Open Retromuscular Hernia Repair: Tips and Tricks from the Masters

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Disclosures

• Cook Biotech, Inc
  – Clinical Trial, Training and Education

• Bard
  – Training and Education

• Actuated Medical
  – Consulting

• Boston Scientific
  – Consulting, Training and Education

• Up To Date
  – Royalties
Objective

At the conclusion of this talk you should:

• Have a basic understanding of how I manage open retromuscular patients to reduce the incidence of post-operative infections

  – This is a “how I do it” type of talk, and I am not going to cite much literature
An expert is a person who has found out by his own painful experience all the mistakes that one can make in a very narrow field.

-Niels Bohr
Pre-Operative Evaluation/Optimization

- Liberal use of wound care clinic to help complete wound healing
- Culture of all sinus tracts to look for resistant organisms
- Obtain all old culture results to permit best evidence management of perioperative antibiotics
Pre-Operative Evaluation/Optimization

• Staged removal of infected mesh or suture material if possible
  – Attempt to downstage the wound
  – Drainage and antibiotics via ID if we cannot clear the infection
Pre-Operative Evaluation/Optimization

• Smoking Cessation – Mandatory
  – Urine Nicotine testing – send out lab before booking, at pre-op surg/anesthesia visit, POC testing on day of surgery
  – I do not permit the use of patches or gum or e cigarettes that contain nicotine at the time of surgery

• Reduction of Immunosuppression if possible
Pre-Operative Evaluation/Optimization

• BMI – Cutoff of 40 kg/m²
  – I offer a weight loss evaluation to anyone meeting NIH criteria
  – One failure in 50 undergoing this management plan

• Diabetes – HbA1C cutoff of 7% (152 mg/dL)
  – Independent of T2D, the presence of steatosis on imaging studies serves as a high-value predictor for POHG and wound complications
Things I do NOT do

– MRSA testing or eradication
– Routine evaluation of nutritional status
– Pre-operative use of nutritional supplements

• Impact
– Bowel prep

• Home use of wash/bath
  • Patients do their own bowel on the morning of surgery
Intra-Operative Maneuvers

• Antibiotics per SCIP guidelines, with changes made specifically for
  – MRSA
  – Known resistance patterns
  – Known active infection
  – Identification of intra-operative infected collections
  – Presence of an ostomy
  – Enterotomy creation
Intra-Operative Maneuvers

- GI ostomy sutured shut for all parastomal cases
- Removal of mesh, sutures, and tacks
  - Goal is complete removal, but I will leave portions behind if it would have otherwise resulted in an enterotom
- Complete removal of scar, umbilicus, redundant midline skin (midline panniculectomy)
- Culture of any concerning fluid collection
- I use ioban
Intra-Operative Maneuvers

• Irrigation of the retromuscular space with kefxol/gent (plus vanco if indication for MRSA)

• Almost 100% use of macroporous intermediate weight mesh (Bard Soft Mesh)
  – Including class 2-4 wounds

• Mesh is dunked in antibiotic irrigation
Intra-Operative Maneuvers

- One retromuscular drain
- Sub q drain based on estimation of the dead space
- Running sub q closure almost all the time
- Incisional VAC
  - All parastomal repairs
  - At ostomy takedown site
  - Repairs where there is significant wound tension upon skin closure
• I do not routinely change my gloves
  – But, we are a latex free facility and the gloves are terrible and they end up getting changed about 4 times a case anyway

• I do not wear a beard cover
  – No one has ever asked/told me to
Mesh Choice

• In CDC class II and III wounds the use of synthetic mesh (macroporous PPE) over biologic (APDM) in retromuscular repairs resulted in
  – 46% relative reduction of SSE
  – 61% relative reduction in SSI
  – 75% relative reduction in deep SSI
  – 66% reduction in hernia recurrence

Post-Operative

• Aggressive control of glucose, even in non-diabetic patients
  – Postoperative glucose >140mg/dL was a significant predictor of
    • 90-day wound occurrence (p=0.0080)
    • increased LOS (p=0.0280)
    • time to first solid meal (p=0.0384)
    • total cost (p=0.0029)
  – A positive glucose trajectory (increase in second post-op glucose > 20 mg/dL) was significantly associated with 90-day wound occurrence (p=0.0153)

Won et al JAMA Surgery 2015;150(5):433-40
Post-Operative

• Antibiotics per SCIP protocol unless there is a reason to continue
  – Positive intra-operative gram stain or culture

• If admission nasal swab MRSA positive
  – 6 patients in the last 5 years
  – Single dose of vanco (within 24 hours of surgery)
Post-Operative

- VAC dressing
  - Removed at day 7
  - Removed at DC
  - Removed if fails
  - Removed if need to look at wound
- Retromuscular drain removed before DC almost universally
  - 1 in the last 24 months
- Sub Q drain removed when less than 30 ml per day