Arcuate Line Hernia Masquerading as a Spigelian Hernia

Jack W, Sample M.D.[1], Maxwell D. Mirande DO[1], Juliane Bingener M.D.[1]

[1]Department of Surgery, Mayo Clinic, Rochester, MN

BACKGROUND

- The arcuate line (AL) is an important surgical and anatomic landmark that signifies the inferior border of the posterior rectus sheath
- Anomalous separation of the posterior rectus sheath from the overlying rectus abdominis muscle can create an intraparietal hernia space, called an arcuate line hernia (ALH)
- This rare abdominal wall hernia is often mistaken for more common hernia types, such as Spigelian, and has a paucity of evidence regarding surgical repair

OBJECTIVES

- Describe a case of symptomatic bilateral ALH managed with robotic-assisted preperitoneal mesh herniorrhaphy

CASE PRESENTATION

- A 52-year-old female with a body mass index of 42 kg/m^2 presented to an outpatient surgical clinic with one year of right-sided abdominal pain, recurrent episodes of nausea, feculent emesis, and weight loss
- Surgical history was notable for laparoscopic cholecystectomy
- Physical examination elicited right-sided abdominal tenderness to palpation without an appreciable underlying bulge or defect
- Computed tomography (CT) imaging from previous hospitalizations did not identify a cause of obstruction

©2024 Mayo Foundation for Medical Education and Research

FIGURES

Figure 1 – Arcuate Line Anatomy and Hernia Pathophysiology

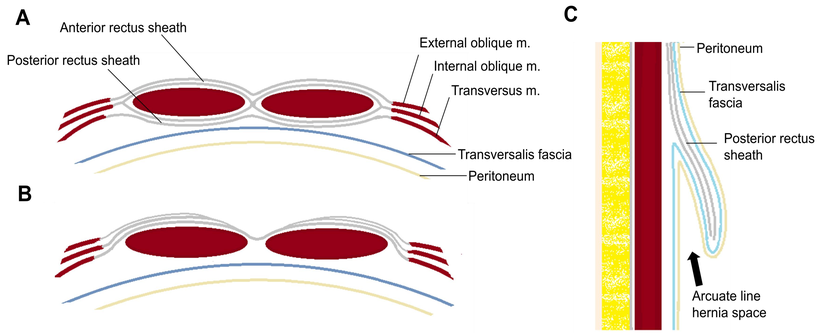


Figure 1 (A) Cross-sectional anatomy of the abdominal wall superior to the arcuate line. (B) Cross-sectional anatomy of the abdominal wall inferior to the arcuate line. (C) Anomalous separation of the posterior rectus sheath creating a potential intraparietal hernia space

Figure 2 – Preoperative Computed Tomography Scans

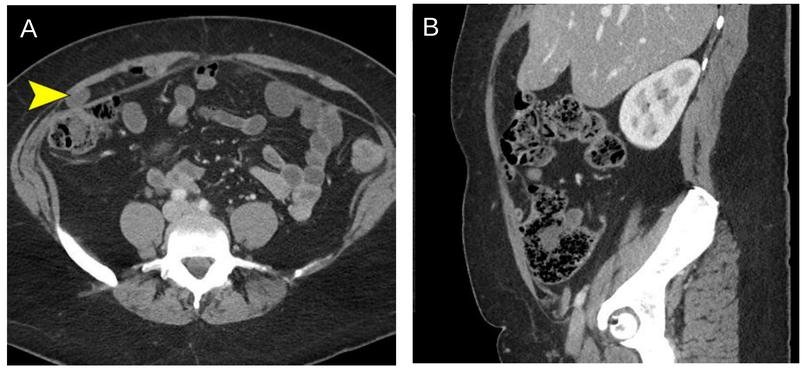


Figure 2 (A) Axial view of the abdomen demonstrating a bilateral arcuate line hernia involved by loops of small bowel on the right (arrowhead). (B) Sagittal view of the arcuate line hernia involved with bowel.

FIGURES

Figure 3 – Intraoperative Images

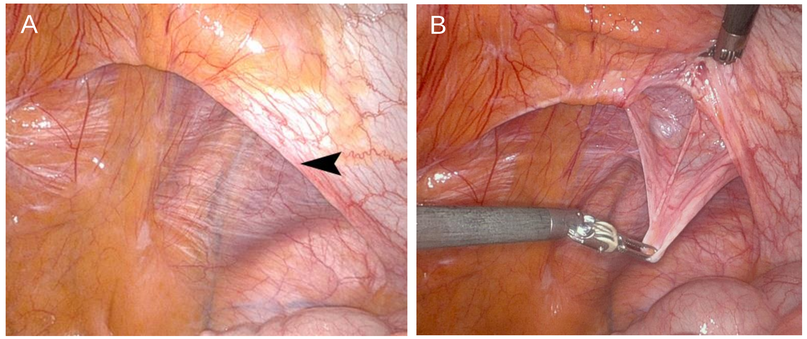


Figure 3 (A) Intraoperative robotic-assisted laparoscopic view of the anterior abdominal wall and arcuate line hernia (arrowhead). (B) Exposure of the arcuate line hernia sac.

Figure 4 – Robotic-assisted Preperitoneal Mesh Herniorrhaphy

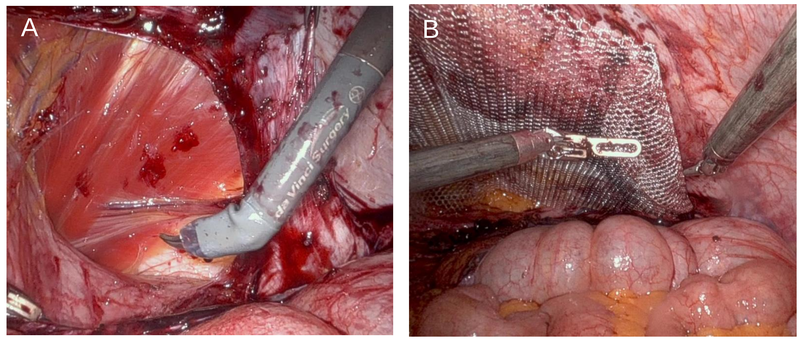


Figure 4 (A) Preperitoneal dissection exposing the arcuate line defect. (B) Placement of mesh to complete the preperitoneal herniorrhaphy.

CASE PRESENTATION

- CT enterography was performed, demonstrating incarcerated small bowel within the right abdominal wall reported as a Spigelian hernia (Fig. 2)
- The patient was consented for robotic-assisted preperitoneal herniorrhaphy
- Intraoperatively, there was no evidence of a Spigelian-type hernia; however, a prominent arcuate line defect was observed (Fig.3). After careful review of previous imaging, it became apparent this was a bilateral ALH (Fig. 2, arrow).
- A bilateral preperitoneal arcuate line herniorrhaphy was performed with polypropylene mesh (Fig. 4) and the patient was discharged the same day of surgery
- No complications were reported at six-months follow-up

DISCUSSION

- ALH is a rare abdominal wall hernia that may be misdiagnosed
- A robotic approach granted excellent visualization of the anterior abdominal wall defect and allowed for complete reduction of the intraparietal hernia sac

CONCLUSIONS

- ALH can be successfully managed with robotic-assisted mesh herniorrhaphy, which may be an advantageous surgical approach given the anatomic complexities of this rare hernia type

SAGES 2024

PROGRAM NUMBER: P029