

Two Cases of Complicated Rectovaginal Fistula Treated by Hanging Line Method Were Reported and Reviewed in the Literature

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Abstract

This paper retrospectively analyzes the complicated rectovaginal fistula in 2 cases after the successful treatment. Through literatures collected, with the difficulties and contradictions of the treatment of complicated rectovaginal fistula as the starting point, the currently used hanging line method, the advantage and deficiency of surgical treatment in recent years, and the change of treatment method were reviewed. We wish to explore which current treatments could be a better choice.

Keywords

Rectovaginal Fistula Hanging Line Method, Literature Review

1. Introduction

Rectovaginal fistula (RVF) is a pathological channel between the rectum and the vagina. Patients often present with abnormal vaginal discharge, discharge of pus, and even involuntary discharge of feces. These symptoms have long-term effects, causing serious physical and psychological obstacles to the patients. There are many causes of the disease, most of which are birth injuries caused by childbirth. Other causes include perianal infection, surgery, trauma and radiotherapy. Once rectovaginal fistula occurs, it is generally difficult to self-heal, often needs human intervention. At present, there is no unified standard for the treatment of rectovaginal fistula. There are often a variety of treatment options due to the different specific parts of the lesion and the different personal experience of clinicians. Surgical treatment is a more selected treatment method, but due to the anatomy of the disease, the recurrence rate is high, and multiple operations have an impact on the patients' life confidence. This paper reports on 2 patients who suc-

successfully treated complicated rectovaginal fistula by the hanging method, while reviewing the relevant literature.

2. Case Reports

2.1. Case 1

Lu * * G3P2A1, 33 years old, delivered a live baby boy at 13:30 on April 18, 2018, with The Apgar score was 6 points in 1 minute and 10 points in 5 minutes after resuscitation. The baby weights 4195 g. Amniotic fluid was III degree polluted, no umbilical cord around the neck, placenta and fetal membrane were delivered completely, perineum was II degree lacerated, and suture was performed. Postpartum 27 days, the patient complains of vaginal exhaust more than ten days, so she was admitted to hospital and given the gynecological examination: vulva married labor, vaginal chang, see a little serous lochia, vaginal wall from vaginal mouth fistula hole about 5mm in diameter, and rectum, surrounding granulation tissue and scar formation, uterus such as pregnant 2 months size, no tenderness, double attachment area did not touch obvious abnormalities. Check hematuria routine, coagulation function, liver and kidney function, electrolyte, blood sugar, electrocardiogram and liver, gallbladder, spleen, pancreas, renal ureter color to exceed no obvious abnormalities, chest X-ray shows double upper lung fibrosis lesions, right lower lung nodule shadow, respectively on May 18, 2018 in gynecology and September 14, rectal vaginal fistula repair in anorectal surgery, were unsuccessful. On January 8, 2019, she was readmitted to the hospital for examination: the posterior vaginal wall was 0.3 cm depressed 1.5 cm from the vaginal mouth, with a small rupture, the surrounding mucosa was slightly edema, connected with the anterior rectal wall, and the surrounding granulation tissue and scar formation. Due to the failure of many operations, it was decided to use thread hanging method after consultation. On January 14, the necrotic tissue at the rectovaginal fistula and the perineal suture were removed and washed with normal saline; Probe examination was conducted to find out the position of the internal mouth and the relationship between the fistula and the anal sphincter. The rubber band was tied through the fistula and there was no resistance in the trial traction. After the operation, the pipeline and the wound were rinsed with 0.5% metronidazole solution every day. The patient took a warm water bath with PP powder. The patient pulled the rubber band by himself. On the 7th day after the operation, Jinyinshu eye drops were dropped into the wound. On the 11th day after the operation, the rubber band was pulled out and the fistula was closed smoothly.

2.2. Case 2

Gong * *, 29 years old, married; G3P1A2 was admitted to the hospital in 2020-3-14 for “39 weeks pregnant, vaginal bleeding more than 1 hour”. Prenatal examination: abdominal circumference 97 cm, uterine height 31 cm, first exposed, fixed, no uterine contraction, fhr 138 bpm; On that day, our B-ultrasound

showed: BPD89mm, AC336mm, single live fetal head position, grade 2 + placenta, maximum amniotic fluid level 64 mm; The results of liver and kidney function were normal, and the tests of hepatitis C, syphilis and AIDS were negative. At 13:55 on March 15, 2020, a live male infant was delivered under perineal protection, with a weight of 3330 g. The Apgar score was 9 points. The perineum was severely lacerated in grade II, and the perineum muscle layer was involved in the whole layer. It was sutured according to the anatomical level, and the bleeding was about 200 ml. The postpartum mother's urine and stool were normal without any special discomfort. She was discharged on March 18. On March 21, the patient had abnormal vaginal discharge after conscious defecation. On March 23, hospital inspection found a stool sample secretions, vaginal opening after vaginal wall is apart from the vaginal opening 2 cm is seen here in a diameter of about 1 cm hole, and rectum are interlinked, consider rectovaginal fistula, hence readmission, on March 28, 2020, surgical repair, a week after the surgery, The patient had abnormal secretions in the vagina again after defecation, so on April 7, the bladder lithotomy position was taken, routine disinfection and towel laying was performed, the rectovaginal fistula necrotic tissue and perineal suture were removed, and the patient was disinfected again with iodophor and rinsed with normal saline. Probe was conducted to find out the position of the internal opening and the relationship between the fistula and the anal sphincter. The rubber band was tied through the fistula, and the external opening of the perineum, vagina and anus were disinfected again. The tube and wound were rinsed with 0.5% metronidazole solution every day after operation, and PP powder was used for warm bath. The patient pulled the rubber band by himself. On the 7th day after operation, Jinyinshu eye drops were applied to the wound, and the rubber band was pulled out on the 14th day after operation, and the fistula was closed successfully. On June 30, he came to the hospital for review. He had a complete perineum and normal stool.

3. Discussion

The symptoms of a vaginal fistula are related to the type of fistula, which includes rectovaginal, colonic, vesovaginal, ureteral, and urethral vaginal fistula [1]. The etiology of vaginal fistula includes obstetric complications, inflammatory bowel disease, surgical causes, pelvic malignancy, trauma, infection, congenital conditions and radiation effects [2]. Worldwide, the most common type of fistula is vesicovaginal fistula and rectovaginal fistula caused by obstetric causes. In developing countries, the main cause of vaginal fistula is prolonged labor or dystocia. The result of pelvic tissue necrosis is caused by a tissue jam between the fetal site and the pelvic sex [3]. In developed countries, vaginal fistulas are more commonly iatrogenic and caused by surgical procedures or radiation therapy. The most common iatrogenic cause is the gynecological surgery, mainly the surgical procedure is for the hysterectomy, and the most common type of fistula occurring is the cystovaginal fistula. And women over 50 years old

are at an increased risk of developing a fistula [1]. Other risk factors included smoking, diabetes, obesity and previous history of radiation for pelvic malignancies. Tumor may cause local tissue destruction to lead to fistula formation, and the radiation can cause occlusive endarteritis and chronic ischemia, leading to fistula formation. Another common cause of fistulous fistula is Crohn's disease [4]. Fistula formation is a common and serious complication of Crohn's disease and can occur in up to 50% of patients within 20 years of a definitive diagnosis [5].

Rectovaginal fistula can be divided into low, high and median according to different location; simple and complex according to the difficulty of treatment [6]. 1) Low rectovaginal fistula: fistula is located in the distal anal sphincter complex and the vaginal opening below the dentate line; 2) high rectovaginal fistula: fistula is located between the cervical plane and the anus; 3) median rectovaginal fistula: fistula is located between the above two. Simple rectovaginal fistula includes low level, fistula diameter < 2.5 cm, and rectovaginal fistula due to labor injury or infection, and complex rectovaginal fistula includes high fistula location, fistula diameter > 2.5 cm, or rectovaginal fistula due to Crohn's disease, radiation therapy, cancer, and recurrence after previous surgical repair.

Rectovaginal fistula can often be diagnosed according to the detailed medical history collection and physical examination. Patients involved have a variety of different symptoms, including vaginal feces or exhaust, recurrent urinary tract infections, vaginitis, vaginal bleeding, or smelly vaginal discharge [7]. Low rectovaginal fistulas can be observed directly observed by anoscopy and endoscopy, but most fistulas are difficult to detect by physical examination, and imaging as a good adjunct increases the diagnostic accuracy. Currently, a wide range of used imaging examinations include vaginal angiography, barium enema, MRI, intra-rectal or intravaginal ultrasound, CT, etc. [8] [9].

Surgical modality is the primary treatment of rectovaginal fistula, and, as with many surgical diseases, the timing of the choice is crucial when performing rectovaginal fistula surgery. After adequate preoperative preparation, the surgeon may choose a transanal perineal, transvaginal, or abdominal approach. Different types of rectovaginal fistula require individualized surgery. In 1902, Noble [10] first proposed that rectal advancement flap repair for the treatment of rectovaginal fistula, mainly using healthy epithelial tissue to cover the surface of the fistula to achieve the purpose of closing the fistula. For patients with low rectovaginal fistula, transrectal surgery is a better surgical approach, and it is highly respected by the majority of anorectal surgeons. The theoretical basis of the transrectal approach operation is that the rectum is a high pressure area relative to the vagina, and sealing the fistula can effectively avoid the contamination of intestinal flora. The transperineal approach is suitable for women with a concurrent history of fecal incontinence, sphincter defect, transanal or transvaginal approach failure. The main method is the perineal rectotomy, and the main point of the surgery is to artificially transform the rectovaginal fistula into an IV degree perineal laceration, followed by a layered suture laceration. The greatest

advantage of this procedure is the open surgical field, adequate exposure of the fistula and sphincter defects, thus adequate sphincter formation and perineal reconstruction. The transvaginal approach is specific by making an incision between the posterior vaginal wall mucosa and the perineal skin, bringing the vaginal flap from the top to the bottom. The fistula was exposed and excised, and the rectal defect was closed in two layers. Finally, the vaginal mucosal flap was pushed into the defect and secured to the skin with an absorbable suture. Proponents of this method have the following advantages: good surgical field, no extra perineal wound, no anal or perineal deformity, no sphincter cutting, and sphincter plasty can be performed at the same time. The transabdominal approach is suitable for patients with high fistula, complex RVF. When the fistula is located in the posterior vaginal fornix and cannot be repaired through the perineum or through the transrectum, this method can fully expose the surgical site and fully free the whole layer of the rectal wall, making up for the difficulty of free other pathways.

Surgical treatment of rectovaginal fistula is the main modality, but it also has limitations. Usually, fistula incision or resection is often used in low or median fistula types. For patients with high fistula, a large part of the external sphincter should be isolated due to the influence of anatomical factors, which increases the risk of rectal and vaginal injury. Hanging therapy is a kind of fistula treatment technology developed by the traditional TCM theory combined with the conservative minimally invasive concept of modern medicine. The theoretical basis of its application can be summarized as the following aspects: fistula labeling, secretion drainage, chronic cutting, and inflammatory stimulation. The hanging line therapy applied in this paper uses the above theoretical basis to heal the fistula naturally without damaging the sphincter.

Jinyinshu is a recombinant human epidermal growth factor eye drop that is commonly used in the treatment of ophthalmic diseases [11]. Its drug mechanism of action is that its main active ingredient, rhEGF, can bind to the rhEGF-specific receptor (rhEGFR) on the membrane surface of tissue target cells, causing a series of biochemical reactions. Epidermal growth factor (EGF) is produced by platelets, macrophages, and monocytes, and interacts with receptors on epidermal cells and fibroblasts. During wound healing, epidermal growth factor acts by stimulating epithelial cell growth and proliferation on the wound [12]. This paper is the first application of Jininshu to the treatment of rectovaginal fistula to accelerate the healing time of the fistula through the use of its role in promoting epithelial cell growth and proliferation.

4. Summary

Rectovaginal fistula has always been a difficulty in clinical treatment. Due to the different experience of clinicians and the different location of fistula, there is no unified standard for the treatment of this disease, and individualized treatment plan should be adopted. This article shows that for patients with recurrent rectovaginal fistula, hanging line therapy is a good treatment option, but more re-

search is needed to support this.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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