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LAPAROSCOPIC REPAIR OF PARASTOMAL HERNIAS WITH A MODIFIED SUGARBAKER TARM TECHNIQUE

Surgery

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ABSTRACT

Background: Parastomal hernia is the most common complication in various types of stomas. It can progress almost asymptomatically, often resulting only in an abdominal deformity in the vicinity of the stoma, but in extreme cases it can lead to bowel incarceration and strangulation, thus necessitating immediate surgery With the increasing experience in laparoscopic ventral and incisional hernia repair this minimal invasive technique has also been used to repair parastomal hernias. The complications of intraperitoneal onlay mesh (IPOM) repair for ventral hernias have favored sublay mesh placement like the open Rives–Stoppa repair (ORS) (9). **Results:** Modified Sugarbaker repair of parastomal hernia with a TARM approach avoids mesh–bowel contact , safe and feasible procedure, even in patients with a surgical history of open resection.

KEYWORDS

Laparoscopy; parastomal hernia; hernia with loss of domain; modified Sugarbaker TARM technique

INTRODUCTION

Parastomal hernias are the most common long-term complication following ostomy surgery, with a very high incidence rate (50%) and recurrence rate even after repair (18%) (7,8)

A parastomal hernia is often well tolerated and a repair is only needed if symptoms like obstruction, incarceration or difficulty of appliance (colostomy pouch) application. Many different techniques for repair of parastomal hernias have been proposed (1). Open techniques can be divided into : local tissue repair, repair by stoma relocation and repair with mesh and Laparoscopic repairs can mainly be divided in two groups : "keyhole-techniques" and "Sugarbaker tech"

Several different types of "keyhole" repairs have been described (2-6)

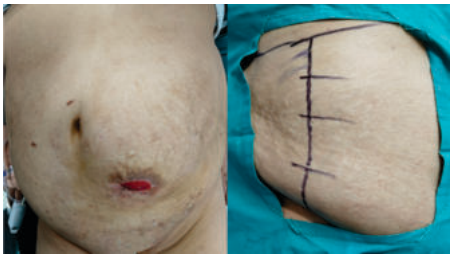
In so-called "Sugarbaker" or "modified Sugarbaker" techniques a single uncut piece of mesh is placed as an intraperitoneal onlay patch. In this paper we will describe in detail our current technique for repair of parastomal hernias in modified sugarbaker technique TARM.

Parastomal Hernia With Loss Of Domain Algorithm

Pre operative management of loss of domain- BOTOX INJECTION
BTX is a neurotoxin that acts selectively on presynaptic cholinergic nerve terminals, blocking the release of acetylcholine resulting in temporary flaccid muscle paralysis without systemic effects.

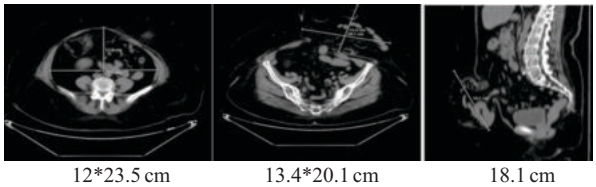
Dose: 300 Units
Site: Total at 6 placed :- right/left subcostal; right/left anterior axillary; right/left lower quadrants each site equal divided dose diluted in normal saline

Time : waited for 45 days for surgery



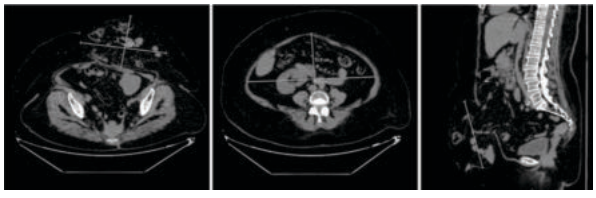
Pre Operative Image **Botox Marking Site Image**

Pre Botox Ct



12*23.5 cm 13.4*20.1 cm 18.1 cm

Post Botox Ct



12.6*19.8cm 2.9*29.9cm 16.8cm

Intra operative Technique - Laparoscopic modified sugarbaker TARM Repair

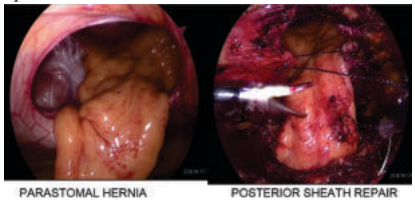
- Patient was operated under general anesthesia, in a supine position.
- A urinary catheter and a nasogastric tube were passed.
- A first-generation cephalosporin is administered intravenously.

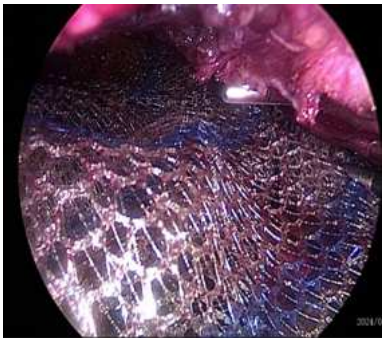
- Pneumoperitoneum created by verres/open technique based on surgeon's expertise. Trocar placement done as per below diagram

- A pneumoperitoneum is achieved with a Veress needle insertion; the most preferred site for initial access is the Palmer's point (2)
- Laparoscopic examination of the abdomen is performed, and any abnormalities are noted. If there is no contraindication to proceed

- After adhesiolysis and reduction of contents of the hernial sac, the defect was assessed by passing a tape transabdominallyIt is easy to overestimate the size of the defect when there is pneumoperitoneum; thus, insufflation pressure should be reduced to 8 to 10 mmHg for this step. Using electrosurgery or harmonic scalpel, a 6 to 8 cm long transverse incision was made on the peritoneum (P) and posterior rectus sheath (PRS), underlying the rectus abdominis muscle, 5 to 6 cm proximal to the defect. The retromuscular space was developed by raising a flap of P-PRS, 6 cm beyond the hernia defect, with careful preservation of epigastric vessels, neurovascular bundles at the LS and linea alba (LA). The intra-abdominal pressure was reduced to 8 mm Hg. posterior sheath approximation done with starfix PDS NO 1. A medium-weight microporous PPM with wide overlap was parked into the retromuscular space by modified sugar baker method . The P-PRS incision were approximated by using No. 0 PDS

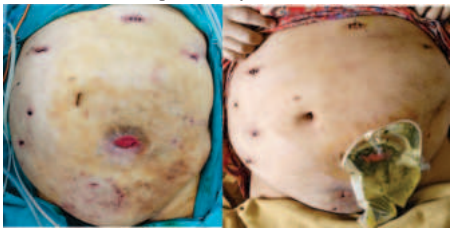
Mesh fixation done. No takers were used for fixation of mesh. Pneumoperitoneum was released and ports sites were closed. No drains were placed over the mesh.





Retrorectus Meshplasty

Post Operative Management
No postoperative antibiotic
Symptomatic management and dressing of port site
All skin suture removed on post of day 12



Immediate Post Operative Image
Post Op Day 3 Operative Image

DISCUSSION

Parastomal hernia is a common and challenging complication following stoma creation that has a higher incidence rate than other types of incisional hernia. The main risk factors for the development of parastomal hernias are obesity, age, malignancy, inflammatory bowel disease, wound infection, steroid use, diabetes, loop ostomy, and emergency surgery (10)

There is no uniform standard for meshes used in the Sugarbaker procedure. Meshes reported in the literature include polypropylene, expanded polytetrafluoroethylene, polyvinylidene difluoride, polyester, and biological meshes (11). In our case, we used a polypropylene mesh without anti-adhesion coating. Mesh placement outside the peritoneum effectively avoids intestinal adhesion incidents and allows the use of ordinary mesh, thus reducing costs. The patient was discharged on post operative day 3, without any postoperative complications.

CONCLUSIONS

Modified Sugarbaker repair of parastomal hernia with a TARM approach avoids mesh–bowel contact, safe and feasible procedure, even in patients with a surgical history of open resection. Although long-term outcomes are unknown, this novel approach offers a new option for the surgical treatment of parastomal hernia in the future. Further Postoperative evaluation is necessary to effectively weigh the results of our innovations, and continue to evolve solutions to parastomal hernia.

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Conflict Of Interest
The authors declare that they have no conflict of interests.

Informed Consent
Informed consent for procedure and consent for review of patient data was taken from the patient.

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Abbreviations
P. Peritoneum
PRS. Posterior rectus sheath
LS. Linea semilunaris
TARM- Laparoscopic Trans-Abdominal Retromuscular
BTX- Botulinum toxin
CT - Computed tomography

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