Case Report

Vaginal cuff dehiscence: report of two cases

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ABSTRACT

Vaginal cuff dehiscence is a rare but potentially life-threatening post-hysterectomy complication. Here we report two cases of vaginal cuff dehiscence with distinct imaging features and describe the CT findings of vaginal cuff dehiscence. Both patients underwent repair surgery, and the diagnoses were confirmed. Radiologic features of vaginal cuff dehiscence are uncommonly described in the literature. Vaginal cuff mural discontinuity and omental fat tissue or bowel herniation into the vaginal canal are the most common appearances of vaginal cuff dehiscence. Pelvic hematoma, bowel obstruction, and pneumoperitoneum can accompany. These two cases highlight the CT appearances, potential presentations, and management of vaginal cuff dehiscence in the emergency setting.

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Introduction

Hysterectomy is the most commonly performed major gynecological operation worldwide [1]. Approximately one-third of women aged ≥50 years in the United States have had a hysterectomy [2]. Although rare, vaginal cuff dehiscence (VCD) is a potentially serious postoperative complication after hysterectomy that requires prompt resuscitation and surgical intervention.

VCD is partial or complete separation of the vaginal cuff edges that were previously sutured at the time of hysterectomy. VCD can be life-threatening in cases with bowel evisceration that may cause bowel infarction, peritonitis, sepsis, and shock [3]. It is typically diagnosed by clinical history and pelvic exam, but its low incidence can make the diagnosis overlooked in the emergency department, and radiologic features may help the diagnosis in selected patients. We present two VCD cases with different radiologic features on computed tomography (CT) to highlight its possible imaging characteris-
tics, which may help radiologists recognize this relatively rare postoperative complication.

**Case presentations**

**Case 1**

A 40-year-old Gravida 5, Para 0 female with a past surgical history of total laparoscopic hysterectomy for fibroid uterus two months ago presented to the emergency room (ER) with heavy vaginal bleeding and pelvic pain that started during vaginal intercourse and continued post-coitus. The patient was cleared for routine activity and intercourse one week prior by gynecology, and she had vaginal intercourse for the first time since her hysterectomy. The patient was on lisinopril due to a history of hypertension but was otherwise healthy. The patient had a history of loop electrosurgical excision procedure and in vitro fertilization in the past. The patient denied using tobacco products, alcohol, drugs, or marijuana, and the family history was non-contributory.

The patient was not in immediate distress in ER, and the vital signs were normal. On physical exam, the patient had mild suprapubic tenderness without guarding or rebound. On the initial pelvic exam in ER, the external exam was unremarkable. There was a large amount of hemorrhagic products in the vagina on the speculum exam. There was no active bleeding. The serum hemoglobin level was 11.7 g/dL (reference level: 12.1-15.1 g/dL). Otherwise, the laboratory values were unremarkable. The patient was consulted to gynecology, and computed tomography (CT) was performed to evaluate the possible intraabdominal source of bleeding (Fig. 1).

The diagnosis of vaginal cuff dehiscence was confirmed on pelvic exam done by gynecology after CT scan. There was a complete apical vaginal cuff dehiscence with intraabdominal fat tissue protruding into the dehiscence without bowel eversion. On bimanual exam, the fat tissue was easily reduced into the abdomen. There were no signs of infection or bowel injury. The vaginal cuff dehiscence was repaired vaginally. The patient was stable postoperatively with stable serum hemoglobin level and was discharged on postoperative day one.

**Case 2**

A 40-year-old Gravida 2, Para 2 female with a history of total laparoscopic hysterectomy, bilateral salpingectomies, right oophorectomy, and sling surgery eleven weeks ago presented to ER with vaginal bleeding and acute abdominal pain that started during sexual intercourse. The patient was cleared by gynecology for vaginal intercourse, and this was the first time she had penetrative vaginal intercourse since her hysterectomy. After the abortion of the intercourse, the patient had a syncopal episode during showering with a brief loss of consciousness. Although the patient’s bleeding was improved, the abdominal pain gradually worsened in time. The patient was otherwise healthy and denied using tobacco products, alcohol, or drugs, and the family history was non-contributory. The patient reported using marijuana occasionally.

On the physical exam, the patient was pale and Hypotensive (85/56 mm Hg) in ER. The other vital signs were normal. The patient had moderate lower abdominal tenderness without guarding or rebound on the physical exam. The pelvic exam was deferred to gynecology due to patient discomfort. Complete blood count (CBC) showed leukocytosis (19.5 × 1000/ul, reference range 3.9-11.0 × 1000/ul) with neutrophilia (85%). Otherwise, CBC and basic metabolic panel were unremarkable. CT (Figs. 2 and 3) was done due to concerns for intra-abdominal postoperative complications.

The pelvic exam that was done by gynecology revealed a 2 cm vaginal cuff dehiscence with a small prolapsing fat tissue.

Fig. 1 – Case 1. A-C. Contrast-enhanced axial (A), sagittal (B), and coronal (C) CT images show mural discontinuation (arrowheads) at the vaginal cuff, distention of the vaginal canal with high-density hemorrhage, pelvic free fluid (circle), and contrast extravasation (arrows) at the vaginal cuff that indicates active bleeding. D. Sagittal drawing of pelvis illustrates mural discontinuity at the vaginal cuff (arrowheads) and active bleeding (arrow). Mural discontinuation suggests vaginal cuff dehiscence.
that was reduced easily on the bimanual exam. There was no bowel evisceration or active bleeding. The patient was started on ampicillin and gentamicin and underwent laparoscopic repair of the vaginal cuff. The sigmoid colon was overlying the vaginal cuff with some inflammation and adhesions to the cul-de-sac, which was easily taken down. The 2 cm defect at the vaginal cuff was seen, and the cuff’s edges were debrided and approximated. The patient tolerated the procedure well, and antibiotics were resumed for 24 hours. Hematology was consulted due to left ovarian vein thrombosis, which was considered as a provoked thrombotic event since it occurred within three months of surgery, and the patient was started on Apixaban for three months. The patient’s vital signs and serum hemoglobin levels on repeat CBC were stable. The patient was discharged on post-op day one in good condition with instructions to follow up with gynecology and hematology.

**Discussion**

The incidence of VCD is reported between 0.14% to 4.1%, and it can occur at any time after hysterectomy. It has been reported three days after the operation, as well as 30 years after [4,5]. However, the mean time to VCD was found to be 7 weeks after total laparoscopic hysterectomy and 13 weeks after total abdominal hysterectomy [6]. The patients with VCD most com-
mend

because

can be caused by uterine prolapse, which may lead to mechanical bowel obstruction. This can be accompanied by pelvic pain, bloating, and changes in bowel habits. However, the symptoms can be similar to other conditions, such as constipation or irritable bowel syndrome, making it challenging to diagnose in the absence of a clear history or physical examination.

The diagnosis of caecal intussusception is challenging and may be delayed, leading to complications like perforation or gangrene. CT imaging is crucial in this scenario, as it can provide clear visualization of the bowel wall thickening and the presence of air or fluid levels. Delayed diagnosis can result in serious complications, necessitating prompt intervention.

In summary, vaginal cuff herniation is a rare but important complication after hysterectomy. It can present with a range of symptoms, including bowel and bladder dysfunction, and may require prompt intervention to prevent serious complications. Radiologists should be aware of this entity and consider it in the differential diagnosis of post-hysterectomy patients with new symptoms of bowel or bladder dysfunction.

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