Spontaneous vaginal cuff dehiscence and evisceration of multiple organs  
A case report

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Abstract  
Rationale: Vaginal cuff dehiscence and evisceration constitute a rare but potentially life-threatening event that usually occurs in postmenopausal patients who have undergone hysterectomy. This is a valuable case of spontaneous transvaginal evisceration without pelvic surgery history.

Patient concerns: A 74-year-old postmenopausal woman with an obstetric history of 7 full term vaginal deliveries, experienced sudden evisceration when she attempted to defecate.

Diagnoses: Spontaneous vaginal cuff dehiscence and multiorgan evisceration.

Interventions: After physical examination and fluid resuscitation, the patient underwent Hartmann’s procedure, total hysterectomy, oophorectomy, and posterior colporrhaphy.

Outcomes: The patient recovered well and the constipation symptoms have significantly improved. One-year follow-ups revealed complete healing of the vaginal cuff, and there was no evidence of prolapse.

Lessons: We report a case of spontaneous vaginal cuff evisceration without pelvic surgery history but with constipation and redundant sigmoid colon. After resecting the necrotic sigmoid colon, the patient’s constipation symptoms significantly improved. It is reasonable to speculate that the etiology was related to severe sigmoiicole.

Abbreviation: CT = computed tomography.

Keywords: evisceration, spontaneous, vaginal cuff dehiscence

1. Introduction

Vaginal cuff dehiscence and evisceration can be defined as “a full-thickness separation of the anterior and posterior edges of the vaginal cuff”,[1] and the intra-abdominal contents eviscerate through the vagina. The small intestine is the most common organ to eviscerate others include the omentum and adnexa uteri. Only 3 cases of colon evisceration have been reported.[2] To our knowledge, this is the first case report of spontaneous transvaginal evisceration without a pelvic surgery history and with sudden evisceration of multiple organs, including the uterus, adnexa uteri, bladder, small intestine, and colon, through the vagina.

2. Case report

A 74-year-old postmenopausal woman, with an obstetric history of 7 full term vaginal deliveries, presented to the emergency department in April 2017. The patient experienced sudden evisceration when she attempted to defecate and was brought to Jingzhou Hospital. She complained of increasingly larger prolapse, which was accompanied by mild lower abdominal discomfort but no nausea or vomiting, vaginal bleeding or hematuria. The eviscerated bowel, which seemed to be a part of the ileum, was transvaginally reintroduced manually into the abdominal cavity. In addition, the patient was taken urgently to the emergency department of Zhongnan Hospital of Wuhan University in an ambulance. It is noteworthy that she had presented with stage III (POP-Q system) uterine prolapse for 10 years and constipation for 7 years (spontaneous bowel movements fewer than once times a week, defecation difficulty, defecating time of more than 30 minutes, and high Wexner constipation score of 17). She had no history of gynecological surgery. Her other medical history included hypertension and diabetes mellitus, and her current medications included nifedipine and metformin.
On admission, her vital signs were stable and she was afebrile. Physical examination revealed lower abdominal pain and moderate tympanites. Pelvic examination evidenced the presence of a large loop of intestine, bladder, and the uterus protruding through the vulvar edge, which was no longer reducible at the bedside (Fig. 1). The eviscerated intestine was slightly tense, oedematous, and cyanotic. The laboratory tests indicated no signs of hydroelectrolytic and hemodynamic failure. The elevated white blood cell count, neutrophil count, and procalcitonin level indicated inflammation. Laboratory results are shown in Table 1. Sagittal computed tomography (CT; Fig. 2) of the abdomen revealed no uterus and bladder. After fluid resuscitation, she received intravenous broad-spectrum antibiotics, and the herniated mass was wrapped with warm, sterile, saline-soaked pads. The patient underwent emergent surgery by the general surgery and gynecology services. An examination under anesthesia revealed that reduction was impossible via the vaginal defect. An emergency laparotomy was then performed. At operation, an oval-shaped hiatus (approximately 5 cm) was observed at the posterior fornix, through which an approximated 30-cm loop of the sigmoid colon, bladder, uterus, and adnexa had prolapsed. The ileum that was vaginally reintroduced at the Jingzhou Hospital before surgery had no signs of ischaemia and required no resection (Fig. 3). The bladder was edematous but viable and was successfully repositioned by gentle manipulation. Owing to the incarcerated sigmoid colon, uterus, and associated tissues, the surgeon and gynecologist decided to resect the ischemic intestine, uterus and associated tissues. An abdominal hysterectomy with a posterior colporrhaphy was performed. The defect in the posterior fornix was excised and closed, obliterating the cul-de-sac. A colonic stoma was created.

**Table 1**

| Clinical laboratory data. | Reference ranges |
|--------------------------|------------------|
| White blood cell count (10^9/L) | 22.0 (3.5–9.5) |
| Differential count, % | 22.0 |
| Neutrophils, % | 90.1 (40–75) |
| Hemoglobin, g/L | 117 (115–150) |
| Platelet count, 10^9/L | 140 (125–350) |
| Creatinine, umol/L | 243.5 (49–90) |
| Glucose, mmol/L | 5.65 (3.9–6.1) |
| Procalcitonin, ng/ml | 0.07 (<0.05) |
| Erythrocyte Sedimentation Rate, mm/h | 21 (<20) |

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after rinsing the abdominal cavity with a large amount of normal saline. To conclude, the patient underwent the Hartmann procedure, total hysterosalpingo-oophorectomy, sacrocolpopexy and posterior colporrhaphy.

The patient had an uneventful postoperative course. On postoperative day 16, a speculum examination revealed an intact suture line at the vaginal vault (Fig. 4). She was recovered well and underwent ostomy closure 6 months after the operation. At the 3-month follow-up, 6-month follow-up and 1-year follow-up examination revealed complete healing of the vaginal cuff, and no evidence of prolapse were detected. The Wexner constipation score was 3 and the Wexner fecal incontinence score was 1 within 6-month follow-up examination. The Wexner constipation score was 2 and the Wexner fecal incontinence score was 1 within 1-year follow-up.

The patient was contacted by telephone to obtain verbal informed consent.

3. Discussion

Vaginal cuff dehiscence is an uncommon complication after hysterectomy. Reported frequencies vary from 0 to 7.5% with 35% to 67% of all cases of vaginal dehiscence leading to subsequent evisceration.[3] The etiology of transvaginal evisceration remains unclear. Associated risk factors include previous vaginal surgery, postmenopausal status, delivery, and unconventional sexual intercourse. In addition, obesity, uterine prolapse, severe cough, constipation, a history of radiotherapy, endocrine disease, and connective tissue disease are also thought to increase the risk of vaginal cuff dehiscence.[4-6]

In this report, the patient had some risk factors including advanced age (74 years), multiple deliveries, obesity (body mass index of >27 kg/m²), constipation, diabetes mellitus and a history of uterine prolapse. Vaginal atrophy caused by the absence of hormonal replacement contributes to vaginal cuff dehiscence in postmenopausal patients. In many studies, constipation is considered to be associated with peritoneocoele hernia, especially severe sigmoidocoele. The patient had a history of slow transit constipation and redundant sigmoid colon. Although she had not undergone diagnostic tests for constipation (gastrointestinal transit time study, defecography, cinedefecography, etc.), noting that the constipation symptoms had improved significantly after sigmoidectomy, we speculated that she had peritoneocoele hernia. When straining to have a bowel movement, the intra-abdominal pressure and intestinal contents formed an intense force of impact, rupturing the weak vaginal vault.

The diagnosis and treatment of vaginal cuff dehiscence and evisceration require a multi-disciplinary team, including a colorectal surgeon, gynecologist, urologist, and intensive care unit physician. The most common symptoms are pain, bleeding, and vaginal discharge.[3] Vaginal cuff evisceration is a potentially life-threatening event and mortality may approach 10%. Early recognition of this acute condition provides a rare opportunity to prevent subsequent complications related to significant bowel ischemia and infarction. In this case, the eviscerated ileum with less edema and greater mobility was
withdrawn through the defect in time in another hospital, thus avoiding intestinal resection. It is necessary to examine the vagina with a speculum to determine whether the pelvic organs have prolapsed. If intra-abdominal contents are not visualized at the introitus, we should fill the vagina with a moist towel and maintain the patient in a supine position to minimize the risk of evisceration. A Foley catheter should be inserted prior to packing to avoid urinary retention. If a bowel evisceration is present but active and reducible, the bowel should be carefully reintroduced, whereas if intraperitoneal contents are eviscerated and no longer reducible, the bowel should be wrapped in a moist towel with immediate patient transfer to the operating room.\[9\]

In addition, patients in poor physical condition who are no longer having sex may consider vaginal closure. In this case, after discussion by the multidisciplinary team, the ileum that was reintroduced before surgery and the edematous bladder had no signs of ischemia and did not need resection. After resecting the necrotic sigmoid colon, the patient’s constipation symptoms significantly improved. The sacrospinous ligament suspension also reduced the risk of vaginal prolapse.

No absolute standard of surgical options has been established for patients with vaginal cuff dehiscence and multiorgan evisceration, which depend on the patient’s age and vital signs, the vitality of the evisceration, and the presence of mechanical damage.\[10\] Abdominal surgery allows complete inspection of organs and targeted treatment (i.e., resection, suspension or reconstruction). Perineal surgery is minimally invasive but may be under consideration when the patient’s vital signs are stable and when there is no peritonitis or ischemic injury.

Author contributions

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