Hernia Repair Outcomes During the Transition to Extraperitoneal Parastomal Hernia Repair: A Single Surgeon Experience

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INTRODUCTION

Parastomal hernias represent a difficult challenge encountered after ostomy creation. They result in significant morbidity, discomfort, and distress. Patients can present with acute obstruction and protrusions that may cause pain and make pouching challenging.

Traditionally, parastomal hernias were managed with intraperitoneal mesh as a keyhole or Sugarbaker-type repair. However, the development of both open and minimally invasive extraperitoneal approaches have allowed for the use of uncoated mesh constructs in a plane isolated from intraabdominal viscera.

AIMS

The aim of this study is to characterize trends in changes in parastomal hernia technique and examine how these changes have affected mesh type, recurrence rates, and postoperative complications.

METHODS

This is a single surgeon retrospective review of consecutive adult patients who underwent surgical intervention for parastomal hernias between June 2010 and April 2023. In our institution, the paradigm shift from intraperitoneal approaches to parastomal hernia repair to extraperitoneal repairs occurred in 2017. Therefore, a pre-shift cohort from 2010-2016 was compared to a cohort of patients from 2017-2023. Primary outcome was parastomal hernia recurrence and complications. Secondary outcomes included type of ostomy revised, mesh, surgical approach, infection, hematoma, and reoperation.

Traditional Preperitoneal Parastomal Hernia Approaches

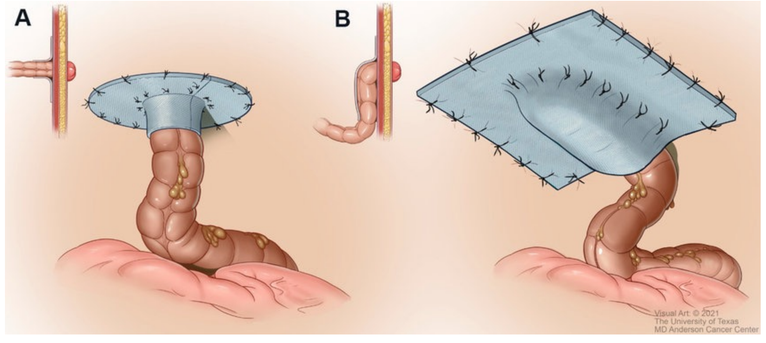


Figure 1: Keyhole parastomal hernia repair (left) and Sugarbaker parastomal hernia repair (right)

Modern Extraperitoneal Parastomal Hernia Repair Techniques

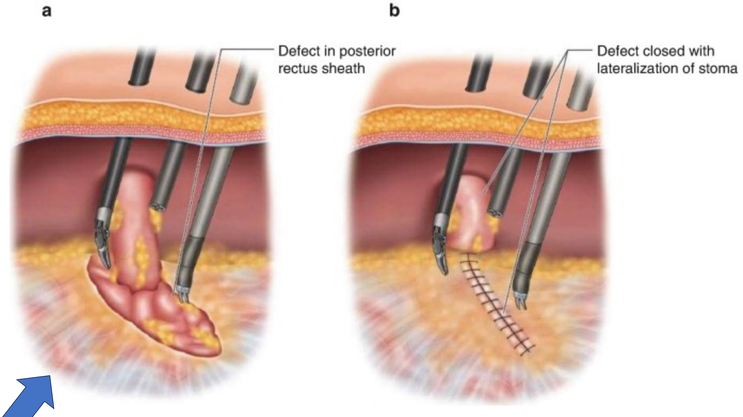


Figure 1: Keyhole parastomal hernia repair (left) and Sugarbaker repair (right)

RESULTS

A total of 61 of patients were identified. Of these, 64% (39) had enterostomies or colostomies, and 36% (22) had urostomies.

In the entire cohort, operations were conducted via an open approach in 25% (15), laparoscopically in 34% (21), and robotically in 41% (25).

Between 2010 and 2016, repairs were performed laparoscopically 72% (13) or open 28% (5). Biologic mesh was used in 56% (12) and synthetic mesh was used in 28% of cases.

With the adoption of open retromuscular techniques, from 2017-2023, a retromuscular repair was performed 74% (32) while intraabdominal coated mesh was used in 19% (8) of repairs. During this time period, repairs were performed laparoscopically 19% (8), robotically 58% (25), or open 23% (10). Robotic extraperitoneal keyhole repairs were performed for paraursotomy hernias in 30% (13) of cases. Robotic extraperitoneal Sugarbaker repair was performed in 28% (12) of patients. Open retromuscular repair in 16% (7) or patients. Biologic mesh use declined to 5% (2), while synthetic mesh was used in 86% (37) of cases.

The known recurrence rate was 8% (5). Complications were seen in 7% (6) of cases, with immediate issues of 2 hematomas (3%). Delayed complications were experienced in 3% (2) with infection and conduit erosion requiring reoperation for salvage. There were no significant differences in complications between cohorts.

DISCUSSION

As parastomal hernia repairs shifted from mainly traditional preperitoneal repairs to extraperitoneal mesh placement, there was an increase in synthetic mesh use and robotic operations. However, the frequency of open approaches remained relatively stable. Complication rates remained high, but were not significantly changed with the adoption of modern mesh placement techniques.

CONCLUSIONS AND FUTURE DIRECTIONS

Parastomal hernia repair has undergone a paradigm shift with the adoption of extraperitoneal open and robotic approaches. By doing so, parastomal hernias can be repaired via an extraperitoneal approach instead of traditional intraperitoneal approaches. This protects viscera from the mesh prosthesis and allows for cost-effective and simplified mesh to be placed in a more favorable location with regards to adhesions, infection, and delayed complications. However, recurrence rates are still significant, representing the challenging nature of this difficult problem.

CITATIONS

Figure 1: Smith, J. M., Kapur, S. K., Mericli, A. F., Baumann, D. P., & Butler, C. E. (2022). Parastomal hernia repair. *Plastic and Aesthetic Research*, *9*(9), Article

Figure 2: Pauli, E.M., Sharma, P. (2022). Extraperitoneal Repair for Parastomal Hernia. In: Baig, S.J., Bhandarkar, D., Priya, P. (eds) Newer Concepts and Procedures in Hernia Surgery - An Atlas. Springer, Singapore.