



In-Depth Review of Recto-Vaginal Fistulas

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ABSTRACT

Studies have also shown that a fistula is a link between two distinct surfaces, or lumens. Furthermore, studies have shown that it begins on the side that is under attack and eventually reaches a lumen or surface that is next to it. Additionally, studies have concluded that, it efficiently travels the fastest and most direct route to the organ that is right next to it. In addition to this, it also concluded by many studies that, the rectum serves as the starting point for the RVF, which extends to the vagina. Thus, in our review, we have discussed RVF and its etiology, frequency, pathology, histology, differential diagnosis, prognosis, complications and treatment.

Key words: RVF, etiology, frequency, pathology, histology, differential diagnosis, prognosis, complications, treatment.

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INTRODUCTION

Studies have concluded that a fistula (F) is the name given to an irregular connection that exists between two epithelial surfaces. [1] Furthermore, research has shown that this classification is correct for the vast majority of F cases, even though there are a few notable exceptions. Studies have also found that it is common practice to tell the difference between F, sinuses, abscesses, and other types of luminal tracts or extra-luminal collections when writing technical documents. [2] Studies have concluded that a connection between two different surfaces, or lumens, is known as a F. [2] Additionally, studies have shown that it begins on the side that is generating the problem and then spreads to a lumen or surface that is next to the original side. Further studies showed that it travels to the adjoining organ using the path that is least circuitous and most expedient. [2] Additionally, studies confirmed that the rectum is the starting point for the recto-vaginal fistula (RVF), which then continues into the vagina. Studies have shown that this is either a physiological condition or a situation that is unhealthy. [2] However, studies have shown that, in most cases, there is an underlying cause, such as a preexisting medical condition, physical trauma, or a history of past surgery. Several studies have also found that the characteristics of a RVF, including its location, size, scope, level of activity, and associated symptoms, can change depending on things like the underlying cause, the patient's specific situation, and the therapy being used. [1] In addition to this, studies have also concluded that this surgical condition might cause complications for the patient as well as the healthcare team that is treating them. Additionally, studies have concluded that the etiology of the underlying condition serves as the deciding factor in how the condition is evaluated and managed, as well as the prognosis. Furthermore, studies concluded that, within the larger category of F, this page focuses on the RVF to offer an overview of the condition. [1] Thus, in our review we have discussed about RVF.

ETIOLOGY

Studies have concluded that an underlying condition, injury, or surgical procedure results in RVF development. [2,3] Furthermore, studies have concluded that, a persistent connection between the rectum and vagina, diseases of the vagina or the pelvic organs might become more complex. [1]

Other common cause of RVF are as follows:-[5,6,7,8]

1. "Obstetric Related Injury
2. Surgical Procedure
3. Diverticular Disease
4. Crohn's Disease
5. Malignancy
6. Radiation
7. Non-surgical injuries & Foreign Bodies"

FREQUENCY

Studies have been proving that its frequency varies with cause.[1] Furthermore, according to studies, they are classified by etiology, location and size which affects treatment & prognosis.[1] Additionally, studies have concluded that RVF are divided into 2 groups by location which is as follows:-[1]

1. Low RVFs .
2. High RVFs
3. Most RVFs are less than 2 cm in diameter and are stratified by size.
 - a. Small = less than 0.5 cm
 - b. Medium = 0.5 to 2.5 cm
 - c. Large = Exceed 2.5 cm

PATHOLOGY

Studies have also concluded that the “consequence of an underlying illness, surgical treatment, or injury may cause a vesicovaginal fistula, just as it can cause other F”.[1] Additionally, studies have shown that if one has a solid understanding of the pathophysiological process, one may more accurately diagnose, treat, and even avoid F.[1] Studies have also concluded that “when the rectal or vaginal wall loses its integrity as a result of persistent inflammatory, infectious, or neoplastic processes, this may cause erosion to the adjacent tissue or organ and produce an inappropriate fistulous attachment. Furthermore, studies have shown that fistulae have a greater likelihood of healing when the underlying process is reversible or treatable, such as diverticulitis”.[1]

HISTOLOGY

Studies have also found that when the affected tissue is looked at histopathologically, an acute inflammatory response is seen, along with the illness that is linked to the F.[1] In addition to this, studies have concluded that acute inflammation is triggered by a combination of factors, including the underlying condition that led to the fistula (such as diverticular disease, cancer, Crohn's, and others), irritation of the tissue due to the movement of intestinal material, and the subsequent infection. In some cases, there may be other histological abnormalities present, such as persistent inflammation caused by radiation, Crohn's disease, malignancy, or injury-related necrotic F.[1]

DIFFERENTIAL DIAGNOSIS [1]

1. “Aortitis
2. Appendicitis
3. Blunt abdominal trauma
4. Colon cancer
5. Diverticulitis
6. Enterovesical fistula
7. inflammatory bowel disease
8. Large bowel disease
9. Malabsorption
10. Urinary tract infection and cystitis in females”

PROGNOSIS

Studies have also found that after surgery, most patients are able to return to their normal activities within a week or two, but it will likely be many months before they have reached their full level of recovery.[1]

COMPLICATION [9]

Studies have also shown that problems with cleanliness, feces leakage, pain in the vaginal, perineal, or anal areas, the risk of a life-threatening abscess, and the chance that the fistula will come back are all possible side effects of RVF.

TREATMENT [10]

1. Conservative

According to studies, this type of treatment will include baths, wound care, debridement, antibiotics & stool bulking fiber supplements for around 3-6 months in total. Studies have also concluded that, those patients who all have RVF originated from various etiology like obstetric trauma are managed 14.1% to 18% with conventional treatment later on surgical treatment is performed. Studies have also concluded that the recovery rate of patients who had conservative treatment varied from 52 to 66 percent.

Additionally, studies have also concluded that when treating small RVFs, the strategy that should be used is known as conservative therapy. Studies have also found that Oakley reported that about 45% of treated RVFs were typically small, measuring 0.5 cm or less. Studies have also concluded that it has only been found to be successful in treating two distinct individuals with RVF related to obstetrics.[10]

RVF after Low–Anterior Resection (LAR) [10]

Studies have also concluded that RVF that has formed as a result of LAR is very resistant to conservative treatment in the vast majority of instances.[10] Additionally, studies also concluded that it is probable that conservative treatment is only successful for RVFs in patients who have very few symptoms (such as only passing flatus but not feces via the vagina, for example) and no pelvic radiation.[10] Furthermore, studies have concluded that RVFs are often treated with bowel rest and complete parenteral feeding for up to two months following LAR. This is done so that the RVFs may mend on their own to a size of less than one centimeter.[10] Nonetheless, studies also responded that these cases that had been healed were only reported as case reports. In addition to this, studies also concluded that the closure of RVFs was seen in the published case reports that included the use of vaginal or oral estriol tablets in addition to conservative therapy. Studies have further concluded that this combination of treatments has been shown to be effective in reducing the size of RVFs. Without any kind of surgical intervention, studies have shown that the vaginal estriol tablet was given to eight patients, and after thirty-five days, six out of the eight RVFs had healed up. The material presented here is an overview of the successful case reports that came after LAR. In the meantime, studies also concluded that the two patients who did not undergo surgery were given an oral tablet of estriol, and their RVFs healed within a period of 26 days. Studies have been revealing that RVFs healed between 16 and 120 days following therapy in four patients who had surgical intervention (three diverting stomas) and who received oral or vaginal estriol tablet delivery. Thus, in a survey of active members of the American Society of Colon Rectal Surgeons (ASCRS) in the 1990s, only 14 of the 57 RVFs that occurred after LAR (24.6%) were treated conservatively, and of those instances, only 71.1% (10/14) healed conservatively.[10]

RVF Induced by Crohn's Disease [10]

Studies have also concluded that patients who have Crohn's disease-induced RVFs have a number of treatment options open to them, ranging from observation to medicinal therapies to the need for surgical intervention.[10] Studies have also concluded that patients who have RVFs due to Crohn's disease also have the option of undergoing surgical intervention. Additionally, studies have concluded that antibiotics, corticosteroids, immunomodulators, and biologics are only some of the treatment options for Crohn's disease that are now at a patient's disposal. Metronidazole has successfully treated RVF. In the ACCENT II study by Sands et al., RVFs were closed in 60.7% (17 of 28) of patients who had infliximab infusions at weeks 0, 2, and 6.[10] This happened in weeks 10 and 14. Studies have further concluded that RVFs were closed in 44.8% (13 of 29) patients, respectively, after receiving infusions of infliximab at weeks 0 and 2. At the same time, a study found that at 4-6 weeks follow-up, the rate of complete response to infliximab was much lower in 14 patients with RVF (14% vs. 78%) compared to those with perineal fistula.[10] The Association of Coloproctology of Great Britain and Ireland's findings from a consensus exercise lend support to the use of anti-tumor necrosis factor (TNF) therapy. According to the most recent study, 38.3% of people with RVF responded completely to medical therapy (fistula closure) and 22.3% responded partially. On the other hand, 41.0% of people with RVF responded completely to anti-TNF therapy and 21.8% responded partially.[10]

2. Endoluminal Procedure, Fibrin Glue, Plug & Others [10]

Studies have also concluded that RVFs that developed after colon resection as a treatment for cancer have been successfully treated with self-expanding metallic stents.[10] RVF healed in eight out of ten patients, which is an 80% success rate; however, some of the patients developed stent dislodgement or acute tenesmus, which necessitated the removal of the stent. This brought the overall success rate down to 70%. Researchers also discovered that "endoluminal clipping of RVFs with an over-the-scope clip proctology device closed the fistula in seven of sixteen patients (43.7%) eight months after treatment, for different reasons. However, eleven of the patients had a temporary diverting stoma at the time of the clipping surgery. In addition to this, studies have concluded that an operation that combines endoscopic stenting with endovaginal clipping may be used".[10] In another study, in two out of five cases (or forty percent), RVFs were successfully treated with transanal endoscopic surgery.[10] 71 patients were involved in a recent investigation where endoscopic repairs of RVF were done & spread across 11 publications. In another study, a total of 51 patients, or 71.8% of all cases, found that post-surgical complications were the root cause of RVFs. Obstetrical problems were the reason in 7 patients, which accounted for 9.8% of all cases. Inflammatory bowel disease was the cause in 5 patients, which accounted for 7% of all cases. Studies have also concluded that the vast majority of fistulas are located either in the middle or in the lower portion of the ear. Furthermore, studies have also concluded that the success rate

of endoscopic repairs, such as clipping, stenting, and transanal endoscopic microsurgery, varied from forty percent to ninety-three percent during a follow-up period of more than one year. Studies have also concluded that RVFs of different origins have been treated with the application of fibrin glue.[10] However, studies have also concluded that only “31% of patients (12/39) saw durable healing as a consequence of this treatment. Fistula plug(FP) has shown some benefit to perineal fistulas of cryptoglandular origin; however, the limited data on RVFs has shown only a 20%–50% closure rate”. [10] Furthermore, studies have also concluded that “FP have been shown to provide some benefit to perineal fistulas of cryptoglandular (CGD) origin. The use of stem cell therapy has lately allowed for advancements to be made in the treatment of Crohn’s disease-related RVFs”. [10] Initial research reported a success rate of sixty percent (60%) after twelve weeks following dosing. But studies have also found that a second look showed that RVFs had a lower healing rate (27.2% vs. 78% and 76.4% for perianal and transsphincteric fistulas, respectively). Studies have also concluded that this was in comparison to the rate of healing for perianal and transsphincteric fistulas, which varied anywhere from forty percent to ninety-three percent.[10]

3. Surgical Treatment [10]

a. Stoma [10]

Studies have also concluded that stoma diversion may lessen the severity of symptoms associated with RVF and may speed up the healing process associated with a fistula. Studies have further concluded that stoma diversion may also be used to treat other conditions. According to a finding, the use of a transversal temporary stoma considerably increased the possibility that the repair would be successful.[10] In the meantime, another study discovered in their retrospective investigation that, the use of a stoma did not improve the recurrence rate after RVF repair. They came to this conclusion after seeing that the use of a stoma did not help to improve the recurrence rate. Studies have also concluded that the clinical efficacy of diversion stomas is still up for debate, since there is not a significant amount of evidence to warrant their usage. This is due to the fact that there is not enough data. According to the “German S3 guideline for RVT, which was stated with a great deal of unanimity, the choice of stoma construction should largely base itself on the size of the local defect and the associated burden on the patient”. [10]

b. Local Repair [10]

Studies have also concluded that approaches to local repair include transanal, perineal, and transvaginal techniques, with or without tissue interposition.

Local Repair without Tissue Interposition

i. Advancement flap(AF) [10]

Studies have also concluded that the “AF may be performed by elevating either the rectal or vaginal mucosa and then using it to cover the FT. Studies have also concluded that this is performed in combination with the initial closure and the debridement or excision of the fistula tract”. [10] Studies have also concluded that both the endorectal and transvaginal approaches to treating AF have been lauded for their share of positive qualities. Studies have also found that “endorectal AF can be done from the high pressure side, which can help move the mucosa more quickly. However, transvaginal AF may have more vascularized tissue, which can help the tissue heal faster and provide other benefits”. [10] Studies have also concluded that “AF is often the procedure of choice for low-lying or uncomplicated traumatic RVFs in patients who do not have a previous history of incontinence”. [10] Studies have also concluded that AF has also been utilized for more complex cases of RVF, such as Crohn’s disease.[10] A study reported that “AF for RVF is typically not advised for chronic complex fistulas with failed AF stent repair or for simple fistulas with failed AF repair”. [10] Similar but another study said that “endorectal AF in patients with Crohn’s disease is not recommended in women who have extensive ulceration or stricturing of the anal canal and transitional zone, as well as in women who have an anterior sphincter defect”. [10] On the other hand, this technique is ideal for “patients who have minimal disease or a normal anal canal”. [10] According to studies, in patients with sphincter injury or dysfunction with fecal incontinence, endorectal AF may be performed in addition to sphincteroplasty. The ASCRS clinical practice guidelines propose endorectal AF as the procedure of choice for the vast majority of patients who have RVF. This procedure may be performed with or without sphincteroplasty”. [10]

ii. Episioproctotomy [ESPT] [10]

Studies have also concluded that an ESPT is a procedure that may be performed transperineally. Studies have also concluded that all of the tissue that is positioned above the fistula is removed during an episioproctotomy procedure.[10] Studies have also concluded that this includes the anterior sphincter complex as well as the rectovaginal septum. After this, the fistula is healed in phases using a fistulotomy procedure. In addition to this, studies have also concluded that patients who have obstetrical or cryptoglandular RVF and who also have a deficiency in their anterior sphincter may be suitable candidates for this procedure.[10] Additionally, studies showed that those patients who have the

procedure often experience an improvement in their fecal and sexual function that is considered good. Thus, their success rate ranges from 78 to 100%. [10] Furthermore, concluded that it have a slightly or significantly higher healing rate than the other procedures for patients with RVF due to obstetrical or CGDO. According to these studies, this procedure includes the potential for the wound to heal over time. [10]

iii. Transverse Transperineal Repair with or without Sphincteroplasty [10]

Studies have also concluded that this procedure might also be referred to as a transperineal approach or a transperineal repair. [10] This procedure, which will approach the fistula tract, will make its way in via the perineum, which will function as the entrance site. An incision will be created in the perineal body in a transverse direction at the commencement of the procedure. After this step has been completed, the rectovaginal septum is dissected in a direction that is cephalad to the fistula tract. Following the removal of the FT, multiple closures may be accomplished either with or without sphincteroplasty or levatorplasty. [10] Because it makes tissue interposition easier and allows for better exposure of the fistula, this procedure is suitable for RVF that are more difficult to treat, occur more often, and are larger in size. Women who have previously attempted a transanal or transvaginal approach and been unsuccessful are the best candidates for this procedure. [10] Women who already suffer from incontinence are a suitable candidate as well. The findings indicate that the success rate may be as high as 100 percent of the time. Transperineal repair with levator interposition exhibited a poorer healing rate for RVF with mixed etiology than transperineal repair alone did (64.7% vs. 78.4%, respectively). The “group undergoing transperineal repair with stapling had a better postoperative Wexner score, less intercourse discomfort, and a lower recurrence rate (6/45 vs. 17/37) than the group undergoing transperitoneal direct suturing for low- and mid-level RVF”. [10]

iv. Fistulectomy & Closure with or without Sphincter Repair or Tissue Interposition [10]

Studies have also concluded that this procedure may also be known as primary closure with sphincter repair, purse-string closure, or fistulectomy with or without sphincter repair or tissue interposition. [10] Studies have shown that when RVF is brought on by Crohn's disease (CD) any approach may be utilized to treat it, but the recommended approach is the one that is most often recommended by gynecologists. [10] During this procedure, once the fistula tract has been removed, numerous closures will be done. [10] Studies have also concluded that sphincter repair may be an additional therapy option for patients who suffer from fecal incontinence as well as sphincter injuries. [10] This procedure is recommended for patients who have an RVF that is small or low-lying, in particular those who have an obstetric origin. [10] This procedure has a success rate that varies anywhere from 53.1% to 100 percent. [10]

Local Repair with Tissue Interposition [10]

It has also been shown in studies that tissue interposition, which involves injecting well-vascularized tissue into the RVS along with local repair, speeds up the healing process of RVF scars. Studies have also concluded that the vaginal suture may be kept separate from the rectal suture and protected with the use of tissue interposition. In most cases, the most suitable patients for these treatments are those who have RVFs that are complicated, recurring, or chronic. [10]

i. Martius (Bulbocavernosus) Flap (MF) [10]

It has also been shown in studies that this procedure may also be referred to as the Martius labial fat pad or the bulbocavernosus muscular fat pad. [10] In addition to this, studies have also concluded that “after performing a perineal dissection to separate the rectum and the vagina, a pedicle muscular graft is taken from the labia majora and translated to the perineal wound that is located between the rectum and the vagina. This procedure is appropriate for the treatment of low- and mid-level fistulas that are located up to roughly 5 cm proximal to the vaginal introitus, depending on the reach of the pedicle”. [10] Despite the fact that this procedure has only been reported in a few small retrospective studies with a wide variety of causes and a short amount of time for follow-up, the success rate has been reported to range anywhere from 65% to 100%. [10] There is evidence to suggest that this procedure is preferable to using rectal AF alone. This procedure is notable for having decreased morbidity compared to other tissue interposition procedures. The procedure may result in postoperative dyspareunia and labial wound tissue; however, these side effects often disappear when sufficient time has passed and appropriate wound care has been administered. [10]

ii. Gracilis Muscle Flap (GMF) [10]

Studies have also concluded that the repair of a MF is typically a considerably easier procedure; however, this particular procedure is far more complicated and invasive [1]. Researchers have also found that the “GMF from the leg is used as a proximal pedicle and as an interposition graft between the rectum and the vagina. This is done after the fistula orifices that connect the rectum and the vagina are directly closed”. [10] This procedure is performed after the gracilis muscle has been harvested from the leg as a

proximal pedicle. Before carrying out this procedure, a diverting stoma is often inserted as a standard practice. [10] The gracilis muscle flap has been demonstrated to be beneficial in treating instances of refractory and recurrent RVFs. [10] Additionally, studies have found that this is “particularly true for RVFs brought on by CD and those that follow pelvic surgery”. Studies have also concluded that “a success rate of 33 percent to 100 percent has been reported in a review of 17 studies, including 106 patients, with a median follow-up of 21 months”. [10] Furthermore, studies have shown that an “increased risk of postoperative morbidity, including surgical tract site infection, thigh numbness, hematoma, and a prolonged loss of sexual function, are some of the downsides of this procedure”. [10]

ii. Levator Ani Muscle Interposition [10]

Studies have also concluded that the procedure to repair a Martius flap is typically a lot simpler than this one; nevertheless, this specific procedure is a lot more involved and intrusive. [1]. Studies have concluded that following the direct closure of the fistula orifices that correspond to the rectum and the vagina, the gracilis muscle is subsequently employed as an interposition graft between the leg and the pelvis. Following the removal of the gracilis muscle from the leg so that it may serve as a proximal pedicle, this procedure is carried out. Many individuals choose to have a diverting stoma implanted in their body prior to undergoing this procedure. [10] It has been proven that the gracilis muscle flap is effective in treating cases of RVFs that are both refractory and recurrent. [10] Additionally, studies have found that this is particularly true for RVFs that result from Crohn's disease as well as those that appear after pelvic surgery. In a review of 17 trials, including 106 patients and a median follow-up of 21 months, a success rate of 33 percent to 100 percent has been reported”. [10] The drawbacks of this procedure include an “increased risk of postoperative morbidity, including surgical tract site infection, thigh numbness, hematoma, and a prolonged loss in sexual function”. [10]

4. Abdominal Repair

Studies have also concluded that repairs to the abdomen may often be performed using either a procedure that is minimally invasive or one that is open. [10] Examples of abdominal repairs include “transanal colonic pull-through with delayed coloanal anastomosis following rectum resection and resection of the portion of the colon that includes the fistula”. [10] Studies have also shown that when a high RVF cannot be amenable to transperineal repair, particularly when the RVF occurs after LAR [10], repair of the abdomen is required. This is especially true when the RVF occurs after LAR. Studies have also shown that “FT excision with multi-layered closure of the rectum and the fistula should only be performed if the quality of the tissues around the fistula meets the following criteria: low fibrosis, good blood supply, absence of infection, and no symptoms of cancer recurrence. RRT may be necessary in situations where there is a high risk of many adhesions and a challenging pelvic dissection”. [10]

CONCLUSION

Studies have also shown that managing RVF can be quite complex and pose significant challenges due to various factors. Effective implementation necessitates the combined efforts of professionals from different disciplines, working together to collaborate, assess, and plan. Preventing, detecting, and treating issues early can help alleviate unnecessary patient suffering. Patients who are suspected to have fistulas should undergo evaluation and be referred to specialists as necessary. It is important to gather all relevant information, including specific details about previous surgeries. Thorough planning and active engagement with the necessary services are crucial for achieving effective treatment. Finally, an RVF can have a significant negative impact on mental well-being. Therefore, it is advisable to direct these patients to a mental health counselor.

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