

Reconstruction of Perineal Body for Repair of Rectovaginal Fistula Caused by Birth Trauma Offer Best Outcome for Patients - A Colorectal Surgeon's Experience

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ABSTRACT

Purpose: Stool coming out from vagina could be stressful to the women, especially following delivery. Some women may also prone to anal incontinence because of birth injury. Appropriate management of the problem is important for patient's quality of life. This is a retrospective analysis of a single surgeon's experience of repairing rectovaginal fistula caused by birth trauma, stressing the importance of perineal body reconstruction in a tertiary referring medical center.

Materials and Methods: This is a retrospective analysis from March 1983 to June 2024, 67 patients who had direct repair of rectovaginal fistula by a single surgeon. Excluded were patients who had malignancy as the cause of anal incontinence. Patients who had bowel resection as the treatment of choice for incontinence were also excluded. 62 of them had birth trauma as the cause of fistula. Ages ranged from 21 to 65 years old, with an average of 35.8 years old for those who had fistula caused by birth trauma. Ages ranged from 13-75 years old with an average of 40.8 years old for those who had fistula not caused by birth trauma. All of the patients complained to some degree of anal incontinence prior to the repair of rectovaginal fistula.

Results: Two patients in the direct repair of rectovaginal fistula group had recurrences of fistula which necessitate a second repair. No patients in the series had intentional creation of a stoma by the surgeon. However, two patients had a stoma created before being seen by the surgeon. The patients in this series showed high rate of satisfaction of anal continence following surgical treatment.

Conclusions: Reconstruction of perineal body is important because associated anal sphincter defect by birth trauma or previous failure of repair frequently present as the cause of incontinence.

Keywords

Rectovaginal fistula, Obstetric trauma, Vaginal delivery complications, Perineal body reconstruction, Anal incontinence, Obstetric anal sphincter injury (OASIS), Fistula repair.

Introduction

Stool coming out from vagina could be stressful to women, especially following delivery. Some women may also may also prone to have anal incontinence due to birth injury. Appropriate

management of the problem is important for patient's quality of life. This is a retrospective analysis of a single surgeon's experience repairing rectovaginal fistula caused by birth trauma, stressing the importance of perineal body reconstruction. We believe that this is the largest series of experiences by a single surgeon for repair of rectovaginal fistula following birth trauma in modern medicine.

Materials and Methods

This is a retrospective analysis from March 1983 to June 2024, of

67 patients who had direct repair of rectovaginal fistula by a single surgeon (TCH). Excluded were patients who had malignancy as the cause of anal incontinence. Patients who had bowel resection as the treatment of choice for incontinence were also excluded. 62 of them had birth trauma as the cause of fistula. Age ranged from 21 to 65 years old, with an average of 35.8 years old for those who had fistula caused by birth trauma. Age ranged from 13-75 years old with an average of 40.8 years old for those who had fistula not caused by birth trauma. All the patient complained some degree of anal incontinence prior to the repair of rectovaginal fistula. It was preferred to have operation six months following injury or last repair.

All the patients received bowel preparation include clear liquid for one day; laxative the day before surgery and cleansing enema the morning of surgery; oral antibiotics for three doses to cover aerobic and anaerobic bacteria in the evening before surgery. Patients were kept on NPO the night before surgery. In the operation room, under spinal anesthesia or general anesthesia, the patient is placed in the prone jackknife position. An H-shaped incision was made with transverse limb across the perineal body (Figure 1) and fullness flap of skin and vagina is developed. A Hill-Ferguson retractor is kept in place in the anal canal for the entire operation in order to maintain adequacy of the lumen while the muscle repair is completed. The rectum is separated from the vagina, and the fistula tract is divided. The cephalad limit is reached, and a plication of the levator ani muscle is carried out anterior to the rectum. The redundant mucosa is excised from the vagina and the rectum. The external sphincter muscle is reapproximated using the same suture material. Sometime it is rather difficult to identify residual external sphincter, but there is usually fibrous tissue that can be used to build up the perineal body. The final step in the operation is to advance and interdigitate the flaps of skin. The skin is mobile enough so that the suture line will actually be within the anal canal and within the vagina in the midline. Reconstruction of perineal body is complete. Drain is usually not necessary. Postoperatively, patients were placed on a bowel-confining regimen; this consists of a clear liquid diet daily. The wounds are cleansed two to three times daily with a topical antiseptic solution. After 5 days, a regular diet is instituted.

Results

Two patients in the direct repair of rectovaginal fistula group had recurrences of fistula which necessitate a second repair. No patients in the series had intentional creation of a stoma by the surgeon. However, two patients had a stoma created before being seen by the surgeon. The patients in this series showed high rate of satisfaction of anal continence following surgical treatment.

Discussion

A rectovaginal fistula is defined as a congenital or acquired communication between the two epithelial-lined surfaces of the rectum and vagina [1-3]. A fistula between the anal canal distal to the dentate line and the vagina is not truly a rectovaginal fistula but is an anovaginal fistula. Etiology of rectovaginal fistulae include congenital malformation, trauma (obstetrical,

gynecological, colonic, fulguration, violence, foreign body) [4-8], pelvic irradiation, infection of anal gland or Bartholin's gland, inflammatory bowel disease [9], neoplastic (either cervix, rectum, vagina) [10] and hematologic (such as leukemia), and miscellaneous [11]. Symptoms of rectovaginal fistula include discharge with fecal odor, recurrent or chronic vaginitis, passage of flatus or stool per vagina, fecal incontinence due to sphincter damage, diarrhea or blood or mucous discharge because of the underlying disease state. Examination of rectovaginal fistula include confirm the size and location of the RV fistula, accurately determine the size and location of the RV fistula, assess the state of the anal sphincter, exclude fistulae involving other organs, search for signs of an underlying disease state such as an acute infection, Crohn's disease, irradiation injury or a neoplastic process [12].

Tools for rectovaginal fistula include vagina tampon and instilling methylene blue into the rectum, contrast media fistulogram, vaginogram, barium enema, intravenous pyelogram, endoscopic procedures [13]. Classification of rectovaginal fistula by location: a rectovaginal fistula can be classified as low: between the lower one-third of the rectum and the lower one-half of the vagina [14], located at, or just slightly above, the dentate line with the vaginal opening just inside the vaginal fourchette [15] can be corrected from a perineal approach; high: between the middle one-third of the rectum and the posterior vaginal fornix [14] with the vaginal opening is behind or near the cervix [15] and can only be approached transabdominally. Rectovaginal fistula can be classified by size as small: 0.5 cm to 2.5 cm in diameter, large: greater than 2.5 cm in diameter, third degree defects involving the whole of the posterior vaginal wall up to the cervix [15]. Timing of operation repairs should depend on the cause of rectovaginal fistula. Spontaneous healing is primary dependent on its etiology and to a lesser extent, its size. Half of small RV fistula secondary to obstetrical trauma will heal spontaneously. Removal of a foreign body is often followed by healing of RV fistula. Proper treatment of an infectious process may allow healing of fistulae. However, IBD, irradiation and neoplasm induced fistula rarely healed spontaneously [16].

The author's of preoperative considerations include preoperative bowel preparation, perioperative systemic antibiotics, a bladder catheter, adherence to the operative principles of gentle dissection, full mobilization, excision of the diseased bowel and in most cases the fistulous track, and accurate apposition of healthy tissue without tension. Local repairs of the rectovaginal fistula include fistulotomy and drainage, conversion to complete perineal laceration with layer closure, inversion of fistula, excision of fistula with layer closure with or without muscle interposition. Those repairs can be performed from vaginal approach, rectal approach, perineal approach, or transphincteric approach [17]. The authors preferred to use combined rectal and vaginal approach, but stress that repair of rectal side is more important than vaginal side because rectal side is high in intraluminal pressure than vaginal side. Sliding flap advancement include mucosal and partial thickness internal sphincter, anterior rectal wall [18], involves elevating the mucosa from the posterior vaginal wall from the rectal wall and bringing

the rectal tissue down into the anal canal to cover the defect. Sphincter-preserving transabdominal repairs include mobilization, division and layer closure without bowel resection with or without interposition, bowel resection ± interposition, pull-thorough procedures, low anterior resection (either transsacral, EEA stapler), sleeve anastomosis [16], onlay patch anastomosis [10]. Excision of rectovaginal fistula with layer closure include transanal repair of a low to mid rectovaginal fistula with mucosal advancement, transcoccygeal repair of rectovaginal fistula or rectourethral fistula (Kraske operation). Miscellaneous operative procedures include sphincter-sacrificing bowel resections, colostomy and colopocleisis and even gracilis muscle transposition [19].

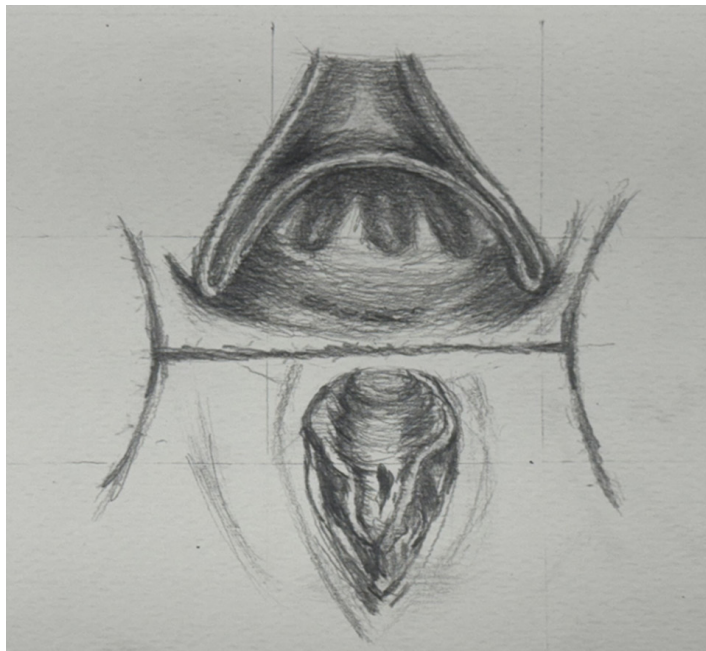


Figure 1: An H-shaped incision was made with transverse limb across the perineal body.

Conclusions

Reconstruction of perineal body is important because associated anal sphincter defect by birth trauma or previous failure of repair frequently present as the cause of incontinence.

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