



Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Case Report

Delayed postcoital vaginal cuff dehiscence with small bowel evisceration after robotic-assisted staging surgery

Yen-Po Lan ^a, Huang-Hui Chen ^a, Wei-Min Liu ^{a, b, *}, Ching-Hui Chen ^{a, b, *}^a Department of Obstetrics and Gynecology, Taipei Medical University Hospital, Taipei, Taiwan^b Department of Obstetrics and Gynecology, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

ARTICLE INFO

Article history:

Accepted 21 February 2016

Keywords:

chemotherapy
postcoital vaginal evisceration
robotic surgery
vaginal cuff dehiscence

ABSTRACT

Objective: We report a rare case of vaginal cuff dehiscence with small bowel evisceration at 7 months post robotic-staging surgery.**Case Report:** A 41-year-old woman was sent to the emergency room with sudden onset of abdominal pain, vaginal bleeding, and vaginal protruding mass after sexual activity. She had a history of synchronous uterine and ovarian cancer treated with robotic-staging surgery 7 months before. Then she received six courses of postoperative adjuvant chemotherapy, and the last chemotherapy ended 1 month ago. At the operation room, some small bowel loops were noted in the vaginal tip with cuff dehiscence and bleeding. After repositioning of the small bowel, a 2.5-cm vaginal cuff dehiscence was repaired transvaginally. The patient recovered well, and is free of disease and has normal sexual activity 2 months after repairs.**Conclusion:** Unusual delayed-type vaginal cuff dehiscence hints the possibility that a combination of robotic surgery and postoperative chemotherapy might result in delayed healing of the vaginal cuff.© 2017 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Vaginal cuff dehiscence is the separation of a vaginal incision that was previously closed at the time of initial hysterectomy, accounting for an overall incidence of 0.39% in cases of hysterectomy in one observational cohort study [1]. The incidence is higher in hysterectomies of gynecologic malignancies and minimal invasive surgeries (1.7%) [2], but is lower in transvaginal cuff closure (0.18%) [3]. A higher rate of vaginal cuff dehiscence with early absorbable sutures was noted compared with the delayed absorbable sutures [4]. Evisceration of the bowel or other abdominal organs through vaginal cuff dehiscence can lead to bowel injury, peritonitis, and sepsis.

The most common cause of vaginal cuff dehiscence in premenopausal women is the first postoperative coitus [5], and most of the cases occurred within 6 weeks–4 months after surgery [6]. Other major risk factors include increased abdominal pressure and pelvic organ prolapse [7]. Here, we report a rare case of vaginal cuff

dehiscence at 7 months post robotic-assisted staging surgery for the management of endometrial and ovarian cancers.

Case Report

A 41-year-old female patient, gravida 2, para 2, was diagnosed to have primary endometrial cancer. She received standard staging surgery, including cytology, hysterectomy, bilateral salpingo-oophorectomy, and retroperitoneal lymphadenectomy by robotic procedure, and the vaginal cuff was closed transvaginally. The pathology report was endometrioid adenocarcinoma, grade 1, pT1aN0M0, The International Federation of Gynecology and Obstetrics (FIGO) stage IA; however, an ovarian endometrioid carcinoma at the right side, pT1aN0M0, FIGO stage IC3, was accidentally diagnosed. She received postoperative six-cycle adjuvant chemotherapy, including cisplatin, cyclophosphamide, and epirubicin. Postoperatively, no hormone therapy was administered.

Except some side effects including nausea, vomiting, and leukocytopenia, the patient tolerated well and followed up at our outpatient clinic regularly. The last follow-up time was 7 months after surgery without evidence of tumor recurrence or abnormal findings. The patient tried to have her first sexual intercourse with her husband; however, acute abdominal pain, vaginal bleeding, and protruding vaginal mass were noted hours after.

* Corresponding authors. Department of Obstetrics and Gynecology, Taipei Medical University Hospital and Taipei Medical University, Number 252, WuXing Street, XinYi District, Taipei, 11031, Taiwan.

E-mail addresses: weimin@tmu.edu.tw (W.-M. Liu), kath0420@tmu.edu.tw (C.-H. Chen).

At emergency room, her vital signs were stable, but several loops of the small intestine inside the vagina were noted during speculum examination. At the operation room, the protruding small bowel was pushed into her abdomen, and one 2.5 cm round vaginal cuff perforation was noted (Figure 1). The wound was immediately repaired transvaginally by 0-Vicryl suture (Figure 2). She was given postoperative antibiotics to prevent infection and discharged 3 days later. She resumed sexual activity 6 months after the incidence of vaginal cuff perforation and was regularly followed up at our outpatient clinic. No further cancer recurrence or complication was reported until now.

Discussion

Vaginal cuff dehiscence is a rare complication after hysterectomy. The incidence is higher in minimal invasive surgeries, such as laparoscopic and robotic surgeries. For total laparoscopic hysterectomy, laparoscopic-assisted vaginal hysterectomy, total abdominal hysterectomy, and total vaginal hysterectomy, the incidence were 0.75%, 0.46%, 0.38%, and 0.11%, respectively [1]. The incidence is higher in the management of gynecologic malignancies (1.31%) than in benign gynecologic conditions (0.50%) [3]. In robotic hysterectomy for gynecologic cancer, the incidence ranged from approximately 0.7% to 2.6% [4].

For minimal invasive surgeries, the incidence of vaginal cuff dehiscence was lower for transvaginal cuff closure (0.18%) than for both laparoscopic (0.64%) and robotic procedures (1.64%) [3]. This is probably due to high technical demand for laparoscopic and robotic suturing and knotting, magnifying effect of the scope causing insufficient amount of tissue during suturing, magnification of small vessels, and excessive electrocauterization that impedes blood supply and healing [6]. Furthermore, the tension of the suture and the knot is more reliable when directly maintained by hands [3]. Whether running suture or interrupt suture for transvaginal cuff closure has a lower incidence of vaginal cuff dehiscence warrants further research.

Early absorbable sutures (Vicryl and Biosyn) have an effective wound support for 3 weeks and delayed absorbable sutures (V-Loc, PDS, and Maxon) have an effective wound support for 6 weeks. A higher rate of vaginal cuff dehiscence was noted with early absorbable sutures (2.5%) compared with the delayed absorbable sutures (0.7) [4].

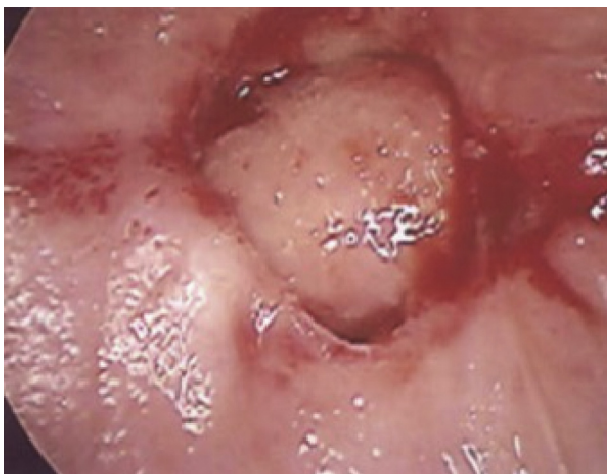


Figure 1. The patient was at the operation room under general anesthesia in the lithotomy position. Some small bowel loops were pushed into the abdomen. One 2.5 cm vaginal cuff perforation was noted.



Figure 2. Vaginal cuff perforation was repaired via the transvaginal route; 0-Vicryl suture was used.

In a premenopausal woman, vaginal cuff dehiscence is most frequently associated with vaginal trauma during coitus [5]. The first postoperative coitus was the most commonly reported trigger event, which occurred 6 weeks–4 months after the hysterectomies [6]. However, vaginal cuff dehiscence could occur 3 years after the first postoperative coitus [7]. In postmenopausal women, increased abdominal pressure and chronic pelvic organ prolapse are the major risk factors [7]. Radical hysterectomy was associated with a nine-fold increase in vaginal cuff complications compared with simple hysterectomy, probably due to shortening of the vagina and disproportion of sexual organs [2]. Most vaginal cuff dehiscence occurred 3–6 weeks after robotic staging surgery of endometrial cancer [8]. In robotic hysterectomies of gynecologic malignancies, nonobesity, postoperative chemotherapy, brachytherapy, and early resumption of sexual activities are also risk factors [4]. In agreement with the abovementioned risks, the patient reported here had (1) robotic hysterectomy for endometrioid cancers of the ovary and uterus, (2) nonobesity, and (3) postoperative chemotherapy, and all these contributed to this unusual clinical presentation. Among these, the most critical point of vaginal cuff dehiscence in the present case is probably postoperative chemotherapy. Chemotherapeutic agent not only targets rapidly dividing cells, but also affects macrophages and fibroblast involved in wound healing [9]. Several animal studies have demonstrated that alkylating agents decrease wound tensile strength and have detrimental effect in wound healing [9]. Our patient received one of the alkylating agents—cyclophosphamide.

Other risk factors included increased age, number of vaginal surgeries, vaginal atrophy, factors that are associated with poor wound healing, and increased Valsalva maneuver [7]. For postmenopausal women, postoperative estrogen therapy may improve wound healing [10]. However, hormone therapy might not suit our current patient, since this patient was diagnosed to have a relatively good prognosis according to the early stage, younger age, and good differentiation of the endometrioid endometrial cancer, which might not be absolute contraindication for hormone replacement therapy [11,12].

Vaginal cuff dehiscence and evisceration can be treated transvaginally and transabdominally, because the ileum is the most frequently protruding intestinal organ; other organs include the omentum, sigmoid colon, appendix, and fallopian tube [13]. If the bowel is uninjured, there are no signs of peritonitis, and also the vaginal cuff defect is well-vascularized and healthy tissue, the transvaginal approach is recommended [14].

In conclusion, although most of the cases of vaginal cuff dehiscence triggered by first postoperative coitus occurred within 4 months, this delayed-type of vaginal cuff dehiscence hinted a potential risk for certain high-risk population. More delicate procedures and good post-treatment care should be applied to minimize the risk of vaginal cuff dehiscence.

Ethics approval

The research protocols were approved by the Taipei Medical University Joint Institutional Review Board (TMUJIRB 201301048).

Conflicts of interest

The authors have no conflicts of interest relevant to this article.

Acknowledgments

This work is supported by grants from the Ministry of Health and Welfare (MOHW103-TDU-B-212-113001) and the Ministry of Science and Technology (MOST 104-2320-B-038-063).

References

- [1] Hur HC, Donnellan N, Mansuria S, Barber RE, Guido R, Lee T. Vaginal cuff dehiscence after different modes of hysterectomy. *Obstet Gynecol* 2011;118:794–801.
- [2] Nick AM, Lange J, Frumovitz M, Soliman PT, Schmeler KM, Schlumbrecht MP, et al. Rate of vaginal cuff separation following laparoscopic or robotic hysterectomy. *Gynecol Oncol* 2011;120:47–51.
- [3] Uccella S, Ghezzi F, Mariani A, Cromi A, Boqani G, Serati M, et al. Vaginal cuff closure after minimally invasive hysterectomy: our experience and systematic review of the literature. *Am J Obstet Gynecol* 2011;205: 119 e1–12.
- [4] Drudi L, Press JZ, Lau S, Gotlib R, How J, Eniu I, et al. Vaginal vault dehiscence after robotic hysterectomy for gynecologic cancers: search for risk factors and literature review. *Int J Gynecol Cancer* 2013;23:943–50.
- [5] Cardosi RJ, Hoffman MS, Roberts WS, Spellacy WN. Vaginal evisceration after hysterectomy in premenopausal women. *Obstet Gynecol* 1999;94:859.
- [6] Hur HC, Guido RS, Mansuria SM, Hacker MR, Sanfilippo JS, Lee TT. Incidence and patient characteristics of vaginal cuff dehiscence after different modes of hysterectomies. *J Minim Invasive Gynecol* 2007;14:311–7.
- [7] Ramirez PT, Klemer DP. Vaginal evisceration after hysterectomy: a literature review. *Obstet Gynecol Surv* 2002;57:462–7.
- [8] Backes FJ, Brudie LA, Farrell MR, Ahmad S, Finkler NJ, Bigsby GE, et al. Short- and long-term morbidity and outcomes after robotic surgery for comprehensive endometrial cancer staging. *Gynecol Oncol* 2012;125:546–51.
- [9] Payne WG, Naidu DK, Wheeler CK, Barkoe D, Mentis M, Salas RE, et al. Wound healing in patients with cancer. *Eplasty* 2008;8: e9.
- [10] Vesna A, Neli B. Benefit and safety of 28-day transdermal estrogen regimen during vaginal hysterectomy (a controlled trial). *Maturitas* 2006;53:282–98.
- [11] Wang PH, Wen KC, Yen MS. Is it safe to preserve the ovary of premenopausal women with supposed early-stage endometrial cancer? *Taiwan J Obstet Gynecol* 2016;55:1–2.
- [12] Li YT, Teng SW. Surgery for endometrial cancer. *Taiwan J Obstet Gynecol* 2016;55:152.
- [13] Kambouris AA, Drukker BH, Barron J. Vaginal evisceration. A case report and brief review of the literature. *Arch Surg* 1981;116:949–51.
- [14] Matthews CA, Kenton K. Treatment of vaginal cuff evisceration. *Obstet Gynecol* 2014;124:705–8.