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► To cite this version:

A. Patroni, D. Moszkowicz, J.-L. Bouillot. Technique for treatment of parastomal hernia with sublay mesh repair and transprosthetic stomal relocation. *Journal of Visceral Surgery*, 2020, 157, pp.505 - 509. <10.1016/j.jviscsurg.2020.08.010>. <hal-03494048>

HAL Id: hal-03494048

<https://hal.science/hal-03494048v1>

Submitted on 15 Dec 2022

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Surgical technique

Technique for treatment of parastomal hernia with sublay mesh repair and transprosthetic stomal relocation

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Conflict of interests : none

Keywords : parastomal hernia, stoma, sublay, transposition

INTRODUCTION

Prosthetic repair is the standard treatment for ventral hernia [1]. The retro-muscular mesh technique obtains the best results by restoring the anatomy of the abdominal wall including the linea alba bordered by the paramedian rectus abdominis muscles on either side connected to the large abdominal muscles under tension [2, 3]. The performance of direct fascial suture closure results in a high rate of hernia recurrence. Parastomal hernia occurs mainly with permanent stomas (end colostomy, ileostomy, ileal conduit urinary diversion). Its prevalence varies between 4 to 40% for colostomies and 2 to 23% for ileostomies [4]. Despite the advent of laparoscopy and the use of new bio-prosthetic materials, the risk of recurrence after treatment of parastomal hernia remains high [5].

This work presents a surgical technique for the management of parastomal hernia by placement of a synthetic retro-muscular mesh prosthesis, in association with relocation of the stoma that will pass through the prosthesis.

Figure 1

After induction of general anesthesia and placement of a urinary catheter, the patient is positioned supine with the arms at 90 °. The site of the future stoma, usually in the hypochondrium, has been identified and marked pre-operatively by the enterostomal therapist (asterisk).

Figure 2

Starting with the skin incision, the poorly vascularized scar cutaneous scar is excised and the stoma is disinserted, closed temporarily, and marked by long sutures to make it easy to find the end that has been reintegrated into the abdomen. The operative site is then re-prepped and draped with a change of instruments.

Figure 3

The herniated bowel is dissected free and adhesions are lysed allowing the intestine to be returned to the abdominal cavity. The entire peritoneal sac between the subcutaneous tissue and the anterior fascia is resected, dissecting as close as possible to the sac, in order to avoid bleeding and skin devascularization. Careful dissection and hemostasis prevents the formation of post-operative hematoma or seroma that is likely to occur if the hernia sac is not resected. The aponeurotic edges are freshened and the subcutaneous dissection is carried out in contact with the muscles to avoid devascularizing the skin in order to facilitate subsequent closure of the fascial hernia orifice.

Figure 4

The posterior fascia is opened circumferentially to dissect the retromuscular space. Excision of the posterior fascia must be as sparing as possible so as not to risk making its closure more difficult. The dissection is carried out, preserving the vascular pedicles and intercostal nerves from the midline medially around the hernia neck and laterally for a distance of at least 5cm. The dissection should also be sufficient so that the prosthesis extends at least 5 cm superiorly above the chosen site for the new stoma.

The posterior aponeurotic fascia is reapproximated with slow-absorbing monofilament sutures, isolating the prosthetic mesh from the intra-abdominal viscera.

Figure 5

A non-absorbable synthetic mesh prosthesis (light macro-porous polyester) is placed in the retro-muscular space and fixed to the posterior fascia by interrupted stitches of slow-absorbing fine braided suture. It should be large enough to protrude at least 5 cm beyond the margins of the hernia defect and beyond the future ostomy site. Suction drains are placed in contact with the retro-muscular mesh.

Figure 6

A new stoma is created, making a circular skin incision at the previously identified site, splitting the rectus muscle fibers vertically, and making an appropriate-sized fenestration in the underlying mesh. The intestinal end, identified by the long marker suture, is retrieved under visual control and then brought out through the prosthesis to the skin level.

Figure 7

Finally, the anterior fascia of the hernia repair site is closed with two running sutures of slow-absorbing, single-stranded suture material. Suction drains are placed in the subcutaneous space, and the subcutaneous fat is tacked down to reduce the size of the dead space.

Figure 8

The skin is closed and the stoma is matured as the last step of the procedure. A compressive elastic binder with a cut-out for the stoma is tightened in place before muscle relaxation is reversed. The patient should wear the elastic binder for two months. The drains can be removed when drainage is less than 10 ml/day.

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