

Abdominal Operations after Bilateral Transversus Abdominis Release Herniorrhaphy: Analysis of Incidence and Outcomes

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BACKGROUND

- Patients remain at risk for requiring additional abdominal operations after ventral herniorrhaphy with bilateral transversus abdominis release (TAR) and permanent prosthetic mesh reinforcement.
- Violating the previously placed permanent prosthetic mesh theoretically increases a patient's risk for hernia recurrence, although this risk is not reported in the literature.
- This study aims to determine rates of reoperation after bilateral TAR and subsequent frequency of hernia recurrence.

METHODS

- Retrospective analysis of prospectively collected data from August 2012 to Jan 2022.
- All patients who underwent open ventral herniorrhaphy with bilateral TAR and reinforcement with polypropylene mesh in the retrorectus space who were ≥3 years from the date of surgery were included
- Patients were excluded who underwent TAR with parastomal herniorrhaphy, unilateral TAR, or those who died before 3 years postoperatively
- Primary outcome was any surgery within the postoperative period that violated the previously placed polypropylene mesh
- Secondary outcomes were type of surgery, type of mesh closure, primary (spontaneous) recurrence rates, and secondary (consequence of mesh violation) recurrence rates.

RESULTS

Patient characteristics	N
N available for ≥3-year follow-up	203
N with ≥3-year follow-up	188 (92.6%)
Average follow-up, y	5.4 (3 - 12.3)
Male	83 (44.1%)
Average age, y	60 (±11.3)
Average BMI, kg/m²	33.1 (21.5 - 44.6)

Peri-operative data	N=188
Contamination level	
Clean	167 (88.8%)
Clean-contaminated	10 (5.3%)
Contaminated	6 (3.2%)
Infected	5 (2.7%)
Operative time, min	368.9 (±138.7)
Recurrent hernia	107 (56.9%)
Redo TAR	13 (6.9%)
Hernia area, cm²	451.7 (±298.9)
Mesh Area, cm2	1204.1 (±596.4)
Spontaneous recurrence	4 (2.1%)

Reoperation characteristics	N=188
N requiring operation	26 (13.8%)
Number of additional operations	34
Open	24 (12.8%)
MIS	8 (4.2%)
Percutaneous	2 (1.1%)
Secondary recurrent hernia *	5 (14.7%)
Secondary recurrence after closure with absorbable suture *	3 (8.8%)

*(% additional operations)

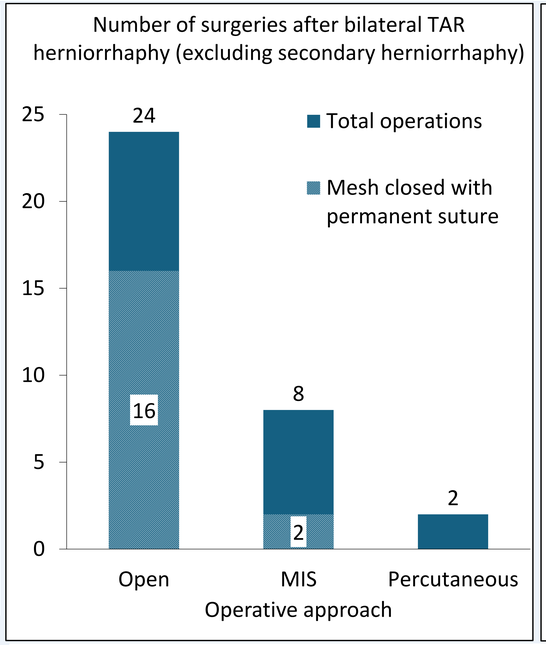
Reasons for surgery after bilateral TAR herniorrhaphy	Open (N=23)	MIS (N=7)
Related to TAR		
Spontaneous hernia recurrence	2 (8.7%)	1 (14.3%)
Posterior sheath breakdown	--	1 (14.3%)
Partial mesh excision	1 (4.3%)	--
Small bowel pathology	3 (13%)	--
Large bowel pathology	2 (8.7%)	--
Likely Related to TAR		
Small bowel pathology	5 (21.7%)	--
Unrelated to TAR		
Small bowel pathology	4 (17.4%)	--
Large bowel pathology	2 (8.7%)	--
Hysterectomy	1 (4.3%)	--
Cholecystectomy	2 (8.7%)	2 (28.6%)
Exploration	1 (4.3%)	--
Bariatric	--	2 (28.6%)
Hiatal hernia repair	--	1 (14.3%)

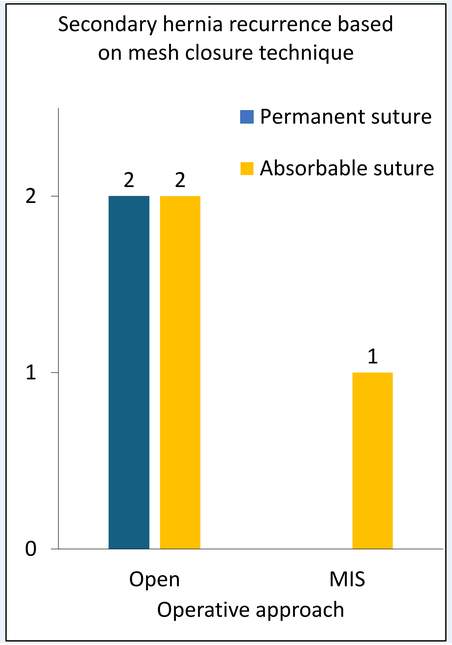
Permanent suture recurrences:

- Polypropylene central mesh fracture repaired with running prolene suture 5 years after repair.
- Midline laparotomy performed for bowel obstruction; mesh closed with running prolene suture and hernia recurred 1 year later.

Absorbable suture recurrences:

- One laparoscopic port site closed with vicryl suture developed recurrent hernia seven years later
- Two midline laparotomies, one for exploration, one for hysterectomy, both closed with PDS, developed recurrent hernia <1 year





CONCLUSIONS

- Approximately 13.8% of patients will undergo a subsequent operation following bilateral TAR herniorrhaphy
- The use of absorbable suture to close mesh defects during subsequent surgeries will ultimately result in a non-reinforced weakness in the mesh once the suture dissolves, leading to an increased risk of hernia formation.
- Although there is no literature or guidelines to suggest the best method of mesh closure following reoperation, the use of a permanent suture to close defects within permanent synthetic mesh will likely reduce the risk of subsequent hernia formation.