

Spontaneous vaginal cuff dehiscence and evisceration of multiple organs

A case report

Yan Zhou, BS.Med^{a,b,c,d}, Yichao Zhang, BS.Med^{a,b,c,d}, Weicheng Liu, MD^{a,b,c,d}, Wei Zhang, MD^e, Xiwen Wang, MD^e, Xueqiao Yu, MD^{a,b,c,d}, Zhao Ding, MD^{a,b,c,d}, Zhilin Gong, MD^f, Congqing Jiang, MD^{a,b,c,d,*}, Qun Qian, MD^{a,b,c,d,*}

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 had underwent the Hartmann's procedure, total hysterosalpingo-oophorectomy, sacrocolpopexy, and posterior colporrhaphy.

Outcomes: The patient recovered well and the constipation symptoms have significantly improved. One-year follow-ups examination 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 sigmoidocele.

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

Editor: N/A.

This work was supported by the Science and Technology Innovation Foundation of Zhongnan Hospital of Wuhan University (cpxy2017018).

The authors have no conflicts of interest to disclose.

Y. Zhou, Y. Zhang and W. Liu contributed equally to this work.

^a Department of Colorectal and Anal Surgery, Zhongnan Hospital of Wuhan University, ^b Clinical Center of Intestinal and Colorectal Diseases of Hubei Province, ^c Hubei Key Laboratory of Intestinal and Colorectal Diseases (Zhongnan Hospital of Wuhan University), ^d Quality Control Center of Colorectal and Anal Surgery of Health and Family Planning Commission of Hubei Province, ^e Department of Obstetrics and Gynecology, Zhongnan Hospital of Wuhan University, Wuhan, ^f Department of Colorectal and Anal Surgery, Jingzhou Central Hospital, Jingzhou, China.

* Correspondence: Congqing Jiang, Qun Qian Department of Colorectal and Anal Surgery, Zhongnan Hospital of Wuhan University, Wuhan 430071, China (e-mail: wb002554@whu.edu.cn, qunqian2007@163.com).

Copyright © 2018 the Author(s). Published by Wolters Kluwer Health, Inc. This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial License 4.0 (CCBY-NC), where it is permissible to download, share, remix, transform, and buildup the work provided it is properly cited. The work cannot be used commercially without permission from the journal.

Medicine (2018) 97:50(e13670)

Received: 17 August 2018 / Accepted: 21 November 2018

<http://dx.doi.org/10.1097/MD.0000000000013670>

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 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.

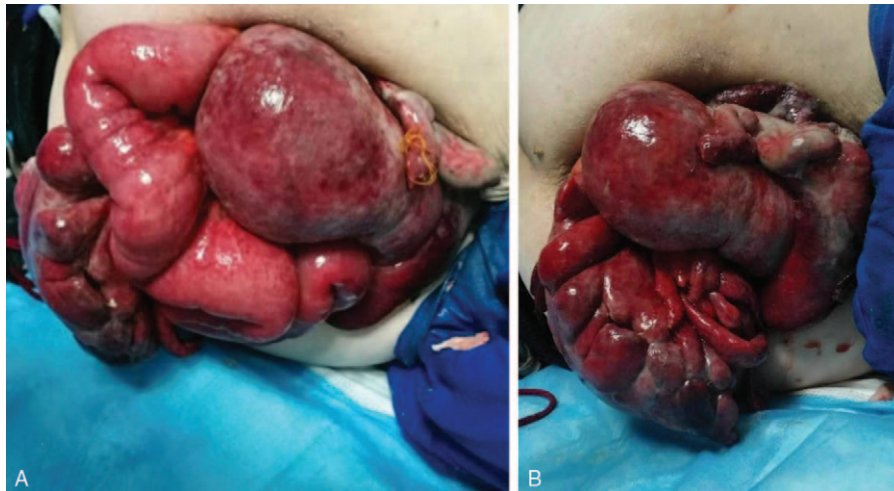


Figure 1. Preoperative photo showing the evisceration of a large loop of intestine, bladder and uterus protrude through the vulvar edge. A, Showing the small bowel. B, After reposition of the small bowel.

Table 1		
Clinical laboratory data.		
		Reference ranges
White blood cell count ($10^9/L$)– Differential count, %	22.0	3.5–9.5
Neutrophils, %	90.1	40–75
Hemoglobin, g/L	117	115–150
Platelet count, $10^9/L$	140	125–350
Creatinine, $\mu\text{mol/L}$	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

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 and pelvis 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 approximately 30-cm loop of the sigmoid colon, bladder, uterus, and adnexa had prolapsed. The ileum that was transvaginally 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

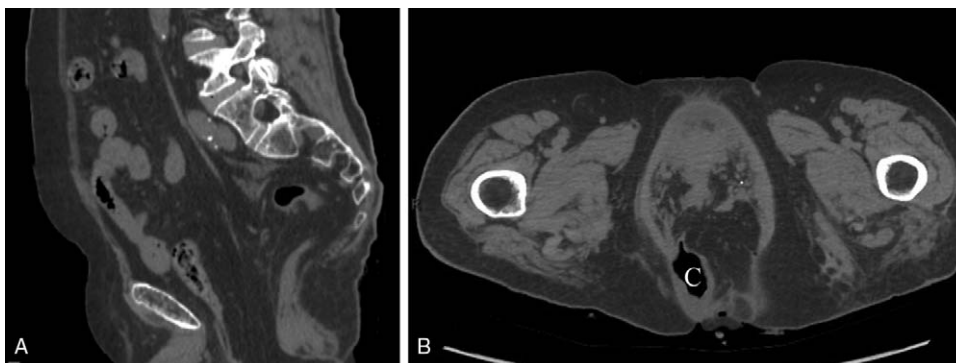


Figure 2. A, Sagittal CT scan image of the abdomen and pelvis shows that the uterus and bladder are absent. B, Transverse CT scan through the upper thighs showing externally herniated the mass. C=Colon, CT= computed tomography.

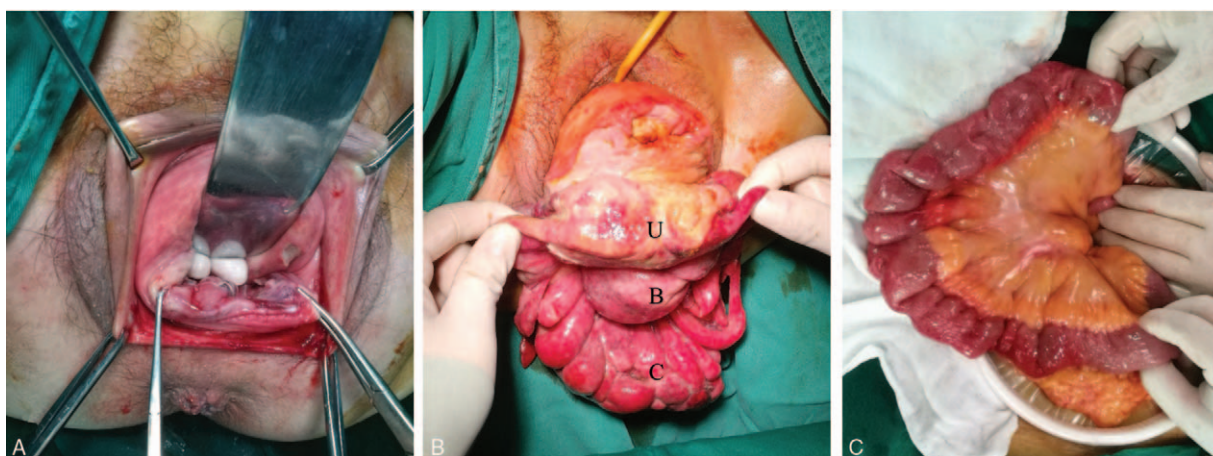


Figure 3. A, At operation, an oval-shaped hiatus (approximately 5 cm) was observed at the posterior fornix. B, An approximately 30 cm loop of the sigmoid colon, bladder, uterus and the adnexa had prolapsed, and extending well beyond the vaginal introitus. U=Uterus; B=Bladder; C=Colon. C, the ileum that had been withdrawn before surgery had no signs of ischemia.

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 were 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 $>27 \text{ kg/m}^2$), 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 peritoneocele hernia, especially severe sigmoidocele. 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, cindefecography, etc.), noting that the constipation symptoms had improved significantly after sigmoidectomy, we speculated that she had peritoneocele

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%.^[7,8] 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

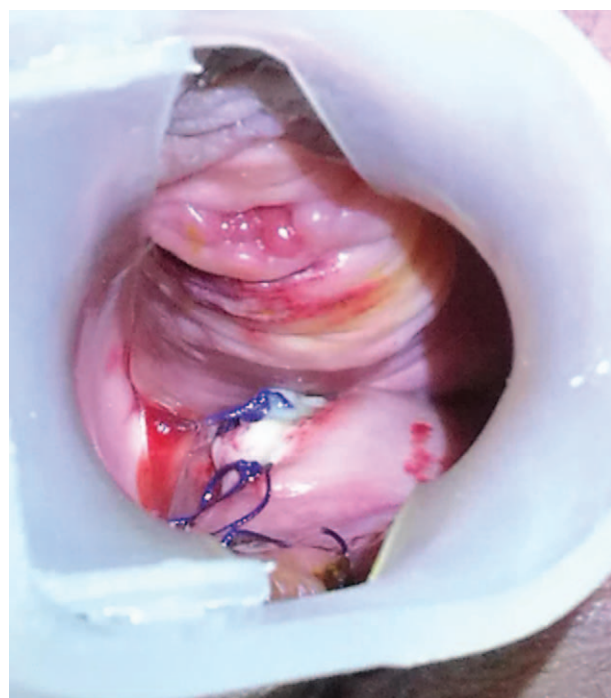


Figure 4. On postoperative day 16, a speculum examination revealed an intact suture line at the vaginal vault.

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

Conceptualization: Yan Zhou, Yichao Zhang, Cong Qing Jiang.

Data curation: Yan Zhou, Yichao Zhang, Weicheng Liu.

Formal analysis: Yan Zhou, Weicheng Liu, Xueqiao Yu.

Investigation: Yan Zhou, Yichao Zhang, Weicheng Liu, Zhao Ding.

Project administration: Cong Qing Jiang, Qun Qian.

Resources: Wei Zhang, Xiwen Wang, Zhilin Gong.

Validation: Cong Qing Jiang, Qun Qian.

Visualization: Weicheng Liu.

Writing – original draft: Yan Zhou, Yichao Zhang.

Writing – review & editing: Yan Zhou, Yichao Zhang, Weicheng Liu, Cong Qing Jiang, Qun Qian.

References

- [1] Rajesh S, Kalu E, Jin B, et al. Evisceration 5 years post abdominal hysterectomy. *J Obstetr Gynaecol Res* 2008;34:425–7.
- [2] Serati M, Casarin J, Braga A. Transvaginal repair of a misunderstood large bowel evisceration six months after vaginal hysterectomy. *Eur J Obstet Gyn R B* 2017;217:180–1.
- [3] Hur HC, Lightfoot M, McMillin MG, et al. Vaginal cuff dehiscence and evisceration: a review of the literature. *Curr Opin Obstet Gynecol* 2016;28:297–303.
- [4] Matthews CA, Kenton K. Treatment of vaginal cuff evisceration. *Obstet Gynecol* 2014;124:705–8.
- [5] Falcone T. Vaginal cuff dehiscence after hysterectomy. *Obstet Gynecol* 2012;120:511–2.
- [6] Ceccaroni M, Berretta R, Malzoni M, et al. Vaginal cuff dehiscence after hysterectomy: a multicenter retrospective study. *Eur J Obstetr Gynecol* 2011;158:308–13.
- [7] Uccella S, Ceccaroni M, Cromi A, et al. Vaginal cuff dehiscence in a series of 12,398 hysterectomies: effect of different types of colpotomy and vaginal closure. *Obstet Gynecol* 2012;120:516–23.
- [8] Moore RD, Miklos JR. Repair of a vaginal evisceration following colpocleisis utilizing an allogenic dermal graft. *Int Urogynecol J* 2001;12:215–7.
- [9] Powell JL, Meyerson MB. Vaginal evisceration after abdominal hysterectomy and vaginal brachytherapy. *J Pelvic Med Surg* 2003;9:125–8.
- [10] Matsuhashi T, Nakanishi K, Hamano E, et al. Laparoscopic repair of vaginal evisceration after abdominal hysterectomy for uterine corpus cancer: a case report and literature review. *J Nippon Med Sch* 2017;84:90–5.