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AIM: *The deep infiltrating endometriosis, defined as a subperitoneal infiltration of endometrial implants of ≥ 5 mm involving not only the colorectal tract but also rectovaginal septum, vagina and bladder often requires a challenging surgery.*

Endometriosis nodes of the rectovaginal septum, if symptomatic, need a resection of the involved colorectal tract with colorectal or coloanal anastomosis. Unfortunately in these cases is not uncommon the possibility of a postoperative rectovaginal fistula (RVF), caused by the weakness of the septum that must be skeletonized to completely remove the endometriosis nodes. Here we present a case of anastomotic leakage with high RVF after colorectal resection and low colorectal anastomosis for deep endometriosis in which, for a chronic pelvic sepsis and a high risk of failure of a new immediate coloanal anastomosis, a Turnbull-Cutait pull-through with delayed coloanal anastomosis (DCAA) has been performed.

CASE REPORT: *A now 34 years old woman was admitted to our Clinic because of a RVF due to recto-sigmoid resection with colorectal anastomosis for endometriosis. An evaluation in anesthesia confirmed the RVF. In this case we avoided an immediate new colorectal anastomosis for the high risk of a recurrent anastomotic leakage and performed a DCAA.*

RESULTS: *The outcome of the two-steps operation has been satisfactory both for the healing of the RVF and for the functional results bringing the young patient to a completely restored social, sexual and working life.*

CONCLUSIONS: *In our opinion Turnbull-Cutait pull-through with delayed coloanal anastomosis is a good choice in patients with RVF in which a new colorectal or coloanal anastomosis can bring to a recurrent leakage.*

KEY WORDS: Delayed coloanal anastomosis, Deep endometriosis, Rectovaginal fistula

Introduction

Endometriosis is defined as the presence of endometrial tissue outside the uterine cavity ¹ and is a common find-

ing in gynecology with a prevalence in general population ranging from 1% to 8% ². It can be divided in pelvic and extrapelvic localization. Bowel involvement is the most common extrapelvic presentation which takes place in 5.4% of patients, being the recto-sigmoid colon involved in 60-70% of cases ³.

Colorectal endometriosis can be asymptomatic or may occur with a large variety of complaints as abdominal pain, dyspareunia, dysmenorrhea, tenesmus, constipation, hemochezia and bowel obstruction. Usually the absence of significant symptoms makes a surgical treatment

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unnecessary, but a recent study indicates the endometriosis as a possible preneoplastic process requiring, especially in post-menopausal period, a more aggressive treatment⁴. Here we present a case of anastomotic leakage with a high RVF after colorectal resection for deep endometriosis that we have treated with a transanal colonic pull-through and delayed coloanal anastomosis (DCAA), as described by Turnbull-Cutait in 1961^{5,6}.

Case Report

A now 34 years old woman had undergone a recto-sigmoid resection with stapled end to end colorectal anastomosis for deep infiltrating endometriosis (DIE).

The post-operative course was complicated by severe anemia (Hemoglobin level: 7 g/dl) due to a massive pelvic haemorrhage, diagnosed by abdominal ultrasound and abdomino-pelvic computed tomography (CT). The latter confirmed the presence of a blood collection of 10 cm of diameter anteriorly to the uterus, and a further collection in the presacral area, at the level of the anastomosis. The patient had a further laparoscopy showing an intrabdominal hematoma with an anastomotic leakage and a RVF. An abdominal toilette with concomitant intestinal and vaginal suture with interposition of omental flap and loop ileostomy was performed.

Postoperative course was complicated by a further anemia (Hemoglobin level: 6,8 g/dl), which required transfusions, and bilateral pleural and abdominal-pelvic serum effusions. The patient, after a period of intensive care in which she was submitted to targeted antibiotic therapy, thoracentesis, abdominal repeated washings and repeated instrumental check-up, was discharged after 1 month.



Fig. 1: Double contrast bowel enema. Early visualisation of a high RVF.

After six months and an acceptable recovering both physically and mentally, she had a double contrast bowel enema (Fig. 1) and a colonoscopy (Fig. 2) which confirmed the persistence of the RVF, highlighted by a subsequent colonoscopy.

The patient was admitted to our clinic fourteen months after the first surgery, in good general conditions, with a functioning loop ileostomy in the right iliac fossa. An evaluation in anesthesia demonstrated an opening at the posterior fornix of the vagina, approximately 1 cm in diameter, and an antero-lateral right rectal opening at 6-7 cm from the anal verge, at the level of the previous anastomosis.

Two months later we submitted her to a demanding laparoscopic rectal re-resection, sectioning the rectum at the dentate line, distally to the RVF.

The risk of recurrent sepsis and subsequent anastomotic leakage, due to the persistent local fibrosis combined with areas of active inflammation, has prompted us to avoid an immediate new coloanal anastomosis. Therefore a Turnbull-Cutait operation was performed.

A colorectal stump, 30 cm long, was transanally extracted (Fig. 3a). After a resection of the rectum including the RVF, a 15 cm long colonic stump has been left externally to the anus (Fig. 3b, c), suturing it to the perianal skin using 4 interrupted stitches positioned in four cardinal points (Fig. 3d). The externalized colonic segment was then wrapped in vaselinate gauzes to ensure a right maturation and to avoid a possible bleeding (Fig. 4).

During hospitalization the colonic stump was daily evaluated for congestive ischemia and medicated with vaselinate gauzes (Fig. 5). The postoperative course was uneventful with gradual recovery of the feeding and bowel movements. The hospital stay was 7 days.

At home, the patient was followed by an outpatient specialist who checked the maturation of the colonic stump that after about two months has been sectioned at the

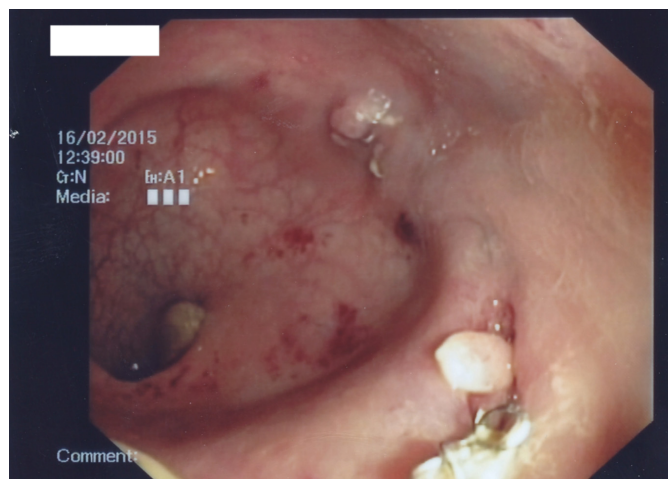


Fig. 2: Colonoscopy. Chronic RVF with retained agraphes at the rectal orifice.

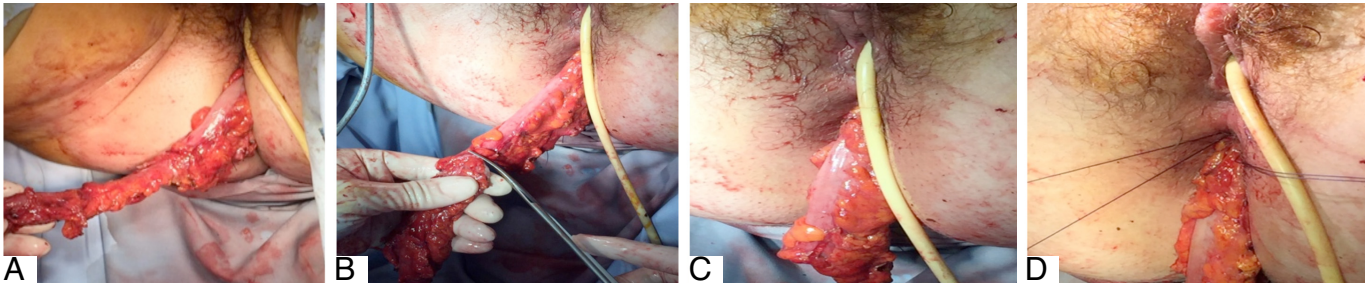


Fig. 3: DCAA: First Step. A) Transanal Colorectal Pull-Through, 30 cm long; B) Shortening of the externalized colorectal stump; C) Exteriorized Sigmoid stump after resection (10 cm); D) Fixation of the stump at the perianal skin.



Fig. 4: Colonic stump of 15 cm wrapped in vaselinate gauzes

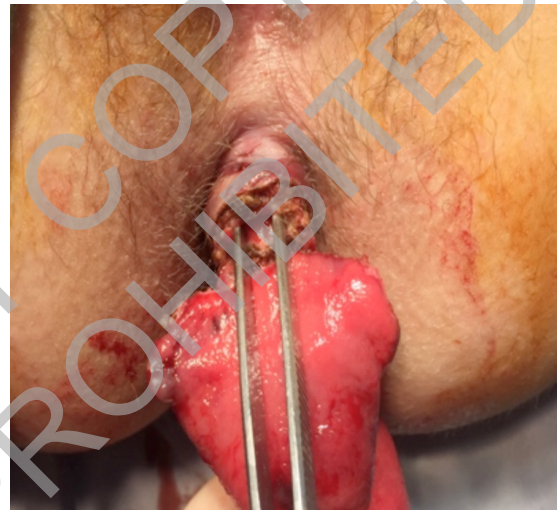


Fig. 6: DCAA: II step. A) Amputation of the colonic stump at the level of the dentate line; B) Coloanal handsewn anastomosis



Fig. 5: Maturation of the sigmoid stump. Lateral (A) and Frontal (B) view. No congestive ischemia, no aedema.



level of the dentate line (Fig. 6a) and fixed by a handsewn coloanal anastomosis (Fig. 6b). The postoperative course was uneventful with hospital discharge in the fourth postoperative day. The proctological evaluation, performed after one month since the operation, showed a normal appearance of anal area (Fig. 7), with a mild substenosis of the coloanal anastomosis, easily digitally dilatatable. Four months after the rectal re-resection a barium enema performed through the ileostomy showed a



Fig. 7: Ano-perineal area. Restoration of the sphincteric tone after 1 month from DCAA



Fig. 8: Post-operative contrast bowel enema through loop ileostomy. Normal appearance of the residual colon without leakages.

normal transit (Fig. 8) and the patient underwent closure of the loop ileostomy, whose postoperative course was uneventful.

Currently, at four months after the ileostomy closure, the patient reports 3-4 evacuations per day of soft stools with no impaired defaecation. The subjective satisfaction is confirmed by the significant improvement of the results of SF-12 questionnaire^{7,8}, CCIS (Cleveland Clinic Incontinence Score)⁹ and FSFI (Female Sexual Function Index) scores^{10,11}.

Discussion

Rectovaginal fistulas are epithelialized connections between rectum and vagina and represent the 5% of all anorectal fistulas. Their etiology is extremely various

going from obstetric trauma (85%) to chronic inflammatory bowel disease (0,2-2,1%)^{12,13}. The rate of RVF after colorectal and pelvic surgery is estimated to be up to 10%, with a possible increase after the growing use of the staplers devices¹⁴.

Redo-surgery with immediate new colorectal or coloanal anastomosis in patients with RVF and chronic pelvic sepsis are at high risk of a recurrent anastomotic leakage and subsequent possible permanent stoma¹⁵.

DCAA was first described by Turnbull and Cutait for the treatment of rectal cancer, Hirschsprung's disease and megacolon in Chagas' disease^{6,16}.

The two classical steps of the operation are : 1) Pelvic dissection followed by a transanal pull-through of the colonic stump, leaving a 8-10 cm of bowel sutured at the level of the future anastomosis; 2) Amputation of the colonic external stump at the level of dentate line with handsewn coloanal anastomosis.

The use of DCAA enables to prevent further anastomotic risks due to chronic pelvic sepsis. However it should be used only in selected patients in which the possibility of failure of a new immediate coloanal/colorectal anastomosis is high. There is no agreement on the timing of the second step of the operation, with a large variability from one week to more than one month. In our specific case the amputation of the colonic stump and the removal of the loop ileostomy were further delayed because of the severe pelvic sepsis found during our first surgery.

Conclusions

The technique described by Turnbull and Cutait is a salvage procedure and represents a good alternative to an immediate new coloanal/colorectal anastomosis in patient with complex anorectal conditions. However it is not free from complications like anterior resection syndrome, anastomotic stricture and ischemia of the colonic stump¹⁷ and must be performed only in referral centers by expert colorectal surgeons. DCAA has been almost put aside, thanks to the new technical possibilities due to the staplers and the well accepted coming of new approaches. Unfortunately the functional results of these new techniques are not satisfactory, particularly when an anastomotic leakage occurs. We think that when the possibility of an anastomotic colorectal/coloanal dehiscence is high (local fibrosis/sepsis, redo surgeries, obese patients ecc), a delayed anastomosis can bring to the same, if not better, functional results achieved by a low colorectal or coloanal anastomosis.

Riassunto

OBBIETTIVO: L'endometriosi profonda infiltrante, definita come la presenza sintomatica subperitoneale di impianti

endometriosis di diametro ≥ 5 mm, interessa non solo il tratto coloretale ma anche il setto rettovaginale, la vagina e la vescica richiedendo spesso interventi di grande impegno chirurgico.

I nodi endometriosis del setto rettovaginale, se sintomatici, richiedono la resezione del tratto coloretale coinvolto con una anastomosi coloretale o coloanale. Sfortunatamente in questi casi non è rara la possibilità di una fistola rettovaginale, causata dalla debolezza del setto che deve essere scheletrizzato per rimuovere radicalmente i nodi endometriosis.

Quello che segue è un caso di deiscenza anastomotica con fistola retto-vaginale alta dopo resezione coloretale con anastomosi coloretale bassa per endometriosis profonda dove, per la presenza di una condizione di sepsi pelvica cronica e un alto rischio di fallimento di un'immediata nuova anastomosi coloanale, abbiamo preferito eseguire un'intervento di pull-through sec. Turnbull-Cutait con anastomosi coloanale eseguita in un secondo momento.

CASO CLINICO: Una donna di 34 anni è stata ricoverata presso la nostra Clinica per una fistola retto-vaginale dovuta ad una resezione retto-sigmoidea con anastomosi colo-rettale per endometriosis. Una valutazione in anestesia ha confermato la presenza della fistola. In questo caso abbiamo evitato di eseguire una immediata anastomosi coloanale per l'alto rischio di deiscenza ed abbiamo eseguito un intervento sec. Turnbull-Cutait.

RISULTATI: I risultati dell'intervento eseguito in due step sono stati soddisfacenti sia per la guarigione della fistola retto-vaginale che per i risultati funzionali che hanno portato una paziente giovane a riprendere una normale vita sociale, sessuale e lavorativa.

CONCLUSIONE: Secondo la nostra esperienza l'intervento sec. Turnbull-Cutait è una buona scelta in pazienti con fistola retto-vaginale recidiva già sottoposte a resezione rettocolica ed in cui il rischio di nuova deiscenza anastomotica è molto alto.

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