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Martius fat pad flap procedure for management of obstetric rectovaginal fistula: A case report

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ABSTRACT

Obstetric trauma is a risk factor for rectovaginal fistula, and it is a challenge for both patients and surgeons. In this case report, we describe the surgical technique of the Martius fat pad flap for repair of a rectovaginal fistula. The patient was a 30-year-old woman, para 1, with a previous spontaneous vertex vaginal delivery of a 2500-g male baby at 37 weeks of gestation. There was a history of arrest of descent, and the patient had a third-degree perineal laceration that was repaired in the operating room. Twelve days after delivery, the patient complained about fecal vaginal discharge and was diagnosed with a rectovaginal fistula. Physical examination revealed a rectovaginal fistula with a 2 cm diameter and located 1 cm from the hymen. The tone of the external anal sphincter was within normal limits, which was confirmed with transperineal ultrasound scan. The repair was done 3 months after the previous repair in order to allow for the restoration of tissue integrity and the complete healing of the previous wound. The rectovaginal fistula was repaired with a Martius fat pad flap in a transperineal approach. After 60 days of follow-up, the wound involving the labia majora and the fistula were healed completely.

1. Introduction

Rectovaginal fistulas (RVFs) are abnormal epithelial connections between the rectum and vagina, leading to the passage of rectum content into the vagina, which causes both physiological and psychological suffering [1]. Estimates of the incidence of obstetric RVF range from 0.2 to 4 per 1000 deliveries [2]. Fistulas are some of the most challenging conditions that a reconstructive pelvic surgeon will need to correct. To harvest and place a Martius flap is a relatively simple surgical technique that has favourable cosmetic outcomes and low morbidity [3]. The present case report describes the repair of an obstetric fistula rectovaginal with a Martius flap, using the labium major fat pad in a transperineal approach.

2. Case Presentation

A 30-year-old woman, para 1, attended the urogynecology outpatient clinic with a chief complaint of fecal vaginal discharge 12 days after delivery. The patient had a history of spontaneous vertex vaginal delivery of a 2500-g male baby (intrauterine fetal death due to hypoxia during prolonged labor) at 37 weeks of gestation. There was a history of arrest of descent, and the patient had a third-degree perineal laceration that was repaired in the operating room by a local obstetrician using a 3–0 delayed absorbable simple interrupted suture, and the external anal sphincter was repaired using a 2–0 delayed absorbable suture with an end-to-end technique. Then the vaginal submucosa, mucosa, and perineal skin layer were done using a 2–0 delayed absorbable suture in a running fashion. The patient was discharged 2 days after delivery and given broad-spectrum antibiotics. Eight days after delivery, the patient was examined and said that the wound was in good condition with no complaints or complications from the repair. However, 12 days after the delivery and repair procedure, the patient complained of fecal vaginal discharge and was diagnosed with a rectovaginal fistula. She was then referred to the urogynecology outpatient clinic.

Examination revealed a rectovaginal fistula with a diameter of 2 cm with a distance of 1 cm from the hymen (Fig. 1). The tone of the

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sphincter was within normal limits, and there was no other mass. Transperineal ultrasound identified the anal sphincter, and there was no suspicion of a defect. The repair was done 3 months after the previous repair, to allow for complete healing of the previous wound. The Martius flap was chosen for this patient's treatment, using the labium major fat pad and a transperineal approach. Prophylactic antibiotics (2 g cefazolin) given 30 min before the incision.

A transverse incision was made in the perineum above the sphincter (Fig. 2). Tissue was dissected around the fistula tract scar from the posterior vaginal wall to the anterior rectal wall. The rectal mucosal defect was closed in a tension-free manner using an interrupted 3.0 delayed absorbable suture. The muscularis of the rectum was closed in a second layer to reinforce the repair with a 3.0 delayed suture in an interrupted suture.

An incision was made over the right labia majora, and dissection was used to mobilize the fat pad. A broad fat pad base with intact blood supply from the branch of the internal pudendal artery was transferred from the tunnel to allow for passage of the flap to the fistula site. Fixation of the flap was done with 2.0 delayed absorbable sutures around the perirectal tissue overlying the second layer.

For postoperative treatment, we gave the patient a laxative regimen to prevent stool impaction and educated the patient about vulval vaginal hygiene. The patient defecated normally three days after surgery and was discharged from the ward one day later. Twelve days after the second surgery, the patient came for follow-up and was found to have wound dehiscence in the right labia majora. The fistula repair was in good condition; 60 days after the repair, there was no complaint about fecal vaginal discharge or fecal incontinence. The labia majora wound had also healed completely.

3. Discussion

Birth injury is reported to be the most common cause of RVF, accounting for 60%–80% of cases. It may result from a third- or fourth-degree perineal laceration during vaginal delivery [4]. Given their location, rectal mucosal tears are susceptible to infection and, consequently, wound breakdown can lead to fistula formation. A RVF leads to fecal passage through the vagina [5,6].

Surgeons should perform a complete examination of the vagina, perineum, and anus before repair of an RVF. Prior incisions, lacerations, external openings, radiation changes, and the width of the perineal body are noted. A digital rectal examination is performed to localize the tract, rule out malignancy, evaluate the strength and function of the anal sphincter muscles, and identify any obvious defects. A vaginal examination is performed to rule out malignancy, assess for ongoing inflammation, and identify the fistula tract before repair of RVF [2].

All patients should have an evaluation of the anal sphincter muscles prior to surgery, as up to 40% of women have evidence of occult sphincter injury after vaginal delivery. Evaluation should provide a thorough evaluation of sphincter defects, fistula anatomy, and any other pelvic abnormalities [2]. Endoanal ultrasound is still considered the gold standard for visualizing the anal sphincter. Moreover, the transperineal ultrasound scan detected a 7.9% occult sphincter [7]. Advantages of this modality include its wide applicability and acceptability by patients because of its painless and non-intrusive nature [8].

Our procedure used a transperineal approach and Martius fat pad flap. We used this surgerical technique because the fistula was in the lower third of the vagina and the diameter was 2 cm. Studies that have focused on repair technique have found differences in repair failure; however, there is no consensus in the literature on the best technique for

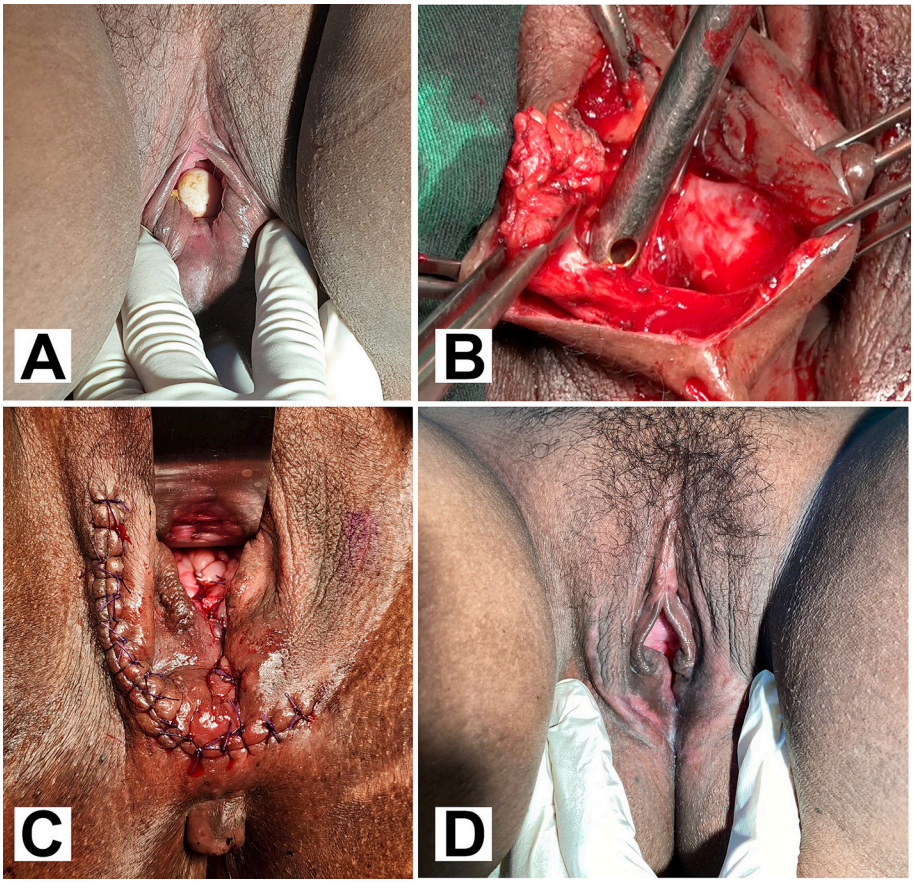

Fig. 1. (A) Rectovaginal fistula examination. (B) Fat pad dissection from the right labia majora. (C) Labia majora and perineum after repair. (D) Rectovaginal fistula and wound evaluation 60 days after repair.

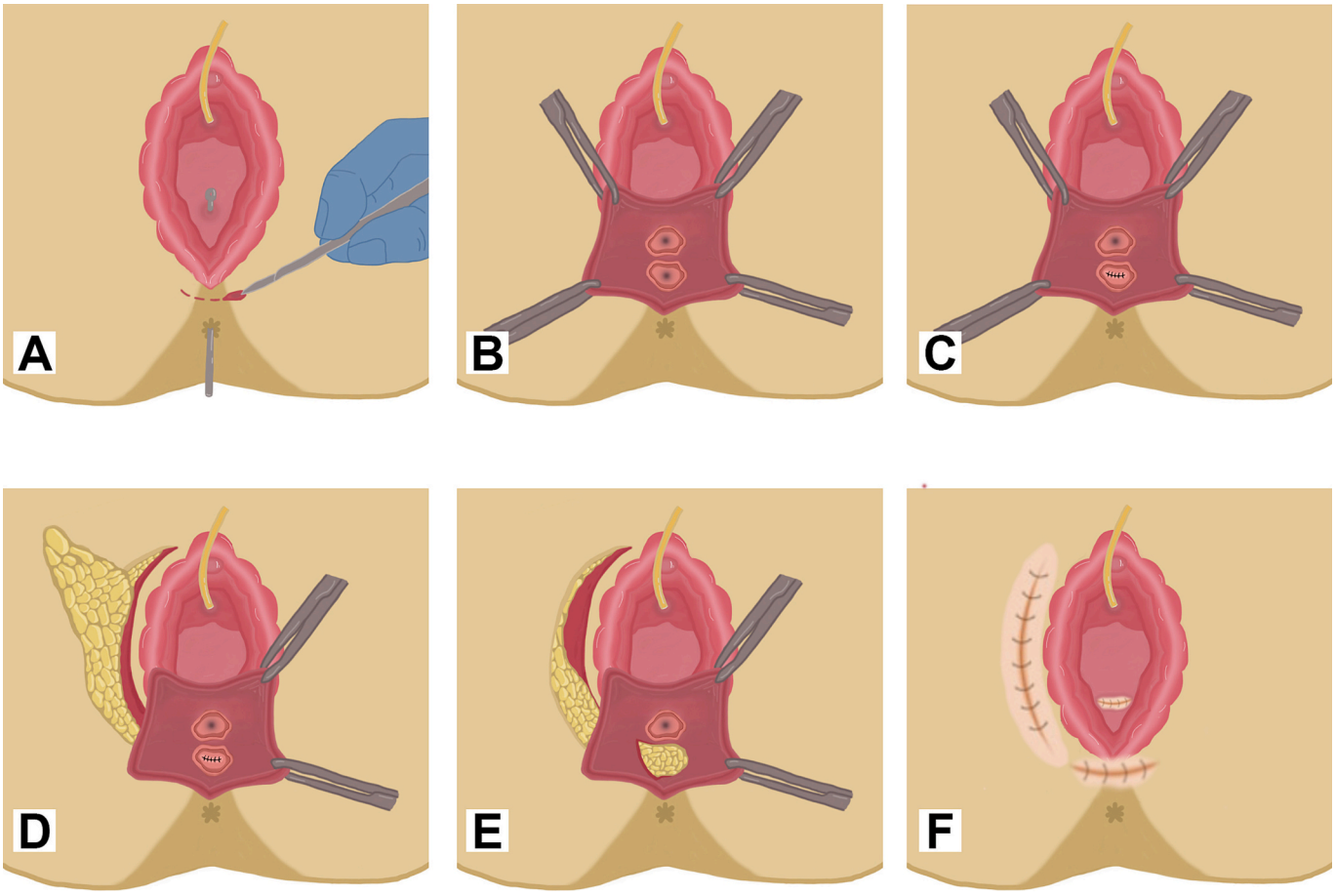

Fig. 2. (A) Transverse incision made in the perineum above the sphincter. (B) Dissection between the anterior rectal wall and the posterior vaginal wall. (C) The rectal mucosal defect was closed in two layers. (D) Incision at the right labia majora and dissection to mobilize the fat pad. (E) A broad fat pad base was transferred from the tunnel and placed over the second layer. (F) Closing the vaginal epithelium, perineal, and labia majora.

RVF repair [9]. The perineal approach is preferred in cases of RVF below the sphincter complex. Repair options include a flap repair of the anterior rectum and a mucosal flap with or without anal sphincterplasty [10]. The Martius fat pad flap uses a vascularized adipose tissue flap from the labium majus, which divides the vaginal and rectal layers and improves wound healing by enhancing blood supply through neovascularization [11]. Overall success rates reported in the literature for the interposition of a Martius flap as an adjunct procedure in the surgical management of RVF are 65–100% [12].

A successful repair was determined by several factors. Features of the fistula, age, BMI, lifestyle, comorbidities, and history of previous repair directly affected the outcome [1]. Postoperative treatment after surgery requires proper perineal care with constipation and straining avoidance, as well as perineal hygiene, to avoid incisional complications and wound breakdown.

4. Conclusion

The perineal approach is preferred in cases of low RVF, with or without anal sphincterplasty. Martius fat pad flap for RVF repair is a simple procedure that improves wound healing through neovascularization with good postoperative results and minimal recovery time. Follow-up perineal care and preventing stool impaction are important to avoid wound complications.

Contributors

Tri Hastono Setyo Hadi was responsible for project development, clinical follow-up, data collection, and manuscript writing.

Gatut Hardianto contributed to drafting the manuscript and revising the article.

Eighty Mardiyan Kurniawati contributed to the conception of the case report and revising the article.

Harry Parathon contributed to revising the article and drafting the article.

M. Dimas Abdi Putra contributed to patient care and interpreting the data.

Riska Wahyuningtyas contributed to drafting the manuscript and revising the article.

Rizqy Rahmatyah contributed to writing the manuscript.

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Conflict of interest statement

The authors declare that there is no conflict of interest regarding the publication of this case report.

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