

Bowel Extrusion through Vaginal Vault Prolapse: A Case Report

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ABSTRACT

Bowel extrusion from a vaginal vault prolapse is a rare but serious complication, often resulting from a previous hysterectomy or prolapse surgery. It is a gynecological and surgical emergency that requires prompt identification and treatment to prevent further morbidity and mortality. This article presents a case study of bowel extrusion through a vaginal vault prolapse, exploring clinical presentation, diagnosis, and management.

Keywords: Bowel loop, Case report, Mesh repair, Sacrocolpopexy, Vault prolapse.

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INTRODUCTION

Vaginal vault prolapse refers to the descent of the vaginal apex, which commonly occurs after a hysterectomy due to weakening of the pelvic support structures. This condition primarily affects postmenopausal women and can have profound impacts on a patient's quality of life, contributing to symptoms ranging from a sensation of vaginal bulging to severe pain and urinary or bowel dysfunction. When the prolapse is severe, the bowel or other organs can herniate through the weakened pelvic floor and even extrude outside the vaginal canal, presenting as a rare and potentially life-threatening condition.

The pathophysiology behind vaginal vault prolapse often involves weakened or damaged ligaments and fascia that provide structural support to the vaginal apex. The primary ligaments affected include the uterosacral and cardinal ligaments, which help support the upper part of the vagina. When these structures are damaged, often due to previous pelvic surgeries, aging, or chronic increases in intra-abdominal pressure, the likelihood of prolapse and associated complications increases significantly.

CASE DESCRIPTION

A 56-year-old P2L2 (previous two full-term normal delivery) postmenopausal woman, arrived at the emergency department in significant discomfort. She reported a persistent and worsening sensation of pelvic heaviness over the last several months but had not sought medical attention until the extrusion of bowel tissue through her vagina. She experienced accompanying symptoms, including nausea, constipation, and severe lower abdominal cramping, which had escalated over the prior 48 hours.

On examination, visible loops of the small bowel with vault prolapse protruded through her vaginal vault, appearing erythematous (Fig. 1).

Diagnosis

In cases of suspected bowel involvement in vaginal vault prolapse, imaging plays a critical role. In this case, a computed tomography (CT) scan of the pelvis was ordered, which confirmed the presence of herniated bowel loops and mesentery through the pelvic floor and vaginal orifice with constriction at the level of vaginal introitus. Imaging also revealed mild mesenteric congestion with air/gas foci

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Fig 1: Bowel loop prolapse through vaginal vault

in the prolapsed mesentery with no signs of acute ischemia in the bowel. Further laboratory work, including complete blood count,

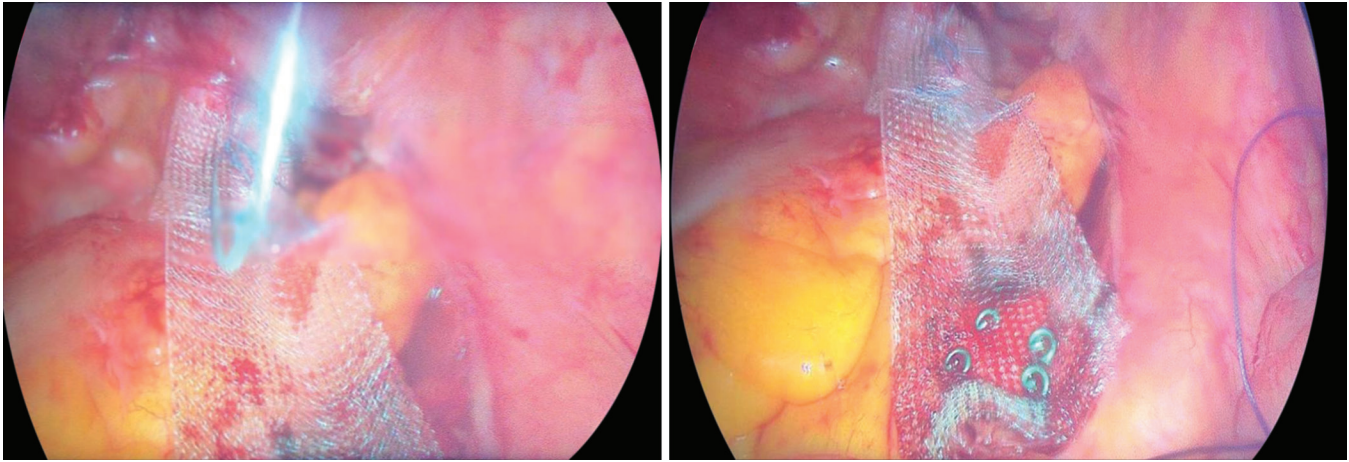


Fig 2: Laparoscopic vault suspension with mesh repair

electrolytes, and lactate levels, was conducted to assess for any underlying infection or metabolic abnormalities.

The differential diagnosis for vaginal prolapse with bowel extrusion includes enterocele (prolapse of the small intestine into the vaginal canal), rectocele (posterior vaginal wall prolapse involving the rectum), and, or vault prolapse with secondary organ involvement. It is essential to differentiate these conditions because the management varies significantly based on the structures involved.

Management

The emergency department team immediately administered intravenous fluids and provided analgesics. The exposed bowel was carefully covered with moistened sterile gauze to prevent dehydration and contamination. Given the patient's presentation, an urgent surgical consultation was arranged. The patient was taken for emergency laparotomy with small bowel reduction with the closure of the vaginal vault. Immediate vault suspension was avoided due to inflammation and edema over the surgical site.

After 3 months, the patient was taken for laparoscopic vault suspension with cystocele and rectocele repair. On laparoscopic, the bowel was adhered to the anterior abdominal wall. Adhesiolysis was done with sharp and blunt dissection, para rectal dissection was done till the right ischial spine. The ureter was identified and pushed away. Anterior and posterior dissection was done on the vault and the bladder and rectum were pushed away. A Y-shaped mesh was created and both the ends were fixed with the anterior and posterior surface of the vault with suture. The vertical end of the mesh was fixed with a right-sided ischial spine with a tackler and covered with peripheral suturing. Vaginally, cystocele and rectocele repair was done with levator ani plication.

The patient tolerated the procedure well and was vitally stable (Fig. 2).

Initial Stabilization

Protection of the prolapsed bowel with sterile, moistened dressings to reduce infection risk and prevent further drying or trauma.

Administration of fluids and broad-spectrum antibiotics, especially if signs of systemic infection are present.

Bowel rest and nasogastric tube placement may be warranted if bowel obstruction is suspected.

Surgical Options

Abdominal sacrocolpopexy: This procedure involves securing the vaginal vault to the sacrum using a mesh, providing durable support. Sacrocolpopexy is frequently chosen for patients who are suitable for an abdominal approach, as it offers high rates of long-term success and decreased recurrence of prolapse.

Vaginal colpocleisis: In selected elderly patients or those with significant comorbidities, obliterative procedures, such as colpocleisis (closing the vaginal canal), maybe a safer option. Colpocleisis provides relief by preventing further prolapse but precludes future vaginal intercourse.

Uterosacral ligament suspension: In cases where mesh is not preferred, this vaginal approach uses the native tissue to secure the vaginal apex. Although this technique may be associated with a slightly higher risk of prolapse recurrence than sacrocolpopexy, it is less invasive and avoids mesh complications.

Use of Mesh

The use of mesh for pelvic organ prolapse has become controversial due to potential complications, such as mesh erosion or infection. When considered, mesh reinforcement must be carefully selected, and the risks discussed with the patient. Biological mesh may be preferred in cases where synthetic mesh is contraindicated.

Postoperative and Long-term Management

Physical therapy: Pelvic floor rehabilitation can significantly improve outcomes, reduce prolapse recurrence, and alleviate symptoms of pelvic pain and bowel dysfunction. Exercises targeting the pelvic floor muscles (e.g., Kegel exercises) can strengthen the supporting structures.

Lifestyle modifications: Patients should be advised to avoid heavy lifting, manage chronic cough if present, and treat constipation to reduce intra-abdominal pressure.

Follow-up care: Regular follow-up with a urogynecologist or pelvic floor specialist is recommended to monitor for any signs of recurrence or complications.

DISCUSSION

Bowel extrusion in vaginal vault prolapse is a rare yet serious condition, often seen in patients with multiple risk factors such as age, history of other pelvic surgeries, especially hysterectomy, connective

tissue disorders such as Ehlers-Danlos syndrome which leads to weakening of pelvic ligaments. The condition is compounded by a range of challenges, including diagnostic delay due to a lack of awareness and the potential for bowel ischemia or perforation. Early identification and treatment are crucial for improving outcomes. Complications can arise from delayed treatment, such as infection, bowel ischemia, and, in rare cases, peritonitis.

Currently, the reported cases are after laparoscopic or robotic hysterectomies. Iaco et al. reported an overall incidence of 0.28%.¹ They also concluded that there were no statistical differences according to the route of surgery or closure versus non-closure of the vault.

Hur et al.² reported an incidence of vaginal dehiscence of 4.93% among total laparoscopic hysterectomies, 0.29% among vaginal, and 0.12% among abdominal hysterectomies, 60% of these patients presented with both dehiscence and bowel evisceration. The most common risk factors are postmenopausal atrophy, the presence of enterocytes, or previous vaginal surgeries. Other risk factors include cuff infection or hematoma, poor surgical technique, or factors interfering with healing such as diabetes, immunosuppression, steroid therapy, malignancy, and malnutrition.^{2,3} Post hysterectomy the vaginal axis is no longer horizontal, it becomes vertical. Hence, the vaginal apex takes the direct effect of any increase in intra-abdominal pressure. Furthermore, in the presence of an untreated enterocoele, a sudden increase in the intra-abdominal pressure causes the enterocoele sac to weaken and rupture.⁴ It is generally agreed that the peritoneum heals by 5–6 days after surgery or wounding. Smaller defects heal earlier. However, in the presence of factors that interfere with healing, healing may be delayed.^{5–7}

Complications and Prognosis

Complications from bowel extrusion include bowel strangulation, ischemia, and perforation. The prognosis largely depends on the timing of the intervention. Early surgical repair is associated with excellent outcomes, but delayed intervention can lead to increased morbidity. Postoperative complications such as recurrence, infection, and mesh erosion (if mesh was used) may also impact prognosis. Long-term success rates are high with appropriate intervention, particularly with abdominal sacrocolpopexy.

CONCLUSION

Bowel extrusion through a vaginal vault prolapse represents an uncommon, high-risk complication that necessitates immediate medical and surgical attention. Multidisciplinary management, including emergency care, surgical repair, and rehabilitation, is essential for optimal patient outcomes. Early diagnosis, effective surgical repair, and post-surgical support, including pelvic floor therapy, can help reduce recurrence rates and improve quality of life. Increased awareness and preventative measures for women at high risk are key to reducing the incidence and complications associated with vaginal vault prolapse.

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