A Single Center's Three-Year Experience Utilizing the Polypropylene T-Line® Mesh for Abdominal Wall Reconstruction

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INTRODUCTION

- Incidence of incisional hernia following laparotomy is 11-20%; 400,000 ventral hernia repairs annually in US
- Without mesh recurrence rates can be up to 52%; with mesh rates can be up to 23%
- Recurrence following mesh repair can be failure of mesh at the hernia site for various reasons including excessive tension, suture failure, or "cheese-wiring" of fixation sutures through tissue
- Mesh sutures work to distribute tension across larger surface areas and reduce stress at the suture/tissue interface to prevent suture related failure.
- T-Line® mesh blends benefits of polypropylene mesh with anchor point-fixation features of mesh sutures

Objectives:

1. Evaluate our experience utilizing the T-Line® mesh in abdominal wall reconstruction
2. Evaluate for hernia recurrence and post-operative outcomes/complications

METHODS

- This was a single-center retrospective study of patients who underwent abdominal wall reconstruction utilizing the T-Line® mesh
- Data collected included demographics, medical comorbidities, operative details, complications, and hernia recurrence.
- Postoperative surveys were administered to assess patient reported outcomes
- Descriptive statistics were used to describe target population

RESULTS

- A total of 18 patients (13 females, 5 males) underwent open abdominal wall reconstruction utilizing an onlay T-Line® mesh during the study period.
- Mean age was 61.7 years with an average BMI of 30.9.
- The most common medical comorbidities were hypertension (72%) and diabetes (17%).
- 8 patients (44%) had prior abdominal hernia repairs, including open with mesh (17%), robotic with mesh (17%).
- Average surface area of mesh used was 455.5 cm^2 (range 190 – 600 cm^2).
- There were no hospital readmissions and no significant hospital or postoperative complications.
- The average length of follow-up was 184 days with no evidence of hernia recurrence.
- Survey response rate was 61% with an average time of 410 days since surgery.
- 1 person reported feeling their hernia recurred however no recurrence was noted on physical examination.
- There was little to no interference of activities of daily living associated with their abdominal wall.
- Concomitant panniculectomy was performed in 8 patients.

18 Patients: 13 Females, 5 Males

Age	61.7 (37 – 80)
BMI	30.9 (22.1 – 42.1)
Comorbidities: HTN DM COPD Smoking IBD	 13 patients 3 patients 1 patient 1 patient 0 patients
Prior abdominal hernia repair	8 patients 3 open repairs w/ mesh 3 robotic repairs w/ mesh 2 unknown prior repairs

Table 1. Patient characteristics

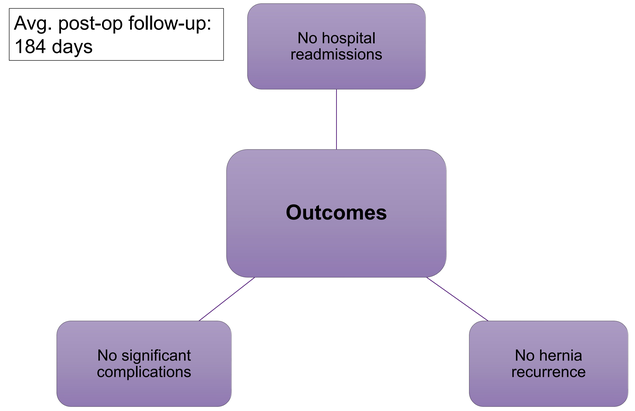

Figure 1. Primary outcomes flowsheet

Figure 2 (Left). T-Line mesh placed as an overlay prior to being secured with mesh strips

Figure 3 (Right). Trimmed T-Line mesh placed as an overlay and fixed into position overlying primarily repaired hernia defect with mesh strips used as fixation

DISCUSSION

- T-line® mesh used for abdominal wall reconstruction is both safe and effective with no observed complications noted.
- There were no instances of confirmed hernia recurrence in this cohort.
- The majority of patients who responded to the postoperative survey stated that their abdominal wall had a significant impact on their life.
- Only 1 patient reported feeling a hernia recurrence, however no recurrence was observed on their clinical follow-up.
- There was little reported interference with ADL associated with patients' abdominal wall, including moderate physical activity as well as household and work-related tasks.

CONCLUSIONS

- T-Line® mesh is both safe and effective in preventing hernia recurrence
- Patient reported outcomes demonstrate that the use of T-Line® mesh did not negatively impact patients' quality of life
- Future studies will be focused on long term patient outcomes, patient reported outcomes, multi-institutional collaboration, and increased sample size and post-operative follow-up.

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