

Surgery Illustrated – Surgical Atlas

The York Mason operation

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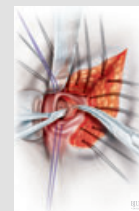
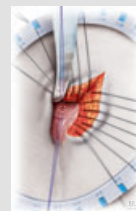
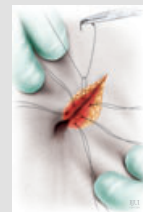
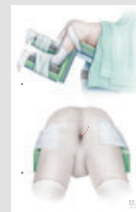
INTRODUCTION

The York Mason parasacrococcygeal transsphincteric approach remains one of the most suitable techniques for the treatment of recto-urinary fistulae, as it provides a maximum chance of success with limited morbidity and a high rate of anal continence [1]. The authors report their current technique for the posterior trans-anosphincteric approach.

HISTORY

Around 1960 the English surgeon Aubrey York Mason of St. Helier University Hospital in London started using a transsphincteric exposure for rectal operations. He initially performed this approach on 18 patients and then showed his technique to Mr Henry Thompson and Mr H.E. Lockhart-Mummery whom successfully attempted the surgical procedure. An initial report of 24 treated patients, presented by Dr York Mason, included the experience of these three surgeons [2].

In 1969, Kilpatrick and York Mason [3] presented a parasacrococcygeal transsphincteric approach for recto-urinary fistula repair. This technique featured the division of all layers of the anorectal sphincter to clearly expose the fistulous orifice at the anterior rectal wall. The principles of the York Mason operation were officially published in 1970 [4]. This publication presented the experience gained by Dr York Mason with 100 patients over 12 years and stated the essence of the operation: 'Complete division of the anal sphincters provides excellent access to the interior of the rectum ... if the divided sphincters are sutured accurately with



restoration of the anatomical layers, they heal and leave the patient with normal defecation and complete anal continence'. In an earlier description of his experience, Dr York Mason acknowledged that 'Since presenting this paper I have learned with great interest that Dr A.E. Bevan advocated removal of the coccyx and division of the anal sphincters and rectal wall in the midline posteriorly, to give access for local excision of carcinoma of the rectum. The details of his operation were published in *Surgical Clinics of North America* I, 1917, 1233'.

In 1974, Dahl *et al.* [5] proposed a modified York Mason technique that featured a midline skin incision from the sacrococcygeal articulation to the anal verge, with eventual coccyx excision if needed. Several small series on the York Mason procedure have been published. The largest series published includes 22 successfully repaired fistulae. The operative duration was <2 h with a blood loss of 50–400 mL and there was no fecal incontinence or anal stenosis [6]. Our institution has recently reported a series of 15 cases with a 22-month follow-up and 75%, 92% and 100% rectourinary fistula resolution after one, two and three York Mason procedures, respectively, with total fecal continence [1].

PRINCIPLES AND JUSTIFICATION

ANATOMY

The somatic sphincter complex is supplied mainly by the fourth sacral nerve, and through the parasacrococcygeal incision the levator ani is divided medial to the nerve, and thus remains safe from injury. Accurate suturing of the anatomical layers guarantees adequate functional outcomes.

PATIENT SELECTION

As the operation is performed prone, it is also well tolerated by elderly patients. Blood loss is minimal, recovery rapid and no special postoperative care is necessary. The wound does not hinder early ambulation and primary healing of the sphincters and perianal skin is mostly uncomplicated.

TECHNIQUE

The procedure enables excellent access to the rectal anterior wall through unscarred surgical planes with minimal blood loss, allowing the surgeon an ideal view of the fistulous orifice. The technique can be performed several times with no significant increase in operative duration, estimated blood loss or fecal incontinence.

INDICATIONS

The York Mason transsphincteric exposure was conceived to treat fistulae, benign strictures, and benign and malignant tumours of the lower two-thirds of the rectum [4]. Rectourinary fistula is a rare complication that may occur after radiation or surgical treatment for prostate cancer, inflammatory bowel disease and pelvic trauma. Its incidence after radical prostatectomy is <2% [7].

A classification system for rectourinary fistulae was proposed by Rivera *et al.* [8] to facilitate treatment:

- Stage I: non-irradiated fistulae located at least 4 cm from the anal margin.
- Stage II: non-irradiated fistulae located >4 cm from the anal margin.
- Stage III: irradiated fistulae located <2 cm from the anal margin.

- Stage IV: irradiated fistulae located >2 cm from the anal margin.
- Stage V: large fistulae, generally secondary to decubitus ulcers of the ischium.

According to this classification, transanal repair is feasible in stage I fistulae. The York Mason technique is preferable for stage II and III fistulae [9].

In early experience, management of recto-urinary fistulae implied a preliminary defunctioning colostomy. Today, the performance of routine colostomy and cystostomy is not mandatory [10].

PREOPERATIVE ASSESSMENT

Patients should have radiographic and endoscopic evaluation, including voiding cysto-urethrography and cystoscopy. They should also be informed of the potential risk of re-treatment for this procedure. Mechanical preparation of the colon and antibiotic prophylaxis are indicated.

ANAESTHESIA AND SURGERY

The operation is performed under general endotracheal anaesthesia. A Foley catheter is placed before surgery in all patients. Several authors suggest performing a cystoscopy in all cases before surgery, to identify the exact location of the fistula and its relationship with the ureteric orifices. Ureteric catheters can be placed at this stage, if considered necessary by the surgeon. In our experience, cystoscopy is not always necessary. Our technique does not include suturing the urinary tract during the York Mason procedure, thus avoiding potential ureteric injury.

Figure 1

- a) The patient is placed prone, with the operating table in a 'jack-knife' setting and the buttocks strapped apart with adhesive tape. Appropriate padding of the patient is an important element for this operation. The surgeon is sited between the legs of the patient facing the buttocks and the assistants located at each side.
- b) The dotted line marks the following paracoccygeal incision.

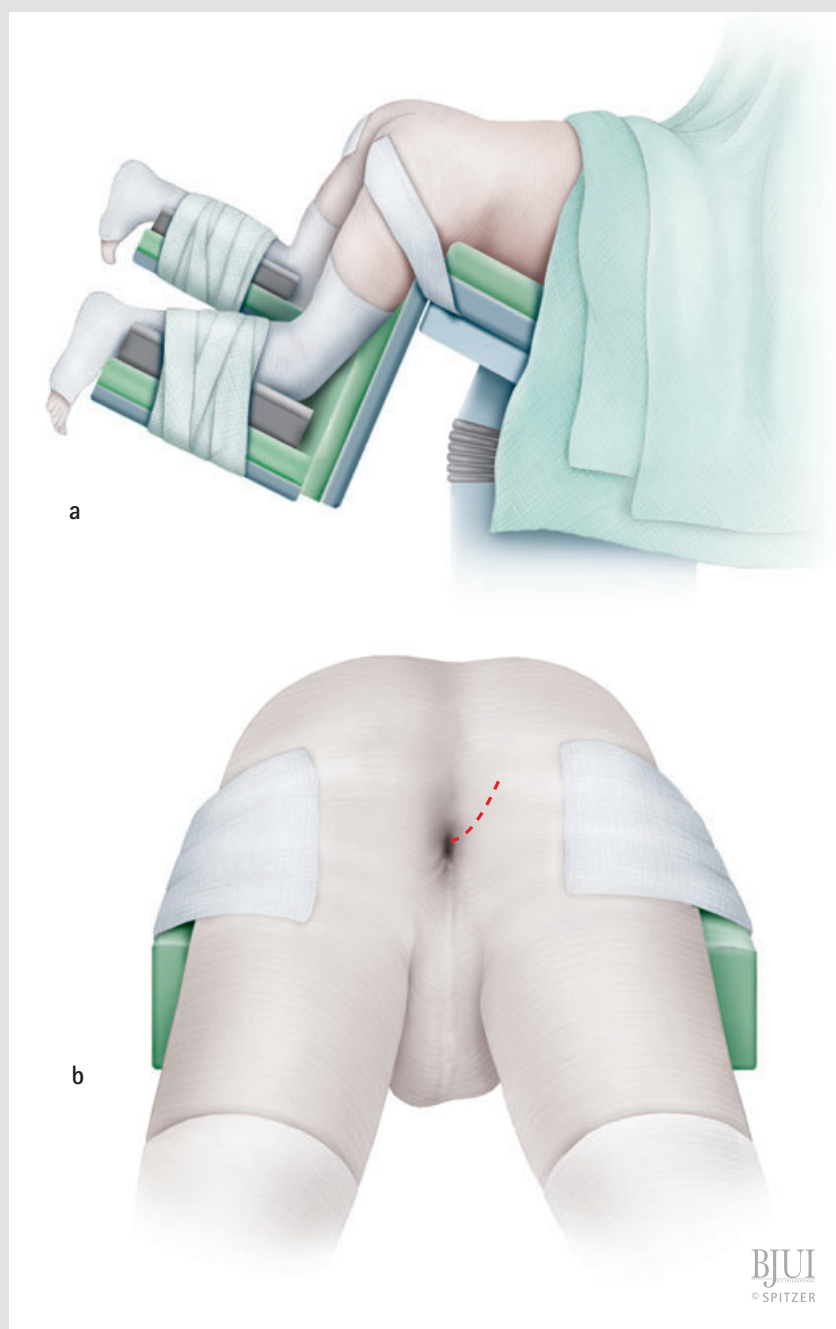
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Figure 2

The paracoccygeal incision is located at 2 o'clock and extended to the anal margin. The incision could be located at either the right or left side, depending upon the location of the fistulous tract. The incision passes through the s.c. tissue until reaching the gluteus maximus at its proximal end, the levator ani and the external sphincter at their distal end.

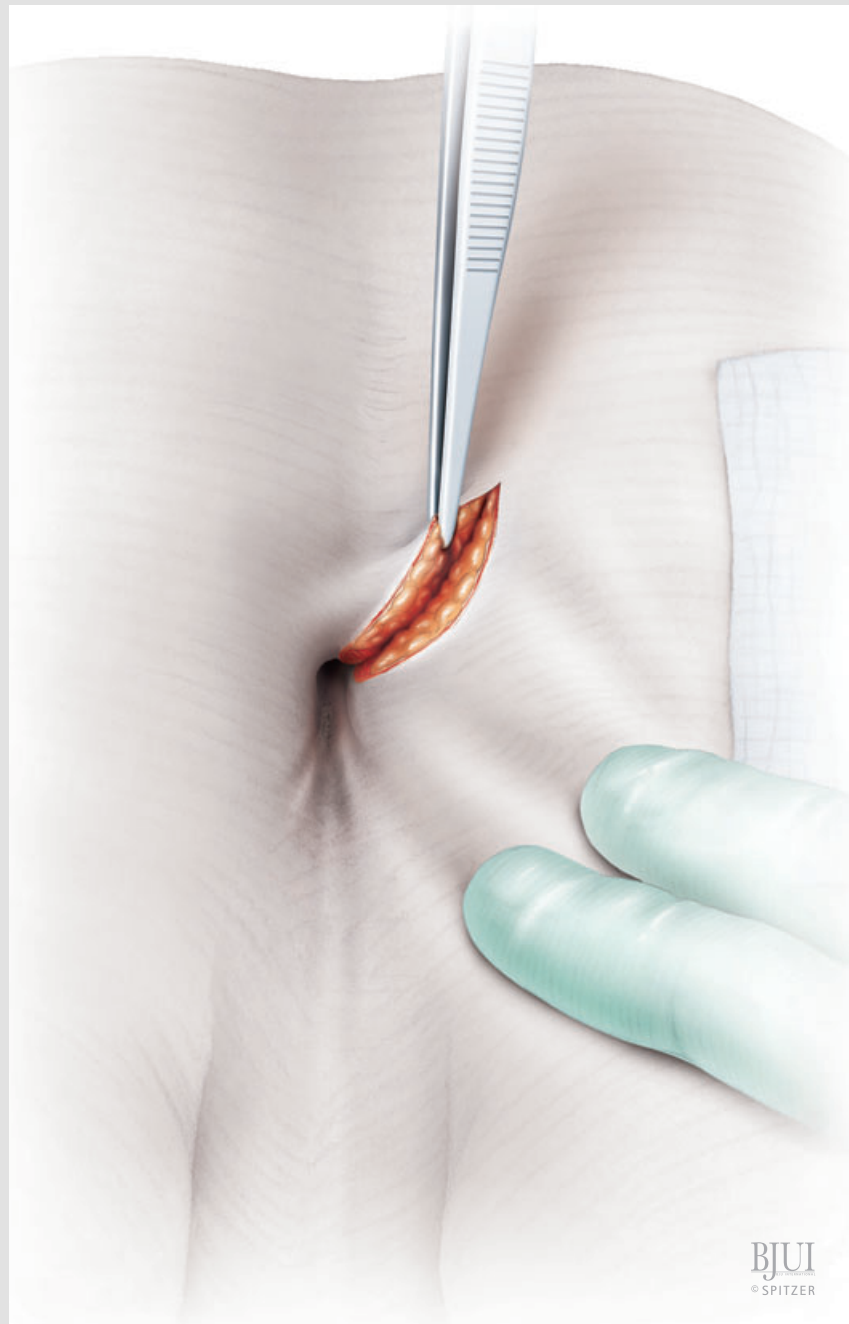


Figure 3

Matched paired 3-0 polyglactin sutures are placed in the anal sphincter before it is carefully incised. The placement of the matched sutures guarantees adequate reconstruction of the anus. We use a 'suture line' separator to keep the sutures accurately identified, and to facilitate clear approximation of the sphincter later on.

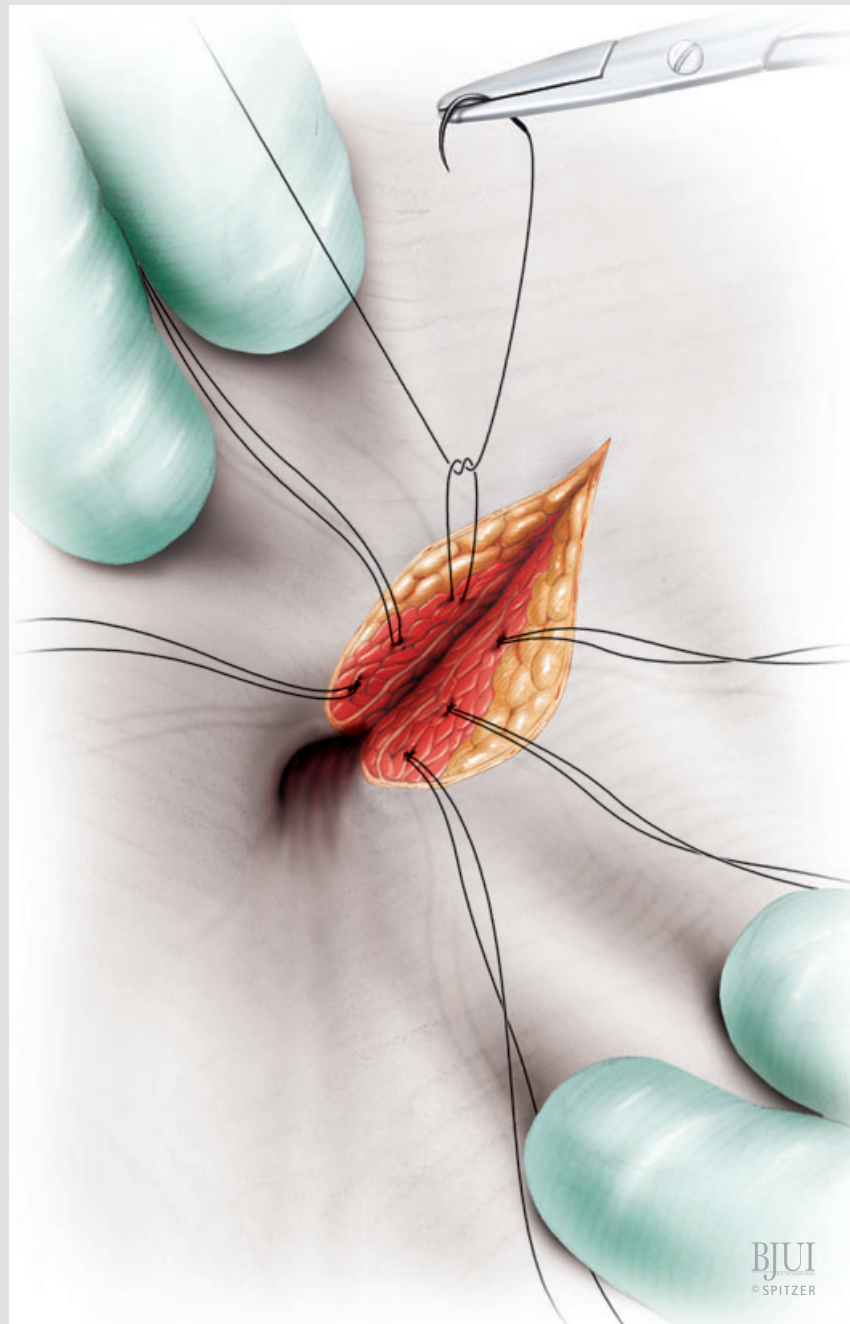


Figure 4

The posterior wall of the inferior rectum is exposed and is sectioned longitudinally to expose the anterior rectal wall. At this point, the orifice of the fistulous tract is visualized. 'Stay' sutures are placed above and below the orifice for manipulation.

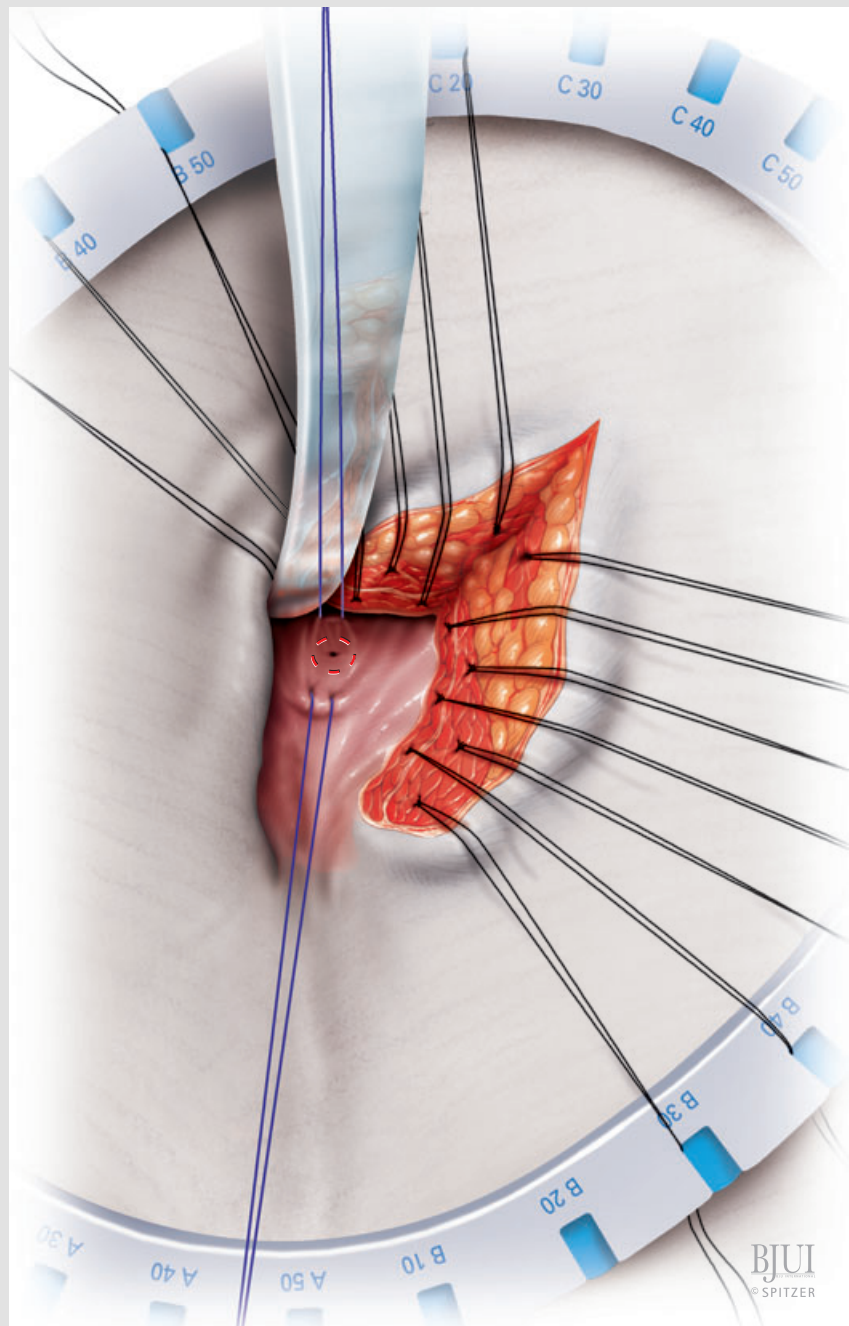


Figure 5

We then proceed to resect the fistula tract and the surrounding inflammatory tissue with blunt and sharp dissection. A plane of dissection is created between the rectal- and bladder walls to ensure tension-free closure.

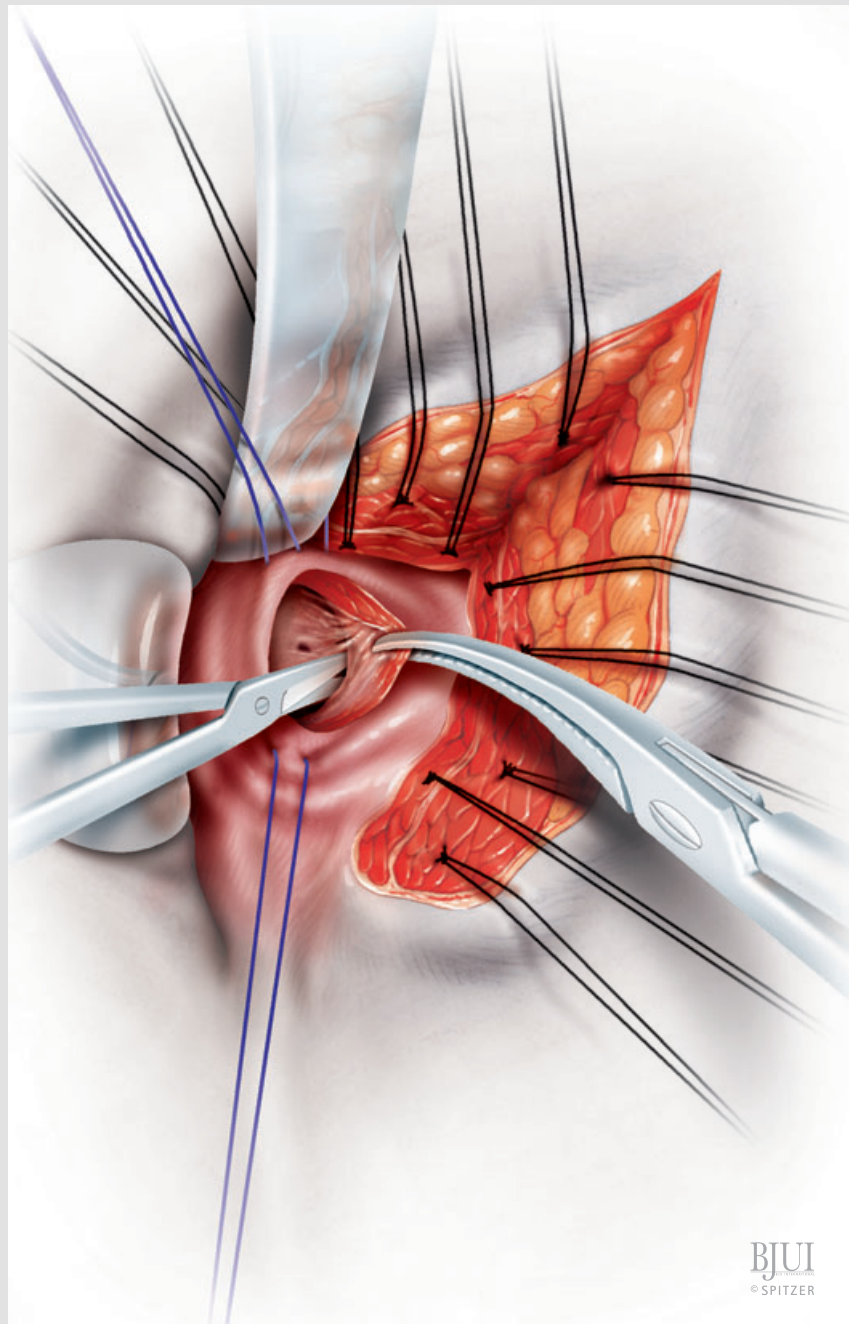
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Figure 6

Anterior rectal wall is then closed in two layers of interrupted 2-0 polyglactin suture.

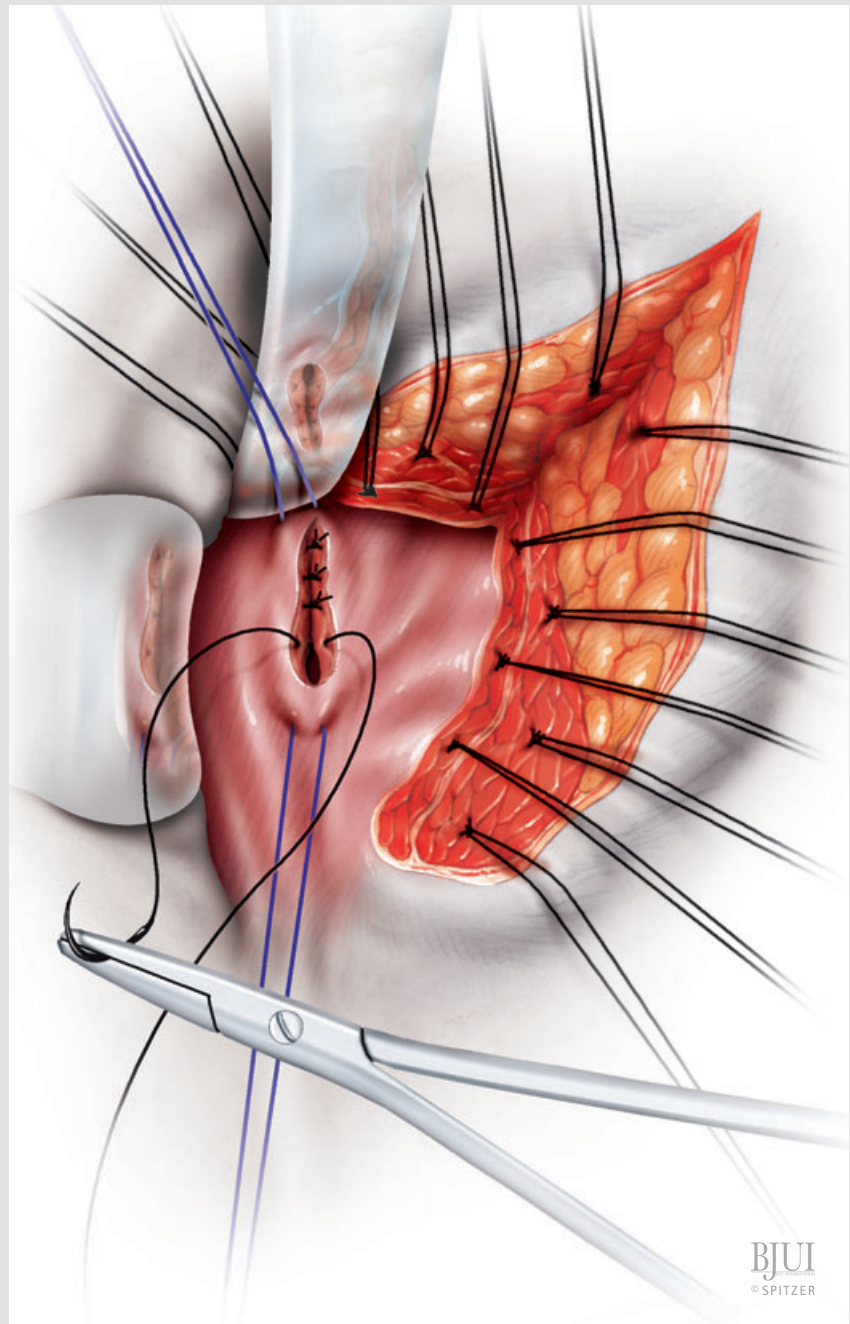
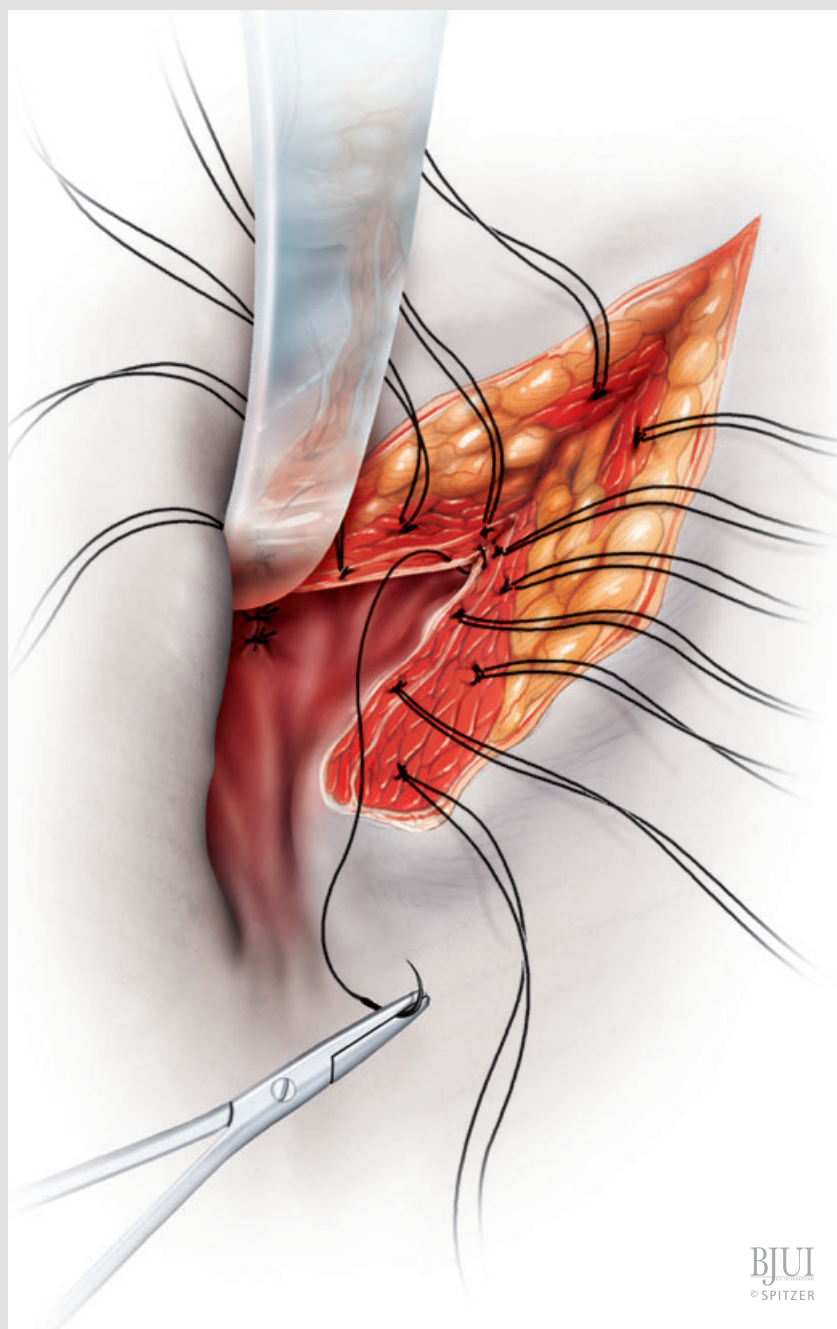


Figure 7

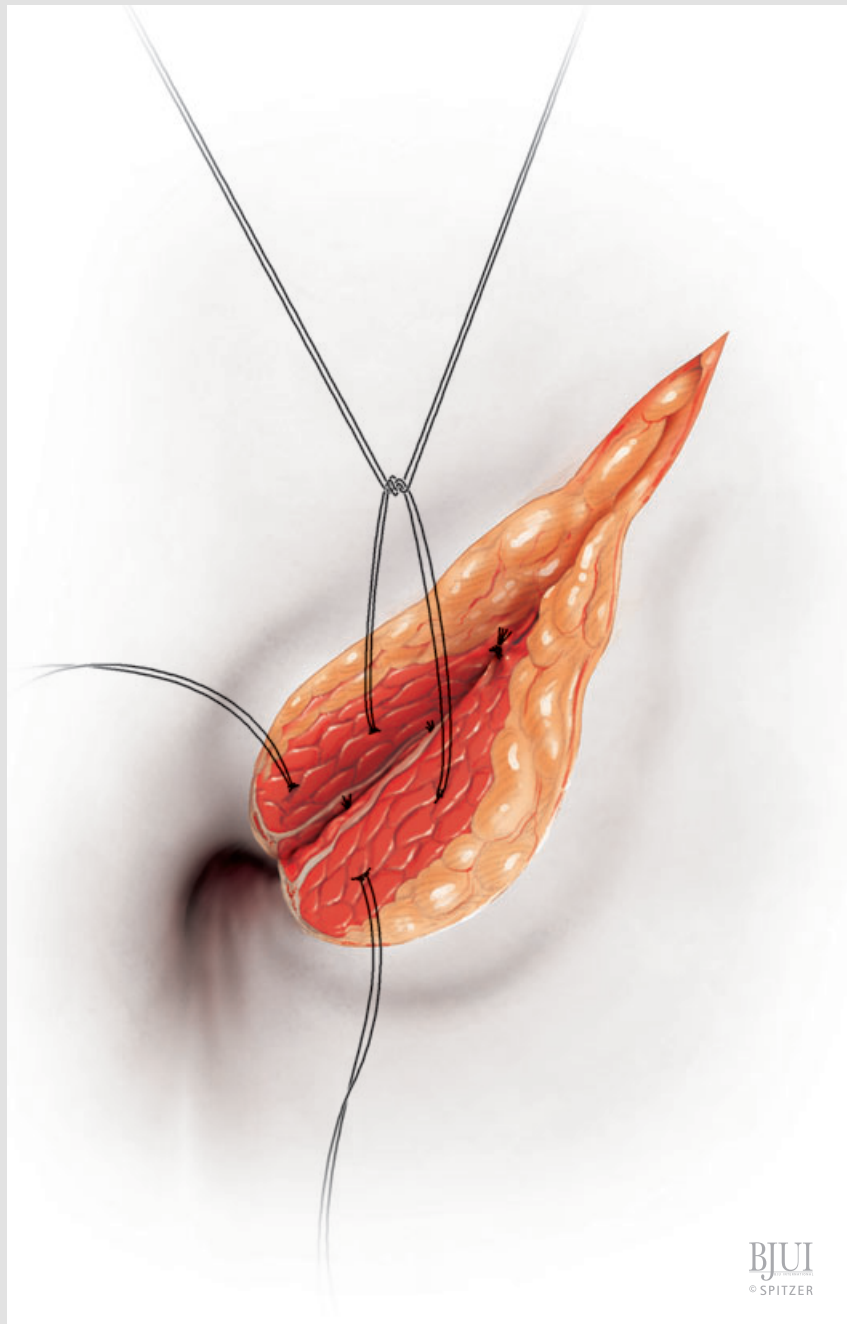
The posterior rectal wall is closed with a continuous 2-0 polyglactin suture.



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Figure 8

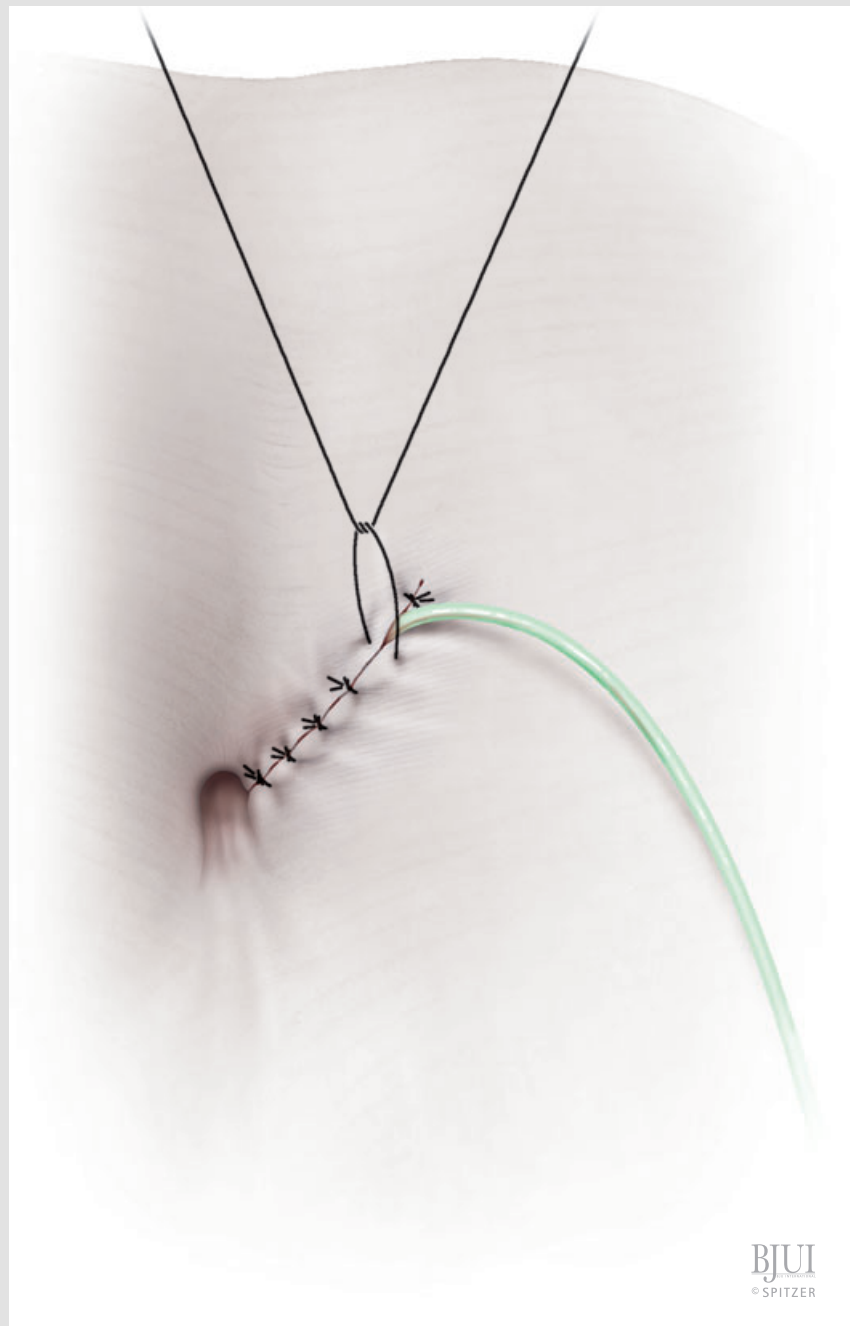
Finally, the paired sutures placed at the beginning of the procedure are tied, thus allowing precise re-alignment of the muscle structures sectioned during access (internal sphincter, external sphincter, and levator ani).



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Figure 9

In all cases, a subfascial drain is left in the first s.c. layer and the skin is sutured with polyglecaprone monofilament suture.



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POSTOPERATIVE CARE

No specific postoperative care is necessary. The patient should remain without oral intake for the first 24 h after the procedure. The subfascial drain is removed on postoperative day 2. The urethral catheter remains in place for 6 weeks and is removed after voiding a normal cysto-urethrogram. In cases of fecal diversion, colostomy reversal is performed once closure of the recto-urinary fistula is verified. In the unlikely event that infection should occur, it is usually limited to the upper part of the wound, involving the ischiorectal fat. Defecation is normal from the first postoperative attempt.

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