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Original Research Paper

General Surgery

MODIFIED MARTIUS FLAP REPAIR IN AN IATROGENIC RECTOVAGINAL FISTULA

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ABSTRACT Modified Martius flap repair for iatrogenic rectovaginal fistula with no recurrence.Rectovaginal fistula is a complex and debilitating condition, can occur for a variety of reasons ,but frequently develops following obstetric injury. All repair techniques involve reestablishing a healthy ,well-vascularized rectovaginal septum, either through reconstruction with local tissue or tissue transfer via a pedicled flap. The Martius flap procedure is a surgical procedure used to treat low level rectovaginal fistulas in women due to obstretic trauma .Modified Martius technique is a safe procedure which offers good cosmetic and functional results , improving wound healing through neovascularization.

KEYWORDS : (RVF , Modified Martius flap)

INTRODUCTION

RVF formation results as a complication of an underlying disease, injury, or surgical event. (1) (2) .Obstretic related injury ,Crohn disease is the next most common cause , Anorectal sepsis, gastrointestinal (GI) infections such as diverticulitis, may be associated with fistula to the vagina. (3) Other causes include congenital fistula, mechanical necrosis , long-standing pessary use, and trauma.

Epidemiology

The frequency of rectovaginal fistula varies according to the cause. They are typically classified by etiology, location, and size, which affects the treatment and prognosis.

High fistulas - above the sphincter complex

Low fistulas - at or below the level of the pelvic floor.

Fistulas following traumatic obstetric injuries are almost always the low type.

Simple fistulas - in middle or lower portion of the rectovaginal septum, are small (<2.5 cm), due to local trauma or infection.

Complex fistulas - larger than 2.5 cm or in upper portion of the rectovaginal septum,due to neoplasia or IBD

Pathophysiology

Loss of wall integrity with ongoing inflammation can lead to erosion to the adjacent tissue or organ and establish an abnormal fistulous connection.

History

Clinically, the escape of stool or gas from the rectum to the vagina through the fistula gives the abnormal signs and symptoms of foul-smell vaginal discharge, dyspareunia, passing air, bleeding, and passage of frank stool.

Evaluation

To confirm the diagnosis, assess the extent and identify the underlying diagnosis. In addition to history and physical examination, workup should be complemented by imaging.

Treatment / Management

Treating RVF involves treating the underlying disease, the fistula itself, and any related complications. (8)(9)(10) Patients with small fistulas and minimal symptoms pursue bowel management. A small number of fistulas due to obstetric trauma may close spontaneously in the immediate (within 3 months) postpartum period.Immunomodulation for management of RVFs with Crohn disease

Surgical Approach

The goals of surgery are to preserve continence while achieving repair of the fistula. (11)

The proximity of the rectal wall to the vaginal wall with minimal tissue makes repairs difficult. The principles of successful repair are to remove the unhealthy fistula tissue, replace with healthy tissue that has a good blood supply to enhance healing.

Tissue Interposition Flaps technique employs the advantage of transposing healthy, well-vascularized tissue to buttress repair. (12)

The presence of active anorectal or anovaginal sepsis is a contraindication to definitive repair. We recommend delaying definitive surgery in such cases for at least 4 to 6 weeks until all sepsis and inflammation have resolved.

Prognosis

Patients can return to their regular routine a week or two, but it will probably be several months for complete healing to occur.

Complications

Fecal incontinence, vaginal, perineal, or anal irritation, abscess and fistula recurrence. (13)

MATERIAL AND METHODS

A prospective study conducted in SKNMC ,Pune over a period of 2 years with 10 patients with iatrogenic rectovaginal fistula

Inclusion criteria:

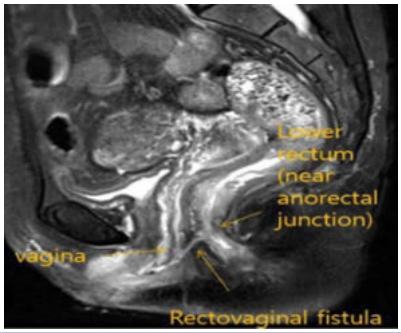
- Only iatrogenic induced low lying rectovaginal fistula.

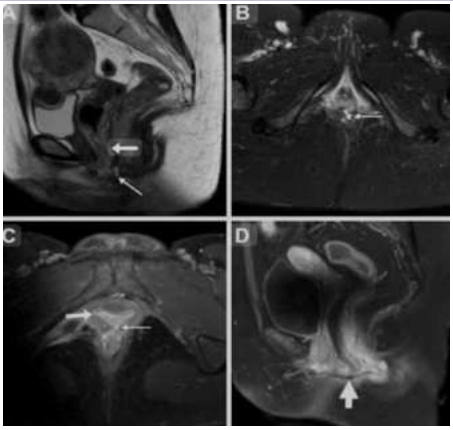
Exclusion criteria:

- Rectovaginal fistula due to other causes
- High lying rectovaginal fistula

Procedure:

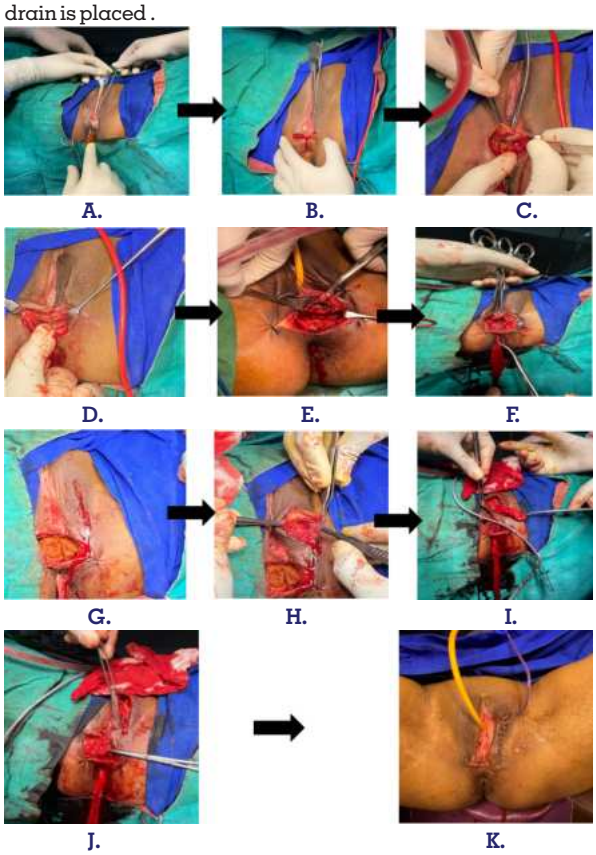
The patients underwent preoperative evaluation after taking written and informed consent. MRI / CT scan was done to confirm and look for size , location of the fistula .





Modified Martius Flap Repair

In high lithotomy position, urinary catheter is placed . The rectovaginal fistula is identified by a fistula probe. A 4-cm incision is made vertically over the left labium majus from the level of the mons pubis to the bottom of the labium to harvest pedicle. The fat-muscle flap is dissected in a lateral-to-medial direction, preserving its posterior aspect intact to maintain its blood supply. After that the fistula is circumcised through the vaginal wall with a margin of healthy tissue. Then a subcutaneous tunnel is made from the labium majus to the fistula. The fat-muscle flap is pulled through the tunnel . The rectal mucosa is sutured in one layer with 3-0 Vicryl in interrupted fashion. The flap is then sutured down to the rectal wall in interrupted fashion. So the rectal and vaginal walls are separated with a healthy, well-vascularized pedicle. The flap fills in the dead space and enhances granulation tissue. The vaginal mucosa is then closed over the pedicle . The labial incision is closed in layers with absorbable suture. Minivac drain is placed .



A) fistulous tract is probed . B) Transverse incision taken between the rectum and the vestibule . C)D)E) Dissection is continued till rectovaginal septum. F) Fistula dissected and the fistula opening of the rectum and vagina closed. G)H)I)J) Labial fat pad flap harvested over the inferior pedicle and placed between the closed vagina and rectum through a subcutaneous tunnel. Flap sutured K) Skin is closed in layers using absorbable ,drain placed.

Postoperative Course

Patient given injectable antibiotics till POD5 then switched to oral . Hygiene maintained . Stool softeners and high fibre diet were started, not ambulated for 6-7 days. Drain removed on POD7.

RESULTS

The study involved 10 patients , belonging to the age group 31-45 yrs

Table 1 : Basic Characteristics

AGE	NUMBER	PERCENTAGE
31-35	5	50%
36-40	3	30%
41-45	2	20%
Mean ± SD	35 ± 4.7	

From table-1 ,majority of the study subjects were belonging to age group 31-35yrs (50%) followed by 36-40yrs (30%) and 41-45yrs (20%).

Table 2 : Complications

SIDE EFFECTS	NUMBER	PERCENTAGE
Recurrence	0	0%
Dyspareunia	2	10%
Change in sexual function	1	5%

In present study ,there was negligible recurrence rate . Out of 10 subjects ,dyspareunia was present in 2 subjects (10%) , change in sexual function seen in 1 subject (5%).

DISCUSSION

Rectovaginal Fistula

Rectovaginal fistulas (RVFs) are defined as epithelialized communications between the rectum and vagina. They are uncommon, comprising approximately 5% of all anorectal fistulas, but present a significant challenge for both the patient and the surgeon. They have profound negative impact in quality of life from a social, psychological, and sexual point of view.

Etiology

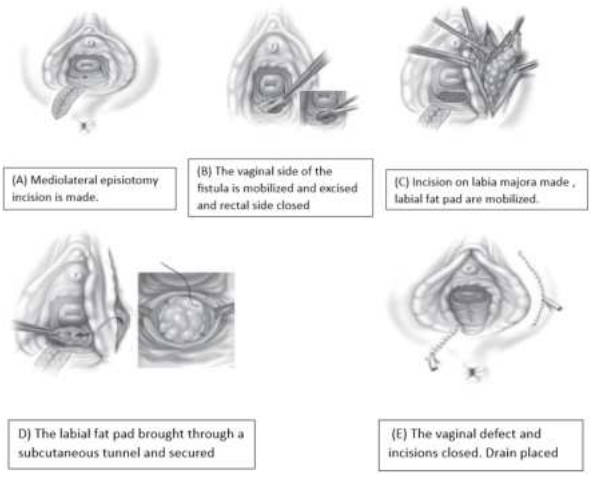
The causes of RVF are many, the most common being obstetric trauma. Approximately 2% of all vaginal deliveries are associated with advanced perineal injury, and 3% of these patients subsequently developed RVFs , associated with a prolonged second stage of labor resulting in ischemic necrosis of the rectovaginal septum. This is particularly common in developing countries where there is a lack of good obstetric care. Other risk factors shoulder dystocia in the fetus, high forceps deliveries, 3rd and 5th-degree tears and midline episiotomy. Worldwide, an RVF develops from every 1000 vaginal births.

Surgery

The bulbocavernosus flap, eponymously described by Martius in 1928,42 was originally used for the repair of vesicovaginal fistula. The Martius flap, which involves harvesting of the bulbocavernosus muscle with the overlying fat in the labia majora, is based on the perineal branch of the pudendal artery.

Since the description by Martius, Elkins et al. have shown that the bulbocavernosus muscle itself does not need to be included in the graft because the labial adipose tissue has an excellent blood supply, thus decreasing the morbidity of using the bulbocavernosus muscle and reducing the operative time.

(14)(15) Modifications in surgical technique have been outlined by Hoskins et al., (16) who used a full-thickness island graft from the labia majora, and Symmonds and Hill, (17) who used a full-thickness graft from the labia minora and majora. Boronow (17) reported a success rate of 84% in 25 women with RVFs. McNevin et al. reported 16 patients who underwent Martius flap for complex RVFs.



Dyspareunia, infrequently reported as an outcome variable, is a potential concern with the procedure. An additional concern is the patient's self-perception of the appearance of the graft site in addition to decreased sensation or numbness of the graft site.

CONCLUSION

The modified Martius procedure is a feasible adjuvant technique for RVF with excellent postoperative outcomes. It is the good alternative for low rectovaginal fistula with low or negligible recurrence rate.

REFERENCES

1. Zheng Y, Zhang N, Lu W, Zhang L, Gu S, Zhang Y, Yi X, Hua K. Rectovaginal fistula following surgery for deep infiltrating endometriosis: Does lesion size matter? J Int Med Res. 2018 Feb;46(2):852-864. [PMC free article] [PubMed]
2. Thubert T, Cardaillac C, Fritel X, Winer N, Dochez V. [Definition, epidemiology and risk factors of obstetric anal sphincter injuries: CNGOF Perineal Prevention and Protection in Obstetrics Guidelines]. Gynecol Obstet Fertil Senol. 2018 Dec;46(12):913-921. [PubMed]
3. Bhama AR, Schlussel AT. Evaluation and Management of Rectovaginal Fistulas. Dis Colon Rectum. 2018 Jan;61(1):21-24. [PubMed]
4. Mocumbi S, Hanson C, Högberg U, Boene H, von Dadelszen P, Bergström A, Munguambe K, Sevene E., CLIP working group. Obstetric fistulae in southern Mozambique: incidence, obstetric characteristics and treatment. Reprod Health. 2017 Nov 10;14(1):147. [PMC free article] [PubMed]
5. Bahadursingh AM, Longo WE. Colovaginal fistulas. Etiology and management. J Reprod Med. 2003 Jul;48(7):489-95. [PubMed]
6. Sheedy SP, Bruining DH, Dozois EJ, Faubion WA, Fletcher JG. MR Imaging of Perianal Crohn Disease. Radiology. 2017 Mar;282(3):628-645. [PubMed]
7. Iwamuro M, Hasegawa K, Hanayama Y, Kataoka H, Tanaka T, Kondo Y, Otsuka F. Enterovaginal and colovesical fistulas as late complications of pelvic radiotherapy. J Gen Fam Med. 2018 Sep;19(5):166-169. [PMC free article] [PubMed]
8. Beksac K, Tanacan A, Ozgul N, Beksac MS. Treatment of Rectovaginal Fistula Using Sphincteroplasty and Fistulectomy. Obstet Gynecol Int. 2018;2018:5298214. [PMC free article] [PubMed]
9. Karp NE, Kobernik EK, Berger MB, Low CM, Fenner DE. Do the Surgical Outcomes of Rectovaginal Fistula Repairs Differ for Obstetric and Nonobstetric Fistulas? A Retrospective Cohort Study. Female Pelvic Med Reconstr Surg. 2019 Jan/Feb;25(1):36-40. [PubMed]
10. Abu Gazala M, Wexner SD. Management of rectovaginal fistulas and patient outcome. Expert Rev Gastroenterol Hepatol. 2017 May;11(5):461-471. [PubMed]
11. Ishimaru T, Kawashima H, Tainaka T, Suzuki K, Takami S, Kakihara T, Katoh R, Aoyama T, Uchida H, Iwanaka T. Laparoscopically Assisted Anorectoplasty for Intermediate-Type Imperforate Anus: Comparison of Surgical Outcomes with the Sacroperineal Approach. J Laparoendosc Adv Surg Tech A. 2020 Mar;30(3):350-354. [PubMed]
12. Queralto M, Badiou W, Bonnaud G, Abramowitz L, Tanguy Le Gac Y, Monrozies X. [Vaginal flap for rectovaginal fistulae in Crohn's disease]. Gynecol Obstet Fertil. 2012 Mar;40(3):143-7. [PubMed]
13. Butts E, Padala SA, Vakiti A, Kota V. Rectovaginal Fistula as a Complication of Fecal Management System. J Investig Med High Impact Case Rep. 2019 Jan-Dec;7:2324709619869368. [PMC free article] [PubMed]
14. Elkins TE, DeLancey JO, McGuire EJ. The use of modified Martius graft as an adjunctive technique in vesicovaginal and rectovaginal fistula repair. Obstet Gynecol. 1990;75(4):727-733.
15. Pinedo G, Phillips R. Labial fat pad grafts (modified Martius graft) in complex perianal fistulae. Ann R Coll Surg Engl. 1998;80(6):410-412.
16. Hoskins WJ, Park RC, Long R, Artman LE, McMahon EB. Repair of urinary tract fistulae with bulbocavernosus myocutaneous flaps. Obstet Gynecol. 1984;63(4):588-593.
17. Symmonds RE, Hill LM. Loss of the urethra: a report on 50 patients. Am J Obstet Gynecol. 1978;130(2):130-138.