SKIN BRIDGE LOOP STOMY- OPERATIVE TECHNIQUE

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Small bowel or colon loop stomy is performed in case of surgery, due to mechanical ileus or when there is risk of leakage below the anastomosis. Loop stomy is usually a temporary stoma, although in selected cases it might become definitive. It is assumed that each stoma should be supplied in stomy equipment during the surgical procedure.

In most centers, the most common method to maintain the intestinal loop at the level of the abdominal integument is to place a thick drain or a special plastic transverse cross under the intestinal loop (1, 2, 3, 6). The presence of the drain or transverse cross completely prevents the tight fitting of the stoma equipment. The postoperative leakage of intestinal-fecal contents poses a serious risk of postoperative wound infections (3, 4, 5).

The presented technique of fixing the intestinal loop on the cutaneous flap enables to more precisely and tightly fit the stoma equipment, minimizing the risk of postoperative wound infections.

Stomy technique

When ileostomy is performed one should pay particular attention as to the accuracy of the operative technique. First of all, the sight of the stomy must be marked before surgery. The above-mentioned is determined during standing, sitting, and in the supine position. One should avoid the stomy penetrating between the cutaneous flap, being available and visible to the patient. It is best to mark more than one place for the stomy before surgery, so that, if necessary, to have an alternative for the stomy in a different location than originally planned.

When exteriorizing the stoma one should be capable of grasping the fascial peritoneum by means of Mikulicz’s instrument. A similar instrument is placed on the skin, in order to maintain the integuments in a single layer. Under the integuments one should place a folded drape, in order to minimize the risk of intestinal damage during stomy excision. The surgical drape should be held between the last three fingers and thumb, while the index finger holds both, Mikulicz instruments, so that both surfaces align into one. The next step consists in the excision of the skin flap. The above-mentioned should be 2 x 3-4 cm in size, in the shape of a rectangle. Only three walls are excised, with the superior wall left intact (fig. 1). Afterwards, the flap is undercut with only a small fragment of the subcutaneous tissue removed (1 cm). The incision is directed towards the unremoved wall of the skin flap (fig. 2). The assisting operator extends the subcutaneous tissue by means of Farabeuf’s hooks (in the direction up←→down). The operator cuts the subcutaneous tissue reaching the fascia, which in turn is incised (approximately 5 cm in width). With such an incised fascia, Pean’s forceps are introduced between the fibers of the rectus muscle of the abdomen, while the assisting...
operator introduces the hooks in-between the muscular fibers, visualizing the posterior peritoneal lamina. The operating surgeon cuts the peritoneum, while keeping the other hand over the surgical drape at the sight of the proposed stomy, in order to be sure as not to damage anything when entering the abdominal cavity from the exterior. The next step consists in the introduction of a large abdominal clamp through the stomy opening, which enables to optimally visualize the removed surface, as well as perform small hemostasis procedures, or when extension of the stoma is necessary.

Once the above-mentioned is done we determine the part of the intestine where stomy will be performed. Such a fistula should not be performed under pressure, thus the careful selection of the intestinal segment.

When holding the bowel in one hand at the desired location, using the separator, we pass under the bowel, avoiding any damage to the wall. Afterwards, we perform expanding, perpendicular movements inside the intestinal mesentery, as not to damage any vessels. The opening obtained by means of the separator should be 1-1.5 cm wide. Nelaton’s drain is introduced through the mesenteric opening, suspended on pean’s forceps. Through the stoma opening one should introduce a large clamp grabbing Nelaton’s drain. The assisting operator pulls the intestine through the integuments. If the stomy opening is sufficiently wide and the colon mobile, there should not be much of a problem with its transposition.

We then grab Nelaton’s proximal end using Kocher’s drain.

The drain is dragged under the bowel, through the previously performed mesenteric opening. When Kocher’s drain is on the other side of the mesentery, the assisting operator passes the end of the skin flap to the tip of the instrument. The surgeon grabs the flap by means of Kocher’s drain rotating the instrument by 90 degrees, and pulls the skin flap under the bowel to the other side. Thus, a naturally created cutaneous bridge under the intestinal loop (fig. 3). Such a stoma does not need drainage for a few/several days.

The cutaneous flap is anastomosed to the skin by means of 2-0 monofilament cutaneous sutures, at a 30 degree angle, in the direction of the efferent loop. Moving the skin flap in the above-mentioned direction the afferent loop is relieved (fig. 4).

Fig. 1. The excised rectangular skin flap in the previously „X” marked spot

Fig. 2. Undercut skin flap with a 0.5 cm subcutaneous tissue layer

Fig. 3. Skin flap placed under the bowel (similarly as in case of the synthetic transverse cross)

Fig. 4. Two interrupted sutures securing the skin flap
After integument closure the final stage of the operation consists in stoma creation.

Using two anatomical pincers the bowel is incised transversely at the level of the third part of the afferent loop. The afferent bowel is sutured to the skin using a 3-0 suture, remembering not to forget to create the afferent loop „spout” (fig. 5). The above-mentioned should be 2 cm in height after intestinal eversion, and not performed on the efferent loop. One should also not suture the bowel to the peritoneum and fascia, but to the skin. Suturing the bowel to the fascia has absolutely no importance considering the management of stoma patients, and only hinders subsequent gastrointestinal tract continuity restoration.

The advantages of the method

Skin flap stoma development has many advantages. First of all, synthetic material is not required for intestinal fixation. Instead, we use the patients’ skin creating a transverse cross, which in the future does not need to be removed. Thus, we prevent the collapse of the stoma and significantly reduce the risk of its prolapse.

The skin flap enables to perfectly fit the stoma during surgery, as well as during the postoperative period. This reduces the risk of intestinal content leakage and ensuing operative wound infections. Additionally, the skin-flap technique is easy to perform.

REFERENCES


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