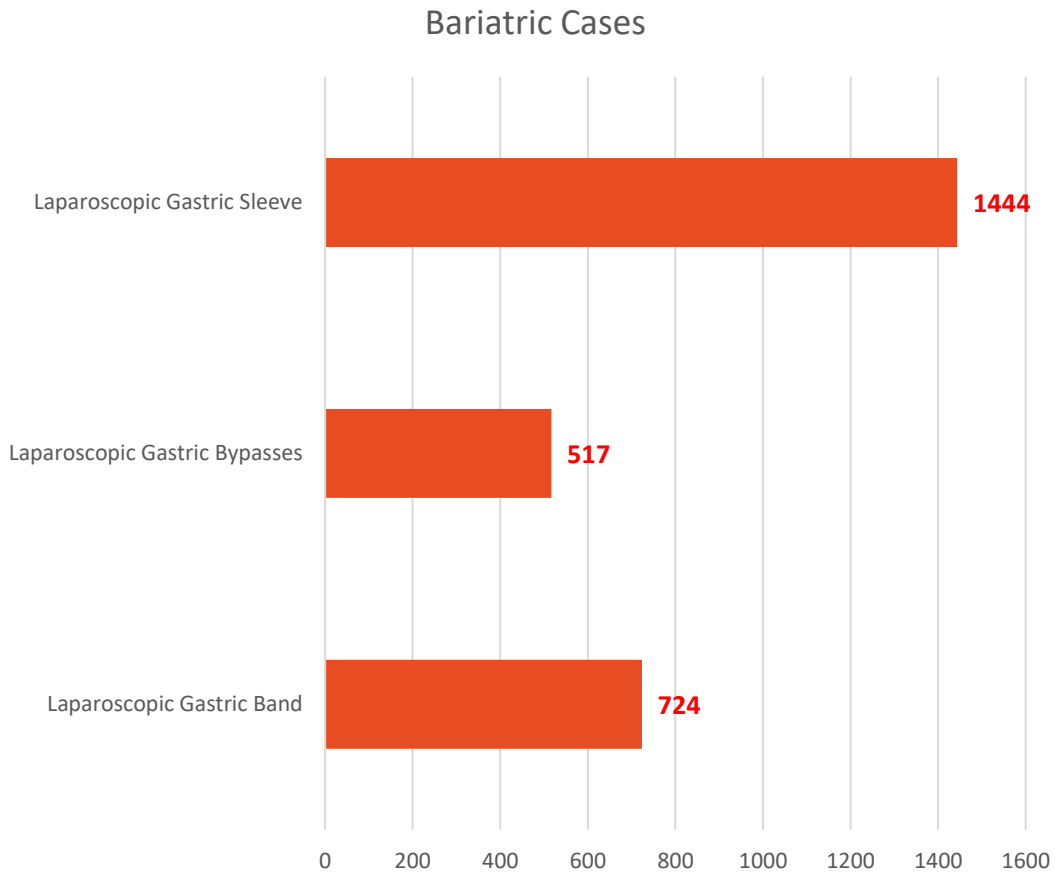
IFSO 2024

Melbourne

Ahmad Aly

Disclosures

- No Conflicts of Interest
- Faculty for Ethicon Surgical
- 3000 Bariatric Cases
- 20% Revisional



Ventral Hernia

- Impact Quality of Life
- Chronic Pain
- Physical Impairment
- Cosmetic / Psychological
- Repair Associated with Improved QOL long term

Langback O, et al. Surg Endosc. 2016 Nov;30(11):5023-5033
Ciomperlik H, et al. Surgery 2021 May;169(5):1158-1163.

The Hernia Surgeon

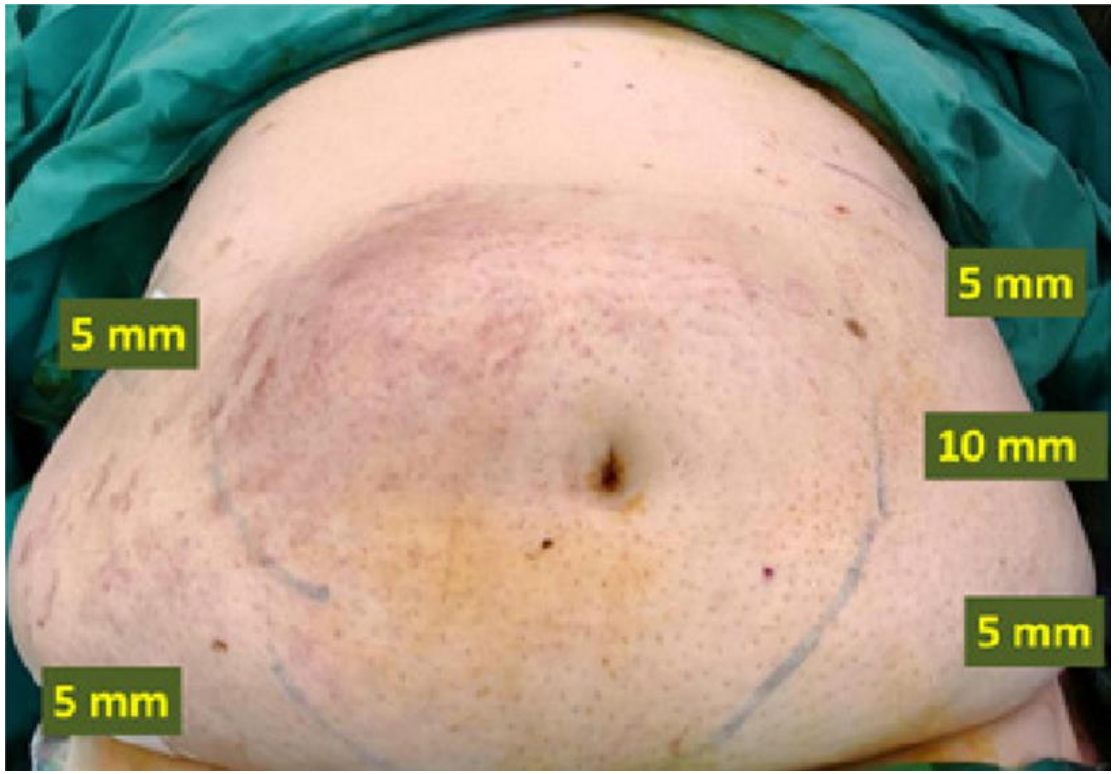
- It’s technically difficult
- Its not safe
- Results are poor

- Need to lose weight

- Referral For Bariatric Surgery

The Bariatric Surgeon

- How Am I going To Get Around That?
- Open Surgery? – how will I close it?
- Bypass – risk of post op bowel obstruction if I don't repair?

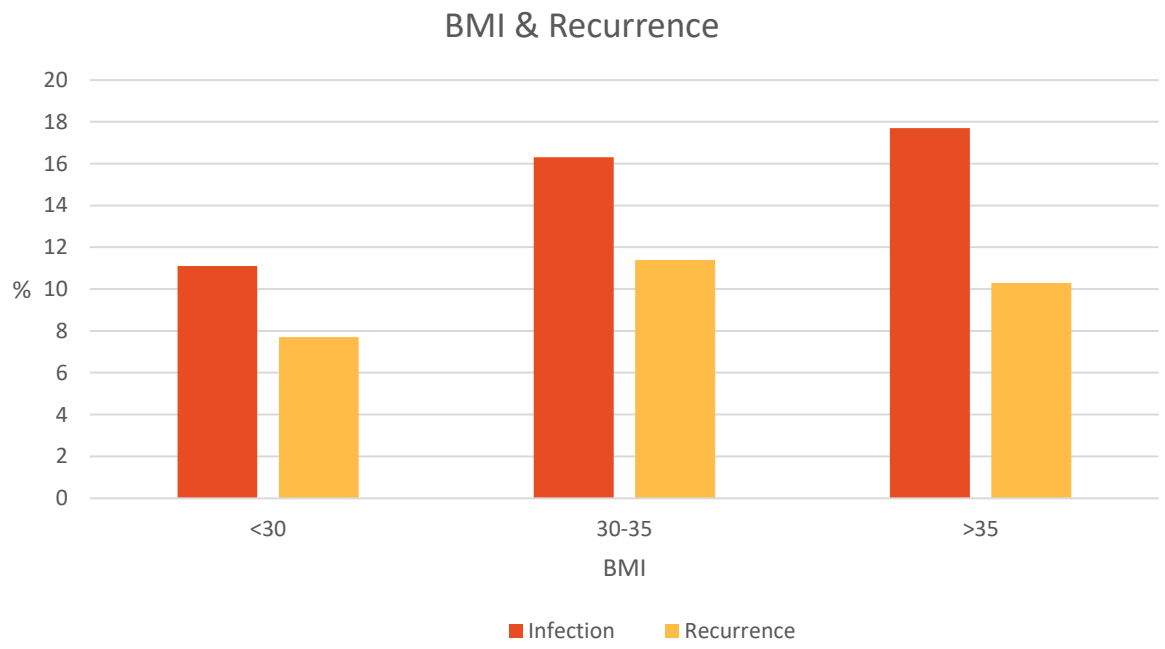


Lets Examine First The Concerns Of The Hernia Surgeon

BMI And Ventral Hernia

Increasing BMI….

- Surgical Site Infection
- Recurrence



Giordano et al 2017 Plast reconstr Surg (139): 1234-44

Metabolic Syndrome

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CrossMark

Surgery for Obesity and Related Diseases 14 (2018) 206–213

SURGERY FOR OBESITY AND RELATED DISEASES

Original article

Safety of open ventral hernia repair in high-risk patients with metabolic syndrome: a multi-institutional analysis of 39,118 cases

Dmitry Zavlin, M.D.[a,*], Kevin T. Jubbal, M.D.[b], Jeffrey L. Van Eps, M.D.[c], Barbara L. Bass, M.D., F.A.C.S.[c], Warren A. Ellsworth IV, M.D.[a], Anthony Echo, M.D.[a], Jeffrey D. Friedman, M.D., F.A.C.S.[a], Brian J. Dunkin, M.D., F.A.C.S.[c]

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Received July 31, 2017; accepted September 19, 2017

Greater

- LOS
- Complications
- Wound Infections
- Readmissions
- Reinterventions

OSA / Diabetes / HT

BMI Target?

- Park et al 2021, NSQIP 55,000 patients
  - Stepwise increased recurrence with BMI > 24
- Pernar et al 2017, NSQIP 1000 patients
  - BMI > 40 significantly greater wound complications
  - BMI > 40 significantly greater recurrence (29% vs 14%)
- Martinez et al 2020 (n=200)
  - BMI > 35 associated with greater wound complications and recurrence

Preop Weight Loss Target?

BMI < 30?
BMI < 35?
BMI < 40?

The Flaw

- Starting BMI represents risk

- Final BMI does not

➔ *It Is The WEIGHT LOSS that confers benefit (not the final BMI)*

Not The Same Patient

Presents At BMI 50

BMI 55 → 50

How Much Weight Loss Do We Need?

Facilitate Repair

Reduce Wound Complications

- 10% TBWL significant effect on metabolic syndrome

Reduce Recurrence*

- Uncertain
- Does subsequent weight regain increase risk of recurrence??

1. Hernia. 2023 Apr; Vol. 27 (2), pp. 273-279

Facilitating Repair

BMI alone does not predict ease of closure

- Smith[1] et al examined need for component separation for defects >7cm
  - BMI not predictive
  - *Intra abdominal fat distribution was predictive*
- So anthropometrics may be more important than BMI
- e.g. Waist : Height Ratio

1. Hernia. 2023 Apr; Vol. 27 (2), pp. 273-279

Waist Circumference

- Ideally Waist : Height ratio <0.6
- 1kg loss = 0.9cm loss

➔ In general 10% TBWL loss suffice

For Example

- Male 170cm / 150kg / Waist 110cm
- BMI 51
- W:Ht = 0.64
- 10% wt loss = 15kg = 13.5cm
- Final BMI = 46
- Final Waist Circumference = 96.5cm
- Final W:Ht = 0.56

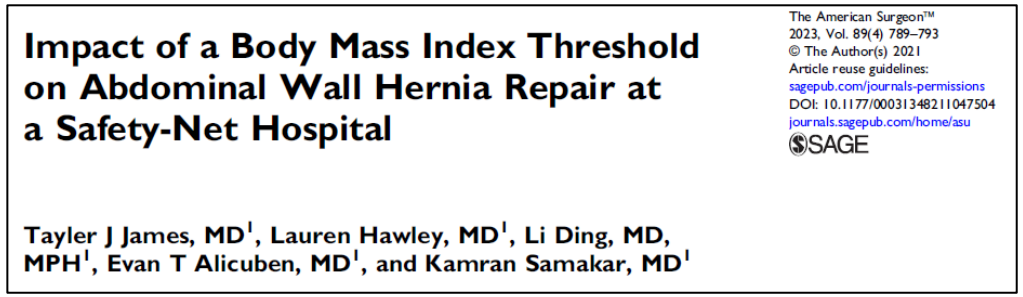
Prehabilitation Weight Loss

10% TBWL

Sufficient To Make Significant Difference

Really?

Medical Weight Loss Prehab – Cohort Study



Impact of a Body Mass Index Threshold on Abdominal Wall Hernia Repair at a Safety-Net Hospital

Tayler J James, MD[1], Lauren Hawley, MD[1], Li Ding, MD, MPH[1], Evan T Alicuben, MD[1], and Kamran Samakar, MD[1]

The American Surgeon™
2023, Vol. 89(4) 789–793

DOI: 10.1177/00031348211047504
journals.sagepub.com/home/asu
SAGE

- BMI threshold for repair of 33
- 75% did not undergo hernia repair over 27 months
- Of those that had surgery, 30% had emergency repair

Consequences

- Risk Of Deferred Hernia Repair[1]
  - Impact on quality of life
  - Defect size increase 30% over 30 weeks of conservative Mx
  - 8% emergency hernia repair
  - 28% cross over from conservative to repair group
    - Greater sepsis / fistula and mortality rate

1. Petermen et al. Surg Clin N Am 101 (2021) 307–321. Clin Nth Am

Consequences

- Emergent Surgery Greater Risk
  - Perforation
  - Fistula
  - Mortality
  - LOS
  - Readmission
  - Chronic pain
  - Lesser mesh use
  - Recurrence

Petermen et al. Surg Clin N Am 101 (2021) 307–321

Medical Prehab Programs - RCT

Two-year Outcomes of Prehabilitation Among Obese Patients With Ventral Hernias

A Randomized Controlled Trial (NCT02365194)

Karla Bernardi, MD,† Oscar A. Olavarria, MD,*† Naila H. Dhanani, MD,*†✉ Nicole Lyons, BS,* Julie L. Holihan, MD, MS,*† Deepa V. Cherla, MD,*† David H. Berger, MD,‡ Tien C. Ko, MD,* Lillian S. Kao, MD, MS,*† and Mike K. Liang, MD*†*

(Ann Surg 2022;275:288–294)

- 118 patients RCT
- 6 month program, target 7%TBWL
- 30% did not complete the program
- Greater emergency rate of surgery in prehab group (13.6% vs 3.4%) – most within 6 months
- No difference in complications
- No difference in recurrence at 2 years
- By 2 years all had regained weight

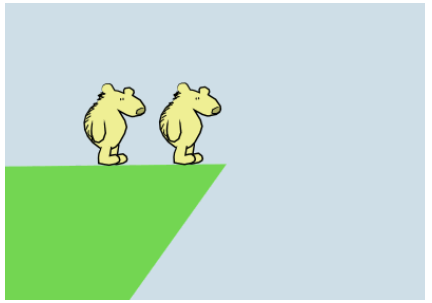
Preoperative Optimization Before Ventral Hernia Repair: A Systematic Review and Meta-analysis

Patricia Marcolin, Sérgio Mazzola Poli de Figueiredo, MD,† Sérgio Walmir de Araújo, MD,‡ Marcella Mota Constante,§ Vitor Moura Fé de Melo,‖ Shana Ginar da Silva, MSc, PhD,¶ Rui-Min Diana Mao, MD,† Jana DeJesus, MD,† and Richard Lu, MD†*

(Surg Laparosc Endosc Percutan Tech 2023;33:211–218)

Complication	Odds Ratio	Significance	Heterogenity
Seroma	0.70	n.s	Low
Haematoma	2.00	n.s	Low
Infection	1.96	n.s	Low
Reoperation	0.91	n.s	Low
Recurrence	0.66	n.s	Low
Overall Complications	0.80	n.s	Moderate

The Problem



- Medical weight loss programs have high attrition rates
- Adequate weight loss takes too long
- The new GLP-1 agonists potentially more successful
  - No direct data for hernia
  - Usually take > 3 months to achieve 10%TBWL
  - Do not prevent weight regain longer term
- Endoscopic options plagued by similar slow weight loss[1]
  - IGB – 15% at 32 weeks
  - Endoscopic sleeve – 13% at 52 weeks

[1]Abu Dayyeh BK, et al. Lancet 400(10350):441–45

Bariatric Surgery

- Definite Role
  - More effective & reliable weight loss
  - Powerful metabolic effect
  - Sustained weight loss longer term

- But….
  - Patient acceptance?
  - Technical feasibility?
  - Hernia complication risk?
  - Nutritional deficiencies and healing?

Approach?

- Staged – bariatric first
- Concurrent
- Post Repair

The Data Is Poor

Approach

- Moszkowicz et al National Database, 11,000 patients, 10 years, retrospective

Timing Of Hernia Repair	Recurrence	Complications	Mesh Infection
Before Bariatric Surgery	36%	11%	1.0%
Concomitant	18%	8%	4.3%
After Bariatric Surgery (2 years)	24%	17%	1.9%

- Likely selection bias (smaller hernias concomitant / complex hernias in post bariatric surgery group)

- Effect of nutrition / sarcopenia in post bariatric group?

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Surgery for Obesity and Related Diseases 20 (2024) 184–201

SURGERY FOR OBESITY AND RELATED DISEASES

Austin HEALTH

Review article

Hernia repair in the bariatric patient: a systematic review and meta-analysis

- Compared literature across all 3 approaches (with mesh)
  - Heterogeneity
  - Poor quality

- Hernia First Worst Outcomes* → Bariatric Surgery First Preferred

  → Greater Recurrence

  → Greater Wound Complications

(*Robotics is changing this space → total extraperitoneal repairs → outcomes not BMI dependent)

Bariatric Surgery First

Procedure selection

- KISS Principle
- Remember – the primary indication is the hernia

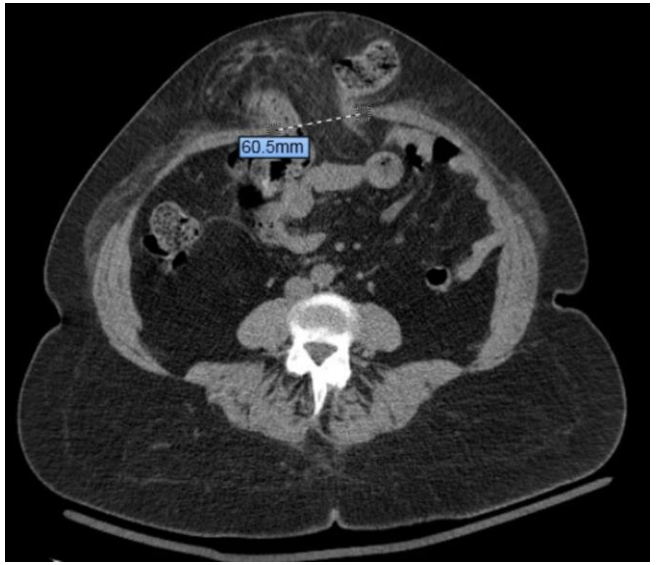
- Sleeve preferred
  - Single compartment (supracolic)
  - Low complication rate
  - Generally achievable even with somewhat compromised port placement

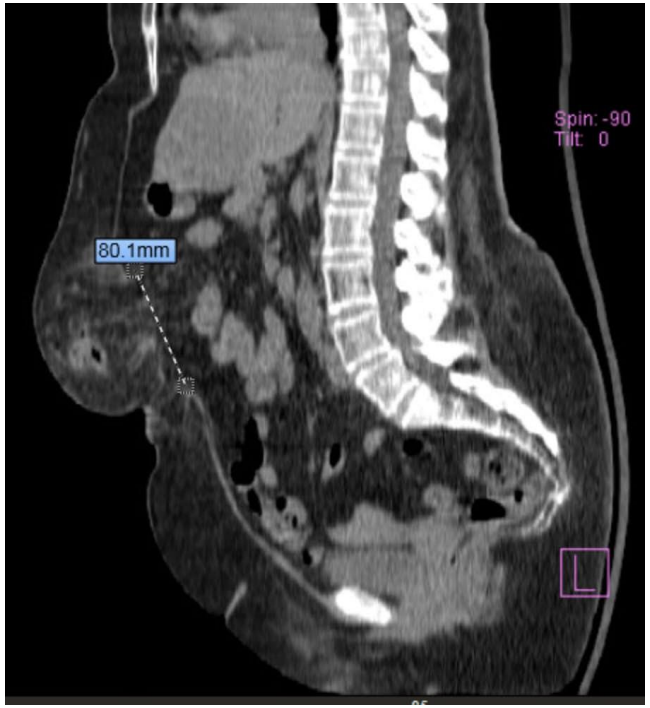
- Bypass
  - SBO is catastrophic
  - Port placement may be difficult (2 compartments)
  - Small bowel adhesiolysis difficult

Bariatric Surgery First

Access / Port Placement

- Preoperative CT can help planning
  - Defect boundaries
  - Extent of sac
- Be creative
- Add extra ports





Approach To The Hernia

- Leave hernia alone
  - Wide mouthed / self reducing
  - Omental plug
  - Severe adhesions

- Concomitant repair for “at risk” hernias in patients needing bypass
  - No omental plug
  - Highly symptomatic / obstructive hernias

Concomitant Repair

- Definitive
  - Small
  - Low risk patient

- Temporising
  - Suture repair / Biological mesh
  - Bridge / Omental Plug if can’t easily close
  - Botox

A Practical Approach

1. Asymptomatic / Low Risk Hernia

- Medical therapy (VLED / Pharmacotherapy) if surgery averse
  - limit to 3 months & monitor
- Bariatric Surgery
  - Assess suitability
  - Aim for sleeve

2. Symptomatic / High Risk Hernia

- Consider 6-8 weeks max VLED aiming for 5-10% TBWL
- Repair MIS if possible
- Botox
- Concurrent bariatric procedure & temporary repair with planned deferred definitive repair

Summary

- Preoperative weight loss preferable but not a deal breaker
- 10% TBWL likely sufficient
- Some risk associated with delayed repair

- Most secure strategy is staged repair with bariatric surgery (sleeve) first where possible

- Minimally invasive / robotic repair is a game changer where preoperative weight loss not possible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