



Recurrent Obstetric Rectovaginal Fistula Treated By Acellular Interposition Graft. A Case Report

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ABSTRACT

Obstetrical trauma is the most common cause of rectovaginal fistulas. Although having a low incidence (0.5-1% of vaginal births), rectovaginal fistulas produce devastating effects on women's quality of life. We present the Romanian experience in treating recurrent rectovaginal fistulas using the technique of interposing acellular biological second generation Surgisis tissue graft. We report the case of a 33 years old patient who delivered vaginally a 3200 grams weighing newborn 10 years before, after a precipitate labor for which an episiotomy was performed, followed by the appearance of a rectovaginal fistula with numerous attempts of reconstruction. Following biological graft interposition the rectovaginal fistula was cured. In this case with multiple treatment attempts that led to major alterations in the vulvo-ano-perineal region we used the technique of episoproctotomy with sphincter reconstruction and interposition of acellular tissue graft. Favorable postoperative course proved the method's efficacy in this patient. Recurrent rectovaginal fistulas associated with sphincter muscle lesions can be approached by episoproctotomy technique, which allows the reconstruction of the ano-perineal region. Surgisis Bio Design biological graft interposition is an alternative that can solve recurrent rectovaginal fistulas.

KEYWORDS

rectovaginal fistula, Surgisis

Introduction

The treatment of post-obstetrical rectovaginal fistulas represents a challenge in gynecologic surgery. The success rate for the traditional techniques is reduced.

Rectovaginal fistulas are abnormal communications through an epithelialized path between the rectum and the vagina. Passage of gas and faeces into the vagina causes profound physical and psychological alteration that transforms a young woman into a disabled person excluded from social life and family.

Rectovaginal fistulas are caused by obstetrical trauma in 88% [1] of the cases. The incidence of post-obstetric rectovaginal fistulas is low - 0.5-0.1% of all natural births [2][3]. Approximately 5% of natural deliveries or 20% of births who underwent episiotomy are complicated with anal sphincter or rectal lesions [3]. In most cases rectovaginal fistulas are associated with IV-th degree perineal lacerations or anal incontinence by sphincter trauma [4][5]. Median episiotomy complicated with IV-th degree perineal laceration predisposes to the occurrence of rectovaginal fistulas [6].

The treatment of recurrent rectovaginal fistulas raises particular problems concerning the approach, technique, postoperative care and the follow up.

We present a case that was resolved after 12 years of multiple surgical attempts.

Case presentation

The 38 years old patient delivered naturally in 2004 her second child, weighing 3200 grams, after a precipitate labor, for which she underwent an episiotomy. Approximately one

month after the delivery she observed the appearance of gas emissions and faeces leakage through the vagina. After two months the patient was operated vaginally. The excision of the fistulous tract and suture of the vaginal and rectal defects were practiced. After another two months the fistula reopened causing gas loss through the vagina and little unsteady flow of faeces depending on the diet.

In 2006 the patient decided to have another surgery. The surgical cure of the fistula by vaginal route vaginal was practiced. After one month time interval the fistula reopened.

In September 2013 the patient decided to get reoperated vaginally. One month postoperative the fistula reopened and a protection sigmoid iliac anus was practiced.

After 6 months in April 2014 the reintegration in the normal recto-sigmoid circuit was performed. At 3 days postoperative the reopening of the fistula was found.

The patient presented to our clinic after 6 months in November 2014 and was reoperated.

Technique

Preoperatively, 24 hours before the intervention Fortrans was administered, and in the morning of the operation an evacuatory enema was practiced. The surgical intervention was performed under spinal anesthesia. We administered 30 minutes before surgery antibiotic treatment using cefuroxime.

Preoperative examination revealed a high perineal scar, disruption of the perineal body and external anal sphincter rupture.

The vaginal extremity of the fistula which was not apparent

has been identified by rectal instillation of 50ml methylene blue solution and then 50 ml of air. By this maneuver we identified a fistulous opening, hidden in the mucous folds at approximately 2cm of the hymeneal ring with a diameter of 3-4mm.

The rectal extremity of the fistula was identified at 4cm from the anus by inserting a metal grooved probe through the vaginal opening orifice.

Due to the history of repeated interventions we decided to approach the fistula using the technique of episyproctotomy. We excised the fistulous tract, then we dissected and mobilized approximately 2cm lateral the vaginal and rectal wall on the entire length of the initial incision. During dissection we found and excised another fistula which developed towards the perineal skin without having a vaginal corresponding (fistula in ano). In order to identify the external anal sphincter muscle's ends we extended annularly, laterally on each side, the caudal extremity of the initial incision and we electrically stimulated the visible muscular structures to distinguish the sphincter muscle's contraction.

We closed the rectal surgical wound in two plans with resorbable monofilament (PDS 3/0) until the mucocutaneous junction, then we interposed a rectangular fragment of 4/3cm of Surgisis Bio Design which we fixed with resorbable 3/0 sutures at the corners.

We rebuilt the external anal sphincter using two "U" shaped sutures of PDS 3/0 and the perineal body using resorbable sutures of Vicryl no.1. The vaginal surgical wound was closed with interrupted continuous Vicryl 2/0 suture. The scarred tegument was excised and the incision was closed using separate sutures.

We continued the postoperative antibiotic treatment using cefuroxime; we instituted fluid diet for two days and then hyporesidual diet for 7 days. The patient was hospitalized for 2 days and monitored by clinical exam at 2,4,8 and 12 weeks without signs of recurrence.

Figure 1 about here. Intraoperative aspect



Discussions

Relevant Anatomy

Anatomy of the ano-perineal region includes six structures that must be identified in the restorative operations for rectovaginal fistulas or III-IV-th degree perineal lacerations [5]. 1. The perineal body is the first element and anatomical connecting structure of the vaginal and anal sphincter apparatus. Here we can identify: 2.the internal anal sphincter, 3.the external

anal sphincter, 4.the bulbospongios muscle 5.the rectal wall, 6.the vaginal wall.

Obstetric fistulas are low fistulas and may have single or multiple paths, the anal sphincter muscle may be interested or not, or may be associated with varying degrees of perineal lacerations. [7]

Anatomical changes can be evaluated clinically, the transanal ultrasound being useful in some cases. External anal sphincter rupture, for example, may be suggested by the disappearance of perianal skin folds between 3 o'clock and 9 o'clock [5]. The disruption of the perineal body or the location of the fistula's anal extremity can be assessed by vaginal-anal bidigital examination.

The treatment of rectovaginal fistulas depends on the cause, location and size of the fistula. Small obstetric fistulas are the only ones that can close spontaneously in 3-6 months [8]. In the treatment of rectovaginal fistulas the first operation is the one that must solve fistula [9]. In case of relapse all other interventions will have less chance of success. Success rate after the first intervention is 85%, while after the second one it drops to 55% [10].

The optimal time for surgical treatment is dictated by the resolution of edema, induration and infection at the level of fistula [11]. A time period of 3-6 months is accepted as necessary, but if local phenomena stabilize the period can be reduced [12]. In case of recurrent fistulas the operatory moment will be delayed longer compared to those treated per primam.

Choosing the best technical alternatives is difficult for recurrent obstetric fistulas [13]. The principles that must be followed in order to obtain a maximum rate of success are:

- Individual assessment of the surgical procedure for each unique case,
- Correct evaluation of the fistula (location, trajectory, sweeping),
- Evaluation of the associated lesions involving the 6 anatomical elements from the ano-perineal region that may be secondarily involved,
- The transperineal approach (conservatory for the sphincter) or episyproctotomy,
- Tissue interposition between the vagina and rectum for the fistulas with increased risk.

Sphincter lesions associated with anal incontinence require choosing a transperineal reconstruction procedure. In our case the 4 failed treatment attempts led to the appearance of a rigid perineal scar and anal incontinence. Median episyproctotomy was the solution that allowed us an anatomical reconstruction of the area.

We used bioprosthetic Surgisis material as interposition tissue element. It becomes second generation biograft by acellular processing keeping only the matrix's characteristics that include collagen, glycosaminoglycans and glycoproteins which indicate the host cells to repopulate the tissue where it is implanted. Surgisis allows the integration of the graft into a strong, vascularized tissue, similar to that in which it was implanted, without leaving foreign material in place, being gradually replaced by host cells which remodel the deficient tissue [14]. The graft is not based on dermal tissue containing elastin, which is why Surgisis remodels into the patient's tissues without creating tension-prone areas. Initially acellular biological graft interposition was practiced for rectovaginal fistulas due to Crohn's disease, being the only graft that can be applied on contaminated granulation tissue [15]. In the presented case sepsis potential was present due to the repeated interventions resulted in the recurrence of fistula.

Conclusions

Recurrent rectovaginal fistulas associated with sphincter muscle lesions can be addressed by episyproctotomy technique

for reconstruction of the ano-perineal region and sphincter apparatus.

Surgisis Bio Design biological graft interposition represents an alternative of tissue interposition that can solve recurrent rectovaginal fistulas.

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