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Case Series

Case series of rectovaginal fistula: clinical analysis and management strategies

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ABSTRACT

Rectovaginal fistula (RVF) is a rare but serious obstetric complication with significant physical and emotional consequences. This retrospective review analyzed three cases of RVF that occurred between June 2023 and June 2024 to identify clinical patterns and propose improvements in management. All cases involved primigravid women who experienced either prolonged second-stage labor or rapid expulsive efforts; instrumental deliveries and episiotomies were performed in two instances. Primary repairs utilized vicryl and vicryl rapide sutures; however, two patients developed persistent fistulae necessitating colorectal referral and further surgical intervention, including temporary stoma formation. Delayed diagnosis and inconsistent post-operative care were identified as key issues. The findings highlight the importance of comprehensive perineal assessment, standardized repair techniques, and early multidisciplinary involvement. To prevent and manage RVF more effectively, the study recommends enhanced clinician training, updated local guidelines, and structured postnatal follow-up for early detection of complications.

Keywords: Rectovaginal fistula, Obstetric injury, Perineal trauma, Anal sphincter repair, Multidisciplinary management

INTRODUCTION

Rectovaginal fistula (RVF) is a distressing and uncommon complication in obstetrics, characterized by an abnormal connection between the rectum and vagina, leading to involuntary passage of fecal matter through the vaginal canal. Although rare, with an estimated incidence of 0.163 per 1,000 births in developed countries, RVF poses significant challenges to patient well-being, often resulting in physical discomfort, social embarrassment, and psychological distress.[1]

The etiology of RVF is multifactorial, with prolonged labor, instrumental deliveries, third- and fourth-degree perineal tears, and inadequate primary repairs being recognized as major contributing factors. Additionally, infections, poor wound healing, and underlying maternal comorbidities such as diabetes mellitus may further predispose women to the development of RVF. Given its impact on a woman's quality of life, timely diagnosis and intervention are crucial.

From a medicolegal standpoint, there has been a documented rise in litigation cases associated with obstetric anal sphincter injuries (OASIS). Many claims stem from failure to identify and appropriately repair perineal trauma, which may subsequently lead to complications such as RVF.[2] Current guidelines emphasize the importance of accurate perineal assessment, optimal surgical techniques, and post-operative care to minimize the risk of fistula formation.[3]

This review analyzes three cases of RVF that occurred within a single maternity unit between June 2023 and June 2024. Through a detailed retrospective examination, we aim to identify shared clinical patterns, contributing factors, and areas for improvement in the prevention, early recognition, and management of RVF. The ultimate goal is to enhance clinical protocols and ensure that high-risk patients receive timely, multidisciplinary intervention to mitigate long-term morbidity.

CASE SERIES

Case 1

Patient demographics: Age of the patient was 30 years.

Gestation: 40+2 weeks

BMI: Normal range

Delivery mode: Normal vaginal delivery.

Birth weight: 3432 gm

Perineal injury: Buttonhole tear.

Clinical course: The patient experienced a precipitated labor due to hyperstimulation, requiring Terbutaline administration. The second stage lasted only 4 minutes. A buttonhole tear was identified during the perineal assessment, and it was inappropriately repaired by a midwife under supervision from an SPR.

The patient was discharged with perineal care instructions and was scheduled for follow-up reviews. On day 9 postnatal, she self-referred via the triage service, reporting fecal passage per vagina for two days. A midwife assessment prompted an urgent medical review. An MRI scan was initially inconclusive, but a repeat MRI with contrast confirmed a RVF. The case was escalated to a consultant, and she was transferred to RVI for surgery. A stoma was formed, and she was discharged with ongoing management by a stoma nurse team (Figure 1).

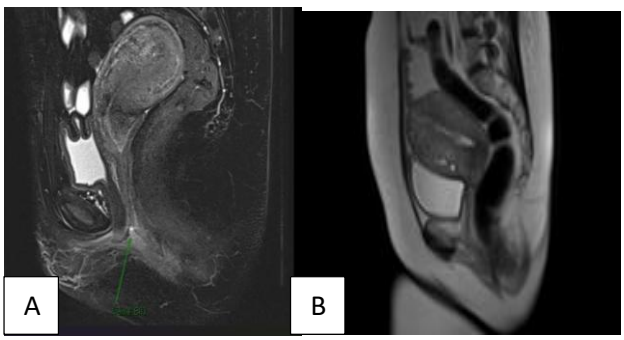

Figure 1 (A and B): Small calibre fluid-filled fistulous tract between posterior lower vagina and anterior anorectal junction measuring 2 mm across and 14 mm in length.

Case 2

Patient demographics: Age of patient 28 years.

Gestation: 41+1 weeks

BMI: 25-29 kg/m^2

Delivery mode: Instrumental delivery for second-stage delay.

Birth weight: 4230 gm

Perineal injury: Fourth-degree tear.

Clinical course: This primigravida patient underwent an induction of labor for post-dates. The second stage lasted 5 hours and 37 minutes, with a decision-to-delivery interval of 2 hours and 25 minutes. A right medio-lateral episiotomy was performed with episcissors by a specialist registrar. During perineal assessment, a fourth-degree tear was identified and repaired by a consultant using PDS and vicryl rapide for skin closure.

The patient was discharged with standard postnatal care, antibiotics, and laxatives. However, on day 20, she presented with fecal leakage per vagina. Despite giving a strong clinical history, she declined a vaginal examination and was advised to return if symptoms persisted.

Follow-up calls from the hospital indicated no ongoing symptoms. However, during her 5-week postnatal review, she reported renewed fecal leakage per vagina, and a speculum examination confirmed a possible fistula. She was referred to the colorectal team and scheduled for MRI.

The patient was managed conservatively, with regular tertiary hospital follow-ups, and has since experienced no further symptoms or incontinence. The decision was made to allow spontaneous healing, and she was later discharged from NCIC care.

Case 3

Patient demographics: Age of patient 21 years.

Gestation: 40+1 weeks

BMI: 25-29 kg/m^2

Delivery mode: Instrumental delivery for second-stage delay

Birth weight: 3432g

Perineal injury: Buttonhole tear

Clinical course: This patient had spontaneous rupture of membranes, labor augmentation, and maternal pyrexia in

labor. The second stage lasted 4 hours and 49 min, with a decision-to-delivery interval of 1 hour and 40 min. A right medio-lateral episiotomy performed using Episcissors.

During perineal assessment, a buttonhole tear was identified, prompting consultant review and detailed repair using vicryl and vicryl rapide. Post-procedure rectal and vaginal examinations confirmed repair integrity. The patient was discharged with laxatives, antibiotics, and a self-retaining catheter.

On day 9 postnatal, she self-referred with concerns of fecal passage per vagina. A repeat MRI confirmed a RVF, and she was transferred to RVI for surgery. A stoma was formed, and she was discharged home with ongoing stoma management (Table 2).

Table 1: Comparative analysis of 3 clinical cases.

Case no.	Age (in years)	Gestation	Delivery mode	Birth wt.	Perineal injury	Repair method	Postnatal symptoms	Imaging findings	Management	Outcome
1	30	40+2	Normal vaginal	3432 gm	Buttonhole tear	Vicryl rapide	Faecal leakage at day 5	MRI confirmed RVF	Surgical repair, stoma	Ongoing management
2	28	41+1	Instru-mental	4230 gm	4th-degree tear	PDS, vicryl	Small intermittent leakage	MRI inconclusive	Conservative management	No further symptoms
3	21	40+1	Instru-mental	3432 gm	Buttonhole tear	Vicryl, vicryl rapide	Faecal leakage at day 9	MRI confirmed RVF	Surgical repair, stoma	Ongoing management

DISCUSSION

RVFs are distressing complications that significantly impact a woman's quality of life, often leading to social isolation, infections, and psychological distress. This review synthesizes the findings from various case series and reports to provide insights into the etiology, management strategies, and outcomes of RVFs across different clinical contexts.

Etiology and risk factors

RVFs can arise from obstetric trauma, surgical complications, radiation therapy, infections, or inflammatory conditions. The majority of cases in obstetric settings occur due to prolonged second-stage labor, instrumental deliveries, or undiagnosed perineal trauma. The thematic review cases predominantly involved prolonged labor and forceps-assisted vaginal deliveries. Studies such as those by Shaaban et al and Weledji et al also emphasize the role of vacuum-assisted and forceps deliveries as major risk factors.[4,5]

Iatrogenic causes, particularly from gynaecological surgeries such as hysterectomy, are another major contributor to RVFs. The case series by Lavryk et al and Maggiori et al highlight the incidence of RVFs following abdominal hysterectomies and other pelvic surgeries.[6,7] Additionally, radiation-induced RVFs are well-documented in oncologic patients, with complex management strategies requiring multidisciplinary input.

Clinical presentation and diagnosis

Symptoms of RVF vary depending on the size and location of the fistula but often include passage of faecal matter and gas through the vagina, recurrent vaginal infections, and fecal incontinence. The time of onset differs based on etiology-obstetric RVFs may present weeks postpartum, while radiation-induced fistulas can develop months to years after treatment (Hauch et al).[8]

Accurate diagnosis is crucial to successful management. Endoanal ultrasound, contrast-enhanced MRI, and examination under anesthesia (EUA) are commonly employed diagnostic tools. Cases that underwent early MRI and EUA, as seen in the thematic review, had timely diagnosis and appropriate surgical planning, preventing further complications.

Management strategies

Management of RVFs varies widely based on the cause, location, and severity. Surgical intervention remains the mainstay of treatment, with approaches ranging from simple layered closures to complex tissue interposition techniques.

Primary repair: Common in obstetric RVFs, involving immediate layered closure with absorbable sutures, as recommended by Fu et al.[9] Thematic review cases and studies by Reisenauer demonstrated success with early intervention.[10]

Flap techniques: The Martius fat pad graft and Singapore flap have been used for radiation-induced and complex RVFs, as noted by Maggiori et al.[7]

Colostomy and delayed repair: Some cases require fecal diversion to allow healing before definitive surgical correction, particularly in high-risk or recurrent cases (Lavryk et al).[6]

Minimally invasive approaches: Recent advancements in laparoscopic and robotic-assisted repairs offer less morbidity and improved healing times (Hauch et al).[8]

Outcomes and prognosis

Success rates of RVF repairs range from 79% to 92%, with lower recurrence rates seen in obstetric fistulas compared to radiation-induced cases (Fu et al and Maggiori et al).[7,9] Delayed intervention and missed diagnoses at initial assessment are associated with higher failure rates and the need for repeat surgeries or permanent colostomies.

Psychosocial consequences of RVFs are also significant, with studies reporting high rates of depression, anxiety, and impaired quality of life (Trovik et al).[1]

This underscores the necessity of a multidisciplinary approach, including psychological support, physiotherapy, and long-term follow-up care.

The literature highlights obstetric trauma, surgical injury, and radiation therapy as leading causes of RVFs. Timely diagnosis and individualized management strategies, ranging from primary repair to complex reconstructive procedures, are key to improving outcomes. Future research should focus on minimally invasive techniques, prevention strategies, and optimizing multidisciplinary care to enhance QoL for affected women (Table 2).

Table 2: Comparative case series table on rectovaginal fistulas.

Author(s) and year	Topic	Etiology	Patient characteristics	Management approach	Outcomes
Maggiori et al, 2017[7]	Management of post-radiation rectovaginal fistulas	Radiation-induced RVF	Patients with pelvic malignancies and radiotherapy	Turnbull-Cutait pull-through procedure; Singapore flap	79% success rate; preserved intestinal continuity
Weledji et al, 2020[5]	Obstetric trauma leading to rectovaginal fistula	Obstetric trauma; forceps delivery	Female patient with a history of forceps vaginal delivery	Fistulotomy and immediate reconstitution; layered closure	Successful repair; no recurrence; good anal tone
Lavryk et al, 2018[6]	Complex pelvic pathologies leading to RVF	Chronic inflammatory pelvic disease	Patients with complex pelvic conditions, including RVF	Turnbull-Cutait procedure; temporary ileostomy	85% success rate; 8% recurrence within 6 months
Shaaban KA, 2008[4]	Isolated rectovaginal tear following vacuum delivery	Obstetric trauma; vacuum-assisted delivery	32-year-old primigravida	Immediate layered closure repair	Full healing; no recurrence
Reisenauer C, 2009[10]	Postpartum rectovaginal fistulas: surgical perspectives	Obstetric trauma; unrecognized fourth-degree tear	30-year-old multiparous female	Transanal advancement flap repair	91% healing rate; minor complications
Hauch et al, 2020[8]	Refining surgical approaches to rectovaginal fistulas	Various causes including obstetric and radiation-related fistulas	Diverse patient demographics	Transvaginal repair; colostomy for severe cases	92% success rate with multidisciplinary management
Fu et al, 2019[9]	Surgical repair outcomes of RVFs	Obstetric and non-obstetric causes	40 patients across two centres	Transvaginal and transanal surgical repair	86% success rate; fistula recurrence in 9% of cases
Trovik et al, 2016[1]	Incidence of obstetric fistulas in norway	Obstetric fistula	Norwegian cohort of pregnant women	Primary repair and delayed surgical intervention	Low incidence; favorable outcomes post-repair

Key points from the comparative analysis

Etiology

The primary cause of RVFs in obstetric cases is prolonged second stage labor, instrumental deliveries, and unrecognized perineal trauma. Non-obstetric cases arise from radiotherapy, chronic infections, and previous surgeries.

Management approaches

Obstetric RVFs: Primarily managed with primary surgical repair, layered suturing, and delayed interventions for persistent cases.

Radiation-induced RVFs: Managed using flap techniques, colostomies, and complex reconstructive surgery.

Complex pelvic RVFs: Multidisciplinary approach with colorectal and urogynecological teams involved.

Outcomes

Primary repair success rate ranges between 79% and 92%. Recurrence is more common in radiation-induced fistulas. Patients with chronic conditions require more complex interventions.

The findings from this case review highlight prolonged labor, instrumental delivery, and episiotomy as common risk factors for the development of RVF. In two cases, delays in diagnosis of RVF resulted in extended morbidity, emphasizing need for enhanced postpartum surveillance.

Two of the three cases had prolonged second stages of 4 ½ and 5 ½ hours. There was also a decision to deliver and birth interval of 1hour 40 minutes and 2 hours 20 minutes respectively. This may have been a preventable contributing factor. There is a recommendation that nulliparous women should be delivered within 3 hours of an active second stage of labour (NICE 2022). Every effort needs to be made to expedite birth once the decision to deliver has been made. Efforts need to be made to actively manage women who fall into these criteria. This needs to be highlighted to all staff.

In case 3 there was an identified intrapartum pyrexia which whilst promptly identified and treated may, in conjunction with a long second stage may have be a contributory factor in the development of a recto, vaginal fistula.

Early MRI has probably missed predicting fistula or it could be denovo fistula arising on a later date in first case.

Preventive strategies for RVF should focus on mitigating prolonged second-stage labor and the judicious use of episiotomies. The literature suggests that warm perineal compresses during labor can reduce perineal trauma and potentially decrease the incidence of OASIS.[4] Furthermore, research has demonstrated that the use of episiotomy should be restricted to cases where fetal distress necessitates expedited delivery, as routine use does not necessarily prevent severe perineal trauma.[5]

Timely recognition and early intervention play a crucial role in RVF management. Routine postpartum perineal assessments should include a combined vaginal and rectal examination to identify any developing complications promptly. In cases where fistula formation is suspected, MRI with contrast has been identified as the imaging modality of choice due to its superior soft tissue visualization.[6] Multidisciplinary collaboration is essential in optimizing outcomes for RVF patients. Early consultation with colorectal surgeons ensures that appropriate surgical techniques, such as layered closure or tissue interposition grafts, are employed in the repair process.[7] Postoperative care should include prophylactic antibiotics, stool softeners, and structured pelvic floor physiotherapy to enhance recovery and reduce recurrence rates.[8]

Future research should focus on developing standardized guidelines for perineal repair techniques and investigating role of emerging technologies, such as stem cell therapy, in promoting tissue regeneration and fistula closure.[9] Additionally, patient education programs should be integrated into antenatal care to raise awareness of perineal trauma risks and available postnatal support systems.

CONCLUSION

Rectovaginal fistula remains a significant yet preventable complication in obstetric practice. The findings from this study emphasize need for proactive perineal trauma prevention strategies, early detection mechanisms, and standardized management protocols. Enhanced clinical training, adherence to national guidelines, and systematic postnatal follow-up are critical in minimizing risk of fistula formation. Multidisciplinary collaboration between obstetricians, midwives and colorectal specialists is pivotal in optimizing patient care and improving long-term outcomes.

According to the MASIC Foundation, which advocates for women experiencing injuries resulting from childbirth, recto-vaginal fistula has several detrimental effects on women, as follows: 85% of women who experienced severe birth injuries reported that it adversely affected their relationship with their child. The 78% were impacted by distressing recollections of the birthing process. The 52% expressed feelings of embarrassment regarding the manifestations of their injury. 49%t of the affected women indicated a lack of confidence in their maternal capabilities. 45% experienced postnatal depression as a consequence of their injury, while 24% of the affected women expressed regret regarding their decision to have a child due to the injuries incurred.

Future efforts should focus on refining perineal trauma assessment techniques, integrating advanced imaging modalities for early diagnosis, and establishing dedicated care pathways for women at high risk. Additionally, patient education and psychological support must be incorporated into postnatal care to mitigate the long-term emotional impact of RVF. A structured, evidence-based approach will ultimately enhance maternal safety and reduce the incidence of this distressing condition.

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