Bilateral Spigelian Hernias Robotic Repair: A Novel Approach to a Rare Surgical Entity

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Abstract

Spigelian hernias are an uncommon protrusion defect noted between the rectus abdominis and the transversus abdominis muscles, at the semilunar line, with a low incidence of approximately 0.12% to 2% of all ventral hernias. They are associated with bowel incarceration and strangulation, hence surgical repair is indicated. Furthermore, the incidence of bilateral cases is noted to be even lower in the general population. Therapeutic alternatives for spigelian hernias include open repair, however laparoscopic repair stands as the standard of care in these cases. Feasible and successful robotic repair has been reported, with associated advantages in terms of visualization and surgical instrument mobility. We present the first ever reported cases of bilateral spigelian hernias repaired using robotic approach. We present two female Puerto Rican patients aged 63 and 54. Both patients were referred to our institution complaining of abdominal pain. Imaging studies found bilateral spigelian hernias. In both cases, using the Da Vinci Surgical System, Trans-abdominal Preperitoneal Repair was performed with creation of preperitoneal flaps, reduction of hernia contents, primary repair and reinforcement with bilateral Symbotek mesh systems. Both patients were discharged home tolerating oral intake with adequate wound healing. On follow up visits patients denied abdominal discomfort and had adequate wound healing. Robotic surgery for spigelian hernias poses an advantage over laparoscopic repair as improved visualization, mobility, and precision in movements allow for more gentle tissue manipulation. Furthermore, this is the first evidence of safe and effective repair in the uncommon entity of bilateral cases, providing a newer alternative in the setting of such presentation.

Introduction

- Spigelian hernias are an uncommon protrusion defect noted between the rectus abdominis and the transversus abdominis muscles.
- The entail 0.12% to 2% of all ventral hernias. They are associated with bowel incarceration and strangulation, hence surgical repair is indicated.
- The incidence of bilateral cases is noted to be even lower in the general population. Therapeutic alternatives for spigelian hernias include open repair, however laparoscopic repair stands as the standard of care in these cases.
- Feasible and successful robotic repair has been reported, with associated advantages in terms of visualization and surgical instrument mobility.
- We present the first ever reported cases of bilateral spigelian hernias repaired using robotic approach.

Case Presentations

- A 63-year-old female contacted her primary care physician complaining of increased abdominal discomfort and worsening dyspepsia, abdominal bulges and pain despite adequate previous pharmacological control. The patient's past medical history includes hypercholesterolemia, gastroesophageal reflux disease, and osteoporosis. The patient underwent abdominopelvic CT scan which demonstrated finding of bilateral spigelian hernias.
- 54 year old female patient who noted a left lower quadrant bulge after starting to lose weight intentionally, approximately 2 years prior to intervention. Hernia was mildly symptomatic, stabbing pain reported on exertion. Patient past medical history includes diabetes mellitus type 2 and hypertension. CT scan demonstrated bilateral spigelian hernias, no signs of peritonitis or bowel necrosis was noted on CT.

Imaging

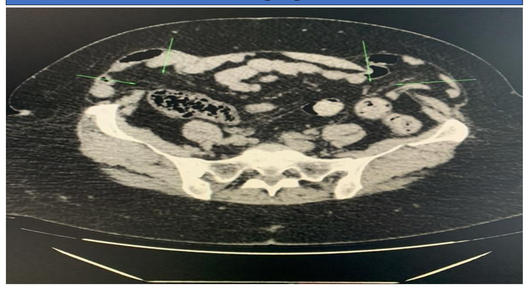


Figure. 1 *Non-contrast CT showing incidental finding of spigelian hernias bilaterally (green arrows)*

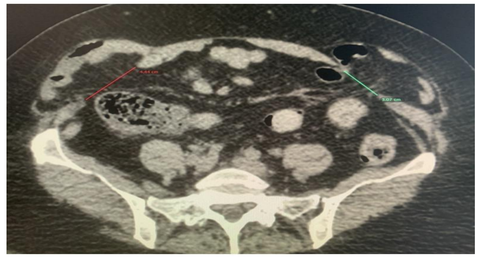


Figure 2: *Measurements of the abdominal wall defects Right 4.44cm (red) & Left 3.07cm (green)*

Management

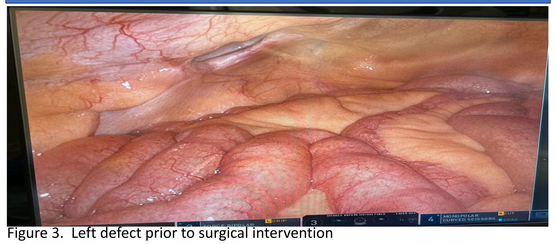


Figure 3. Left defect prior to surgical intervention

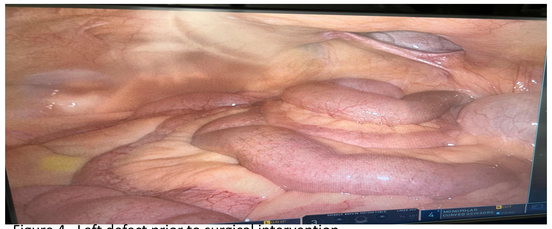


Figure 4. Left defect prior to surgical intervention

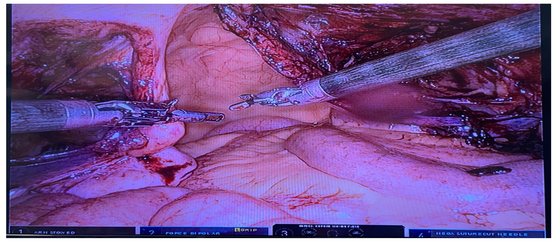


Figure 5. Dissection of bilateral prepreritoneal flaps

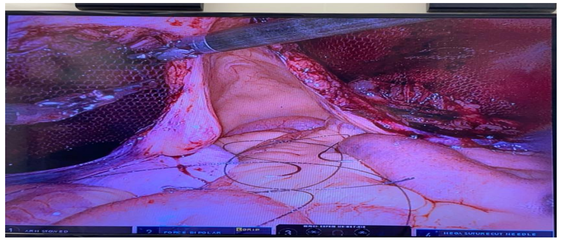


Figure 6. Mesh placement at bilateral hernial sites

Transabdominal preperitoneal flaps were developed on each side. Hernia contents and sac were completely reduced and peritoneum retracted and dissected up to transversus abdominis and posterior retroperitoneum. Hernia defect was closed with V-lock 0 sutures and reinforced with Symbotec 15 x 10 cm mesh. Peritoneal flap was closed with V-lock 0 suture. Fascia closed with dexon 0 suture and skin with monocryl 3-0 sutures.

Patient Outcomes

- Patients tolerated surgical intervention and had no adverse events on perioperative period.
- On ostoperative evaluation, 2 weeks after discharge, adequate wound healing and resolved pre-operative symtpmatology reported.

Discussion

Bilateral spigelian hernias pose a rare surgical entity, nonetheless management remains the same as unilateral etiologies. patients benefit from surgical intervention and the use of robotic surgery poses an advantage in terms of surgical field visualization, surgical intstrument range of motion. Considering the possibility of contralateral hernia must be present, despite the low incidence and there are no contraindications for robotic repair.

Conclusions

- Robotic surgical repair of on bilateral Spigelian hernias represents an advantage in precision resulting in less perioperatice pain, blood loss, shorter hospital stays, and quicker recovery.
- Robotic surgery treatment offers a successful, safe and effective approach for bilateral repair during the same operation.

References

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