'Sandwich' Approach to Complex Flank Hernia Repairs: A Case Series of 8 patients

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INTRODUCTION

- Flank hernias represent a rare and complex conundrum for abdominal wall surgeons and is defined as a hernia lateral to the rectus sheath in the area 3 cm above and below the umbilicus[1]
- Commonly from nephrectomies or retroperitoneal AAA repairs with an incidence of 14.9% and 20.6%, respectively and are less commonly seen with trauma or congenital abnormalities[2]
- Open, laparoscopic, and robotic repairs have been described. Despite these methods, complications, chronic pain, and recurrence remain high at 20%, 11%, 7.4%, respectively[2]
- Due to the complexity and rarity, there fails to be an established *gold standard* repair
- We hypothesized that a novel hybrid "sandwich" approach utilizing an open onlay mesh combined with a minimally invasive robotic underlay mesh would allow for a robust repair with low morbidity

METHOD

- Retrospective case series
- Patients who underwent flank hernia repair via our novel "sandwich" approach at a single institution by a single surgeon between Nov-2017 to Sept-2022

OPERATIVE TECHNIQUE

Open portion:

1. Incision overlying hernia and dissection down to hernia sac
2. Creation of subcutaneous flaps overlying external oblique fascia
3. Closure of external oblique fascia with running 0 V-Loc suture
4. Onlay mesh placement

Robotic portion:

1. Preperitoneal flap developed
2. Reduction of hernia contents (Figure 1)
3. Closure of facial defect with running 0 V-Loc suture
4. Placement of preperitoneal mesh (Figure 2)
5. Peritoneal flap closed with 3-0 Stratafix

RESULTS

- n = 8
- Average age = 64 years old
- Average BMI = 29.7 (R: 23.4 - 36.1, SD 4.2)
- Etiology of hernia:
  - 3 AAA
  - 3 nephrectomies
  - 1 spinal surgery
  - 1 trauma

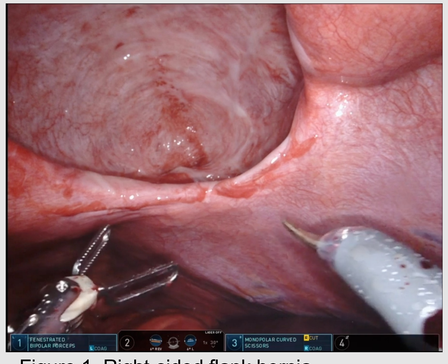


Figure 1. Right-sided flank hernia

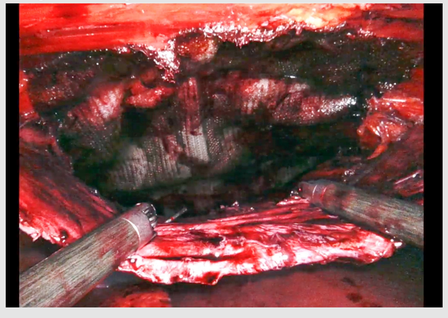


Figure 2. Preperitoneal mesh placement

RESULTS (continued)

Hernia characteristics

- Present for an avg of 24 months (R: 4 - 84)
- 3 (37.5%) were right sided and 5 (62.5%) were left sided
- 3 (37.5%) were incarcerated
- Mean hernia defect width was 8.6 cm (R: 4 - 15, SD 3.9) and length was 5.9 cm (R: 3 - 10, SD 2.1)

Operative details

- Mean operative time was 248 minutes (R: 169 – 428, SD 87)
- Mesh type for open onlay was Ethicon prolene mesh (75%), Gore synecor (12.5%), and Bard soft polypropylene mesh (12.5%).
- Mesh type for underlay was Ventralight echo (50%), Gore synecor (25%), Bard soft polypropylene mesh (12.5%), and composite Gore mesh (12.5%)

Post-operative course

- Mean length of stay was 1.75 days (R: 0 - 5, SD 1.8)
- 5 (62.5%) were discharged without narcotics
- 1 (12.5%) developed a hematoma and 1 (12.5%) developed a seroma; both managed successfully conservatively
- 1 patient (12.5%) required re-admission for pain control in the 30-day post-operative period
- ***There has been zero hernia recurrences or requirements for reoperation at a mean follow up of 20.8 months (R: 1 - 58, SD 12.2)***

CONCLUSION

- "Sandwich" repair with an open onlay and robotic underlay mesh represents a novel technique with minimal post-operative complications and no recurrence in our population. This technique may represent a more durable hernia repair than those previously described. Further prospective studies are warranted to elucidate a gold standard

REFERENCES

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