

## Transvaginal small bowel evisceration

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We report on the rare entity of transvaginal small bowel herniation following a transvaginal hysterectomy. The risk factors, presentation, initial management and various surgical approaches are discussed. It is a condition that requires prompt surgical intervention. This report serves to highlight awareness of the condition, and how knowledge of the various methods of addressing an ischaemic bowel and a ruptured vaginal vault can result in a favourable outcome.

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A 71-year-old Caucasian woman underwent a transvaginal hysterectomy for utero-vaginal prolapse. Despite the operation, she experienced discomfort from anterior vaginal prolapse and had incomplete bladder emptying. Further surgery was not considered because of multiple co-morbidities, most importantly congestive cardiac myopathy, dyslipidaemia and chronic obstructive pulmonary disease.

Nine months later, she presented with a 24-hour history of an excruciating painful mass protruding from her vagina. She was haemodynamically stable, with diffuse abdominal tenderness and distension with guarding. The protruding mass was a segment of ischaemic small bowel, which eviscerated via a tight vaginal vault defect (Figure 1).



Figure 1: Transvaginal evisceration in the case study patient. The eviscerated segment of ileum is seen protruding through the vagina

In view of her co-morbidities, an extra-abdominal resection of the protruding small bowel was attempted. However, healthy small bowel could not be delivered through the small defect in the vaginal vault, and she was then submitted to laparotomy. The bowel was reduced intra-abdominally via bimanual manoeuvre. A stapled functional end-to-end anastomosis was then performed approximately 10cm from the ileocaecal junction. The vaginal vault defect was closed, and a vaginopexy to the sacrospinous ligament was performed using polydioxanone. The patient made an uneventful recovery and was discharged five days later. She was seen at six months for follow-up and was well.

### Discussion

Transvaginal small bowel evisceration is a rare, but life-threatening condition, which tends to occur in postmenopausal women.<sup>1,2</sup> Risk factors for the development of this condition include the triad of menopause, previous vaginal surgery and pelvic floor disorders.<sup>4</sup> Precipitating factors after vaginal surgery include alteration of the vaginal apex and shortening of the vagina, rendering it more vertical and making it end below the levator ani muscle.<sup>2</sup> Other predisposing factors include a poor surgical technique, which may result in the rupture of a vaginal scar, postoperative cuff infection or haematoma, impaired wound healing, the resumption of sexual activity before complete healing, rough coitus and weakening due to vaginal atrophy.<sup>1,2</sup> Other predisposing factors that have been suggested include previous obstetrical trauma, instrumentation with foreign objects and having multiple sexual partners.<sup>1</sup>

Transvaginal evisceration is associated with both abdominal and vaginal hysterectomy.<sup>1</sup> Hysterectomy results in a potential space or cul-de-sac owing to the absent uterus. A laparoscopic

hysterectomy is associated with a higher risk of evisceration compared to open abdominal or vaginal hysterectomy.<sup>3</sup> Up to 50–75% of patients with transvaginal evisceration have undergone some form of vaginal surgery, and up to 25% have undergone an abdominal hysterectomy.<sup>2</sup>

Clinical features include sudden abdominal or pelvic pain, with or without vaginal bleeding, and sudden protrusion of a mass through the vagina.<sup>4</sup> Occasionally, patients may be asymptomatic, and notice an undefined swelling of the vaginal introitus.<sup>4</sup> Stretching and tearing of the small bowel mesentery during evisceration results in necrosis, which is associated with mortality of up to 10%.<sup>5</sup> The symptoms develop typically following sexual activity, vaginal instrumentation and increased intra-abdominal pressure.<sup>1</sup> The different sites of vaginal rupture are vaginal vault, posterior fornix and posterior vaginal wall. The most commonly protruding intra-abdominal viscus is the terminal ileum because of its mobility, its long mesentery and its close proximity to the pelvis.<sup>1</sup> Other less common organs to prolapse are the omentum, Fallopian tubes, appendix, colon and appendices epiploicae.<sup>1</sup> Mortality following transvaginal evisceration is 6–10%, and the presence of a strangulated bowel increases this mortality.<sup>5</sup>

An abdominal X-ray should be performed to exclude foreign bodies. Initial management includes stabilisation of the patient, wrapping of the bowel with a warm moist saline swab, and immediate surgical repair under prophylactic antibiotic cover.<sup>1</sup>

Transvaginal, transabdominal, combined vaginal-abdominal and a laparoscopic vaginal approach have all been described.<sup>4</sup> The transvaginal approach is ideal for patients with an easily reduced viable bowel and the absence of peritonitis or a foreign body.<sup>3</sup> This approach is not advisable in the presence of high vaginal defects or a strangulated bowel, as was the case with our patient. The transabdominal approach allows a thorough intra-abdominal inspection, and avoids missing unexpected pathology and allows meticulous peritoneal lavage. The combined abdominal and transvaginal approach is indicated in patients with an incarcerated but viable bowel, whereas patients with uncertain bowel viability are best managed with a laparotomy.<sup>1</sup> Laparoscopic repair has been described with equivalent results.<sup>1,3</sup>

The transabdominal approach is the preferred approach, and is ideal for patients with a high or tight vaginal vault defect, with an oedematous eviscerated bowel.<sup>2</sup> The principles of surgery include timeous reduction of the herniated bowel. The small bowel is gently reduced and a thorough inspection of the bowel and its mesentery undertaken to exclude lacerations or haematoma. Non-viable bowel should be resected, followed by the restoration of bowel continuity.<sup>1</sup> The vaginal vault defect is identified, the non-viable or friable edges excised and the vaginal vault sutured. To reduce recurrence, the rectovaginal cul-de-sac is obliterated, the peritoneum overlying the sacrospinous ligament on either side is incised, and the peritoneum and rectum are then retracted in order to allow identification of the tissue above the sacrospinous ligament, after which a vaginopexy is performed by fixation of the vaginal vault to the sacrospinous or uterosacral ligaments.<sup>1</sup>

Surgical repair of the vaginal vault defect itself may include a primary repair, omental patch, dermal graft and mesh repair.<sup>1,2</sup> Successful primary repair is dependent on the integrity of the tissue edges.<sup>1</sup> However, some authors caution against using mesh after resection and anastomosis.

Our patient was a poor surgical risk, and had healthy tissue edges. Therefore, we opted for the combined vaginal-abdominal approach and an immediate primary vaginal vault repair with a monofilament suture.

The timing of the correction of the anatomical pelvic floor defect is dependent on the patient's condition and on the health of the pelvic tissue. Whereas some authors have cautioned against urgent repair in the presence of infection or unhealthy tissue which does not hold sutures well, most authors suggest immediate closure as it decreases the risk of re-evisceration and peritonitis.<sup>1,2</sup>

Bearing in mind that the incidence of hysterectomies has increased over the years, a high index of suspicion is warranted in patients who present with pelvic organ prolapse. Patients with bowel prolapse may present to the general surgeon directly or via the gynaecology department. Therefore, it is important for the general surgeon to be aware of this potentially devastating condition.

## Conclusion

This is the first report of transvaginal small bowel evisceration in Africa. An awareness of the condition and knowledge of the methods used to address both the ischaemic bowel and ruptured vaginal vault can result in minimal operative time and improved patient outcomes.

This case report illustrates that in patients with a previous vaginal hysterectomy who present with the previously described symptoms, a transvaginal evisceration should be high on the differential diagnosis. When it does occur, it is a surgical emergency which warrants prompt intervention. Early diagnosis and management is important as this condition is associated with high morbidity and mortality.

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