

Technical Considerations for the Management of Appendicostomy-Related Paraconduit Hernias

Colin G. DeLong, MD and Eric M. Pauli, MD
Division of Minimally-Invasive and Bariatric Surgery
Penn State Milton S. Hershey Medical Center

Background

- The appendix can be utilized as a surgical conduit
  - Malone antegrade continent enema (ACE)
  - Mitrofanoff appendicovesicostomy
- The most cited complication of an appendicostomy is stenosis requiring surgical revision
- Para-appendicostomy, or paraconduit, hernias are very rarely reported in literature
  - Uniquely challenging surgical management has not previously been described

Methods

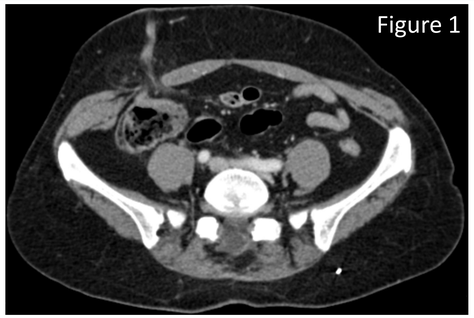
- We describe case report of an adult patient with an ACE complicated by para-appendicostomy hernia
- Discuss technical considerations of operative repair

Results

- 58 y/o female with history of spina bifida
- Underwent right-lower quadrant ACE procedure for neurogenic bowel, 5 years prior to presentation
- She developed a painful, reducible bulge

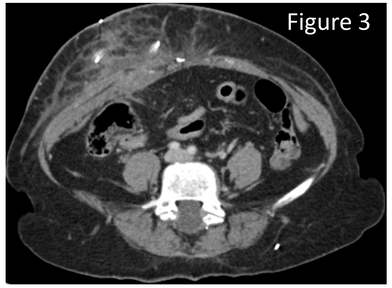
- CT scan demonstrates **(Figure 1, 2)**:
  - ACE conduit was formed lateral to rectus muscle (through linea semilunaris)
  - 2 cm paraconduit hernia with omental fat

Results



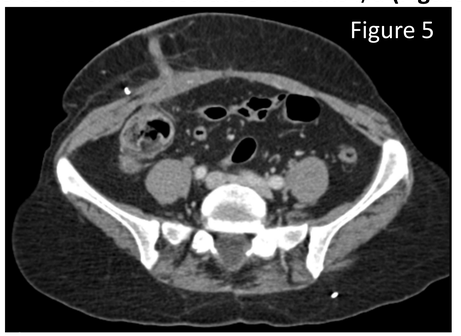


- First Operative Repair
  - 3 cm long, 1.5 cm wide defect
  - Closed with multiple interrupted figure-of-eight permanent sutures
  - Inferior suture placed to accommodate the appendix at inferior aspect of fascial defect
  - Elected for primary repair to avoid further dissection in developing a plane near the appendicostomy and to allow easier revision and resiting if recurrence occurred
- Postoperative Course
  - Developed infected seroma, requiring drain placement **(Figure 3)**
  - Fistulogram ruled out leak from conduit
  - Recurrence noted within 1 year **(Figure 4)**





- Second Operative Repair
  - Unable to resite conduit given tenuous blood supply
  - Carefully dissected the internal oblique and transversus abdominis from external oblique
  - Closed posterior sheath and anterior rectus sheath separately
  - Onlay repair of bioabsorbable mesh, secured with stainless steel staples and sealant
  - Drain placed
- Outcome: No recurrence noted at 39 months f/u **(Figure 5)**



Conclusion

- Technical Considerations
  - Utilize fistulogram to rule out conduit leak when complication arises
  - Consider resiting through rectus muscle, but can't risk devascularizing conduit
  - Limited dissection near the conduit to avoid compromising blood supply, while monitoring appendiceal artery pulse
  - Tissue based repair strategy to strengthen primary repair
  - Bioabsorbable mesh, with secure fixation, to avoid infection or migration that would cause unsalvageable conduit damage