



"MANAGEMENT OF ANO-VAGINAL FISTULA (AVF) OF OBSTETRIC ORIGIN: A CASE STUDY AND SURGICAL INTERVENTION

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ABSTRACT:

Anovaginal fistulas (AVFs) and Low rectovaginal fistulas (RVFs) most frequently result from obstetric trauma, especially in resource-limited countries where prolonged obstructed labor can lead to pressure necrosis of the rectovaginal septum. Childbirth (OBSTETRIC) trauma is the cause of RVF in 88%. The patient suffers from spontaneous flatus, mucus, and/or fecal leakage, eventually recurrent vaginitis. Diagnosis of RVF is usually based on a Thorough history of examined patient. Colonoscopy examination is recommended for each patient with AVF. C.T. Scan or Magnetic Resonance Imaging (M.R.I.) of the Pelvis is indicated if debatable results of examinations and ambiguous history are taken. The Endorectal ultrasound and Anorectal Manometry help us to check the functional status of the anal sphincter. When RVF is persistent or recurrent, the surrounding tissue is always scarred or damaged, so the interposition of a healthy and well-perfused tissue is an appropriate approach to fistula management. The Endorectal Advancement Flap is the most frequent procedure used to treat AVFs with a success rate with big differences. If anal sphincter reconstruction is added, the result of an operation is better. The Modified Martius procedure using adipose tissue from the labia major places well-vascularized pedicle in the place of the RVF.

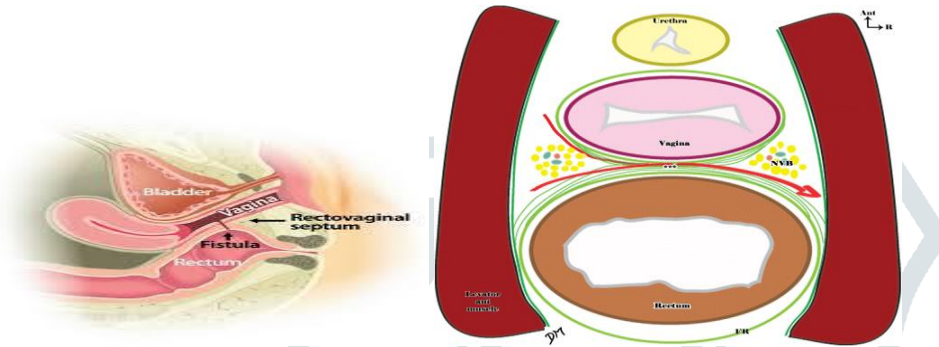
KEYWORDS: *fistula, rectovaginal, fistulotomy, , advancement flap, Martius procedure, obstetric*

❖ HISTORY OF “MODIFIED MARTIUS GRAFT” :

Heinrich Martius in 1928 had described the way, how to treat vesicovaginal fistula with the help of an interposition flap from Adipose tissue of the vagina and Bulbocavernosus muscle. The flap was implanted to Perivesical space and Front vaginal wall (12). It was several times modified. Elkins et al. proved an excellent blood supply of fatty tissue of the vagina and good firmness and consistency..

Thanks to the arrangement of its connective tissue! That is why, the Transposition of adipose tissue of the vagina with Nutrition Vessels to the rectovaginal septum, without bulbocavernosus muscle, was the last modification of this procedure. It's called a **Modified Martius Graft**.

RELEVANT ANATOMY:



The rectovaginal septum is the thin septum separating the anterior rectal wall and the posterior vaginal wall. The caudal portion of the septum is the perineal body. The anal sphincters are located in the posterior portion of the perineal body. RVFS may vary greatly in size, but most are less than 2 cm in diameter. Small-sized fistulas are less than 0.5 cm in diameter, medium-sized fistulas are 0.5-2.5 cm, and large-sized fistulas exceed 2.5 cm.

ETIOLOGY

1)Traumatic:

- Obstetrical trauma. (commonest)
- Surgical trauma.
- Direct trauma.

2)Inflammatory:

- Pelvic abscess.
- TB.
- crohn's disease.

3)Neoplastic post-irradiation.

4)Clinical:

A few patients are asymptomatic. Most patients report passage of flatus or stool through the vagina. Patients may also experience vaginitis or cystitis. At times, a foul-smelling vaginal discharge develops, but frank stool per vagina usually occurs only when the patient has diarrhea. The clinical picture may include fecal incontinence due to associated sphincter damage.

Patient Information:

- **Name:** Mrs. X.Y.
- **Age:** 28 years
- **Sex:** Female
- **Occupation:** Housewife
- **Presenting Complaint:** Passage of stool and flatus through the vagina following 10 days after childbirth, associated with foul-smelling discharge and discomfort.

History of Present Illness: Mrs. X.Y. presented to the gynecology clinic with complaints of fecal incontinence and passage of gas through the vagina since giving birth vaginally three months ago. She reported experiencing perineal tearing during delivery, which required suturing. Since then, she had been experiencing persistent leakage of stool and gas, along with foul-smelling discharge from the vagina. These symptoms were causing significant distress and impacting her daily life.

Past Obstetric History: Mrs. X.Y.'s pregnancy was uneventful until delivery, during which she experienced a second-degree perineal tear due to prolonged and difficult labor. The tear was repaired immediately postpartum.

Physical Examination:

- **General Examination:** The patient appeared anxious but otherwise in good general health.
- **Perineal Examination:** Inspection revealed a small opening near the posterior vaginal wall, approximately 2 cm in diameter, through which fecal matter and gas were intermittently discharged. The perineal scar from the previous tear was visible and appeared well-healed. There was surrounding erythema and mild tenderness.

Investigations:

1. **Digital Rectal Examination:** No palpable rectal masses or strictures.
2. **Proctoscopy:** Normal rectal mucosa, no evidence of inflammatory bowel disease or malignancy.
3. **MRI Pelvis:** Confirmed the presence of an anovaginal fistula, originating from the rectum and terminating in the vaginal wall, consistent with obstetric trauma.

Fig. 1 Clinical examination of the Ano-vaginal fistula

**TREATMENT:**

1. **Medical Management:** Initiation of broad-spectrum antibiotics to control infection and reduce inflammation.
2. **Surgical Intervention:** Surgical repair of the fistula was planned. Given the obstetric etiology and the presence of scar tissue, a transvaginal approach was considered appropriate.
3. **Preoperative Counseling:** Detailed discussion with the patient regarding the surgical procedure, potential risks, and expected outcomes. Emotional support provided due to the distressing nature of the condition.
4. **Postoperative Care:** Antibiotics and analgesics administered as needed. Emphasis on perineal hygiene and wound care to prevent infection and promote healing.

Follow-up: Mrs. X.Y. underwent transvaginal repair of the fistula without complications. Postoperative recovery was satisfactory, with gradual improvement in symptoms. She was followed up regularly in the outpatient clinic to monitor healing and address any concerns.

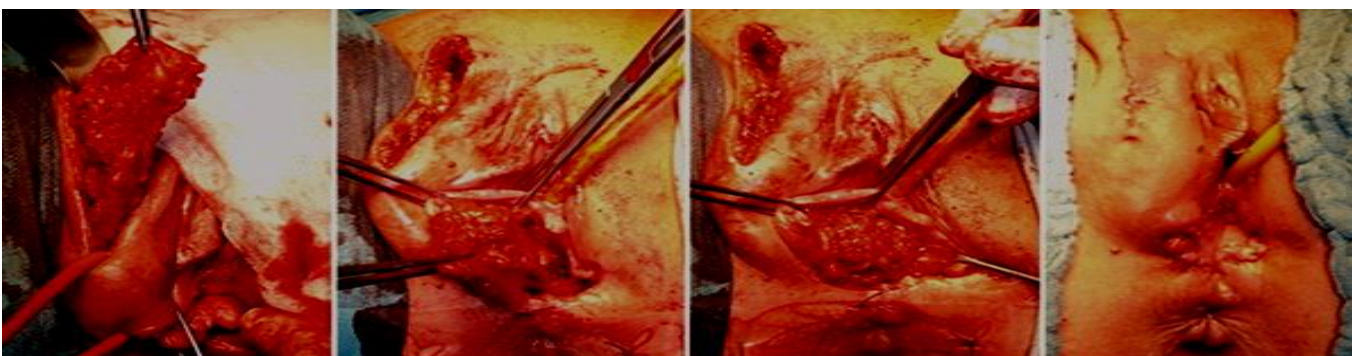
Preoperative Preparation: -Treat vulvitis. Cover skin of the vulva, and inner thighs by a thick layer of Vaseline, zinc oxide ointment or any bland ointment, to prevent maceration of the skin by the continuous discharge of urine. Renal function tests, Culture of urine, if pathogenic organisms are found, patient is given urinary antiseptics until urine is sterile. **Preoperative care** :-Improve the patient's general condition- Nutrition, Infection, Dermatitis, Urine acidification, Psyche. Contractures should be treated before surgery if possible. Encourage liberal clear fluid intake until about 4hrs before surgery. Bowel preparation should include enema the night before.

TECHNIQUE:

The Modified Martius technique, also known as the modified Martius flap or Martius graft, is a surgical procedure used primarily for the repair of complex or recurrent anovaginal fistulas, particularly those resulting from obstetric trauma or other causes where conventional repair techniques may be inadequate. The procedure involves the use of tissue from the labia majora to reinforce the repair site and promote healing.

Procedure:

1. **Patient Preparation:** The patient is placed in the lithotomy position under general or regional anesthesia.
2. **Exposure:** The surgical area, including the perineum and labia majora, is cleansed and draped in a sterile fashion.
3. **Flap Harvesting:**
 - An incision is made along the labial fold of the unaffected side, usually the right side, extending from the labial commissure towards the pubic symphysis.
 - Dissection is carried out to elevate a triangular-shaped flap of tissue, including skin, subcutaneous fat, and part of the labial fascia, while preserving the blood supply from the labial artery.
4. **Tunnel Creation:** A tunnel is created between the labial flap and the fistula site, often through a separate perineal incision, to allow passage of the flap to the fistula defect.
5. **Fistula Repair:**
 - The fistula tract is dissected and excised, ensuring complete removal.
 - Closure of the rectal and vaginal defects is performed using absorbable sutures, providing a tension-free, watertight closure. Colostomy was performed before the treatment of fistula
6. **Flap Transposition:** The harvested labial flap is transposed into the created tunnel and positioned over the repair site to reinforce the closure and promote tissue healing. The flap is sutured in place, ensuring adequate coverage of the repair site.
7. **Closure:** The surgical incisions are closed layer by layer with absorbable sutures. Hemostasis is ensured, and a dressing may be applied to the perineal area.



POSTOPERATIVE CARE:

1. Sitz baths were instituted and the patient remained in hospital for 2 days on sips of water by mouth and intravenous antibiotics. On the third day she was fed a normal diet, had a bowel movement, and discharged with One week of oral antibiotics, and a stool softener. No recurrence or complications were observed at the 4-month follow-up. At 6 months follow-up she remained well with a good anal tone, and no signs of wound infection, haematoma, or breakdown of the repair. She had a perfect cleveland clinic continence score (CCIS) of 2/20 i.e., solids (never) 0, liquids (never) 0, flatus (sometimes) 2, use of pad (never) 0, lifestyle alteration (never) 0. Long-term follow-up was planned.

DISCUSSION:

The AVF(RVF) is quite a rare complication of various diseases, the most often because of rectovaginal septum birth trauma (16). Surgery can resolve this frustrating disease. Unfortunately, the success rate after initial surgery for RVF is only 60–88.65 % . It improves with each next surgical procedure. The Endorectal Advancement Flap (EAF) is the most common first-line operative treatment. Its success rate is variable and the healing of RVF comes only at about 65 % . If the treatment by EAF or other treatment options failed and the Transabdominal approach was contraindicated, Flap with Interposed Tissue would be an excellent next treatment modality. It's for example Gracilis Muscle Transposition or Martius Flap. There are some postoperative problems after bulbocavernosus or gracilis muscle transposition e.g., dyspareunia and proctalgia (20). Especially dyspareunia is the most frequent complication resulting from the scarred tissue of the vagina . Its rate is up to 25 % of all the postoperative cases. That is why a Modified Martius graft is preferred, as only fatty tissue of labia majora is used for repairing rectovaginal septum defects. It is necessary sometimes to create a stoma, especially in case of recurrence.. We must consider the age, nutrition state, comorbidity, the vitality of dissected tissue, previous surgery, the height of fi stula, its etiology and rectovaginal microbiota

Conclusion: Anovaginal fistula resulting from obstetric trauma, such as perineal tears during childbirth, is a distressing condition that requires prompt diagnosis and appropriate management. Surgical repair tailored to the individual patient's anatomy and extent of injury is essential for achieving optimal outcomes and restoring continence and quality of life. Emphasis on comprehensive care, including preoperative counseling and postoperative support, is crucial for addressing the physical and emotional aspects of this condition.

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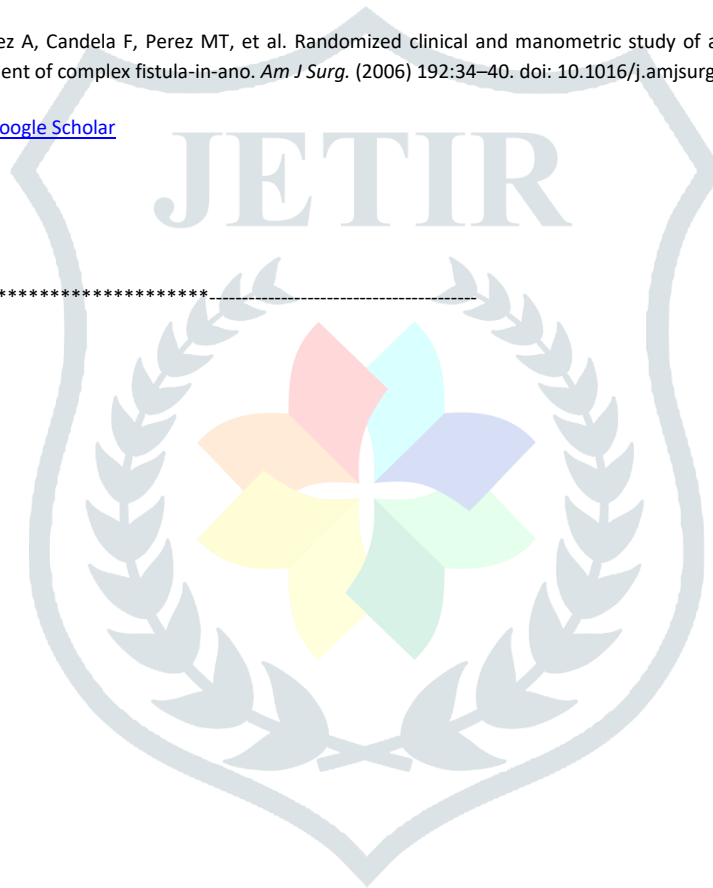
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