

Fallopian tube prolapse after vaginal hysterectomy - a rare case and review of the literature

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ABSTRACT

Background: Fallopian tube prolapse (FTP), following hysterectomy, is a rare complication and it can either occur after abdominal, vaginal, or laparoscopic surgeries. It is difficult to determine the related risk factors, thus the existing data comprise case reports or case series including approximately 100 patients.

Case presentation: A 42-years-old woman who had a vaginal hysterectomy 5 months ago presented with vaginal discharge. Examination revealed a 1 cm hyperemic granuloma-like lesion on the apex of the vaginal cuff. Vaginal approach was undertaken under sedative anesthesia and after dissection fallopian tubal prolapse appeared. The patient recovered uneventfully in 2 weeks.

Conclusion: Since hysterectomy is the most common gynecologic surgical intervention, it is important to be aware of even uncommon complications. The clinical presentation can vary by the portion of prolapsed tubal segment into the vaginal cavity and it can be misdiagnosed as vaginal vault granuloma, especially if a very small portion of tubal segment has prolapsed.

Keywords: Hysterectomy, fallopian tube, prolapse, vagina.

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Background

Fallopian tube prolapse (FTP), following hysterectomy, is a rare complication with an estimated incidence of 0.1% after hysterectomies without a salpingectomy [1].

It should be considered in the differential diagnosis of post-hysterectomy vaginal bleedings, discharges, and especially in lesions that are suspected as vaginal vault granulomas. It is difficult to determine the related risk factors. The existing data comprise case reports or case series of approximately 100 patients [2]. In addition to the mode of surgery, there are a number of proposed risk factors, including postoperative fever, vault hematoma or infection, early sexual intercourse after surgery, and poor conditions of health affecting adequate wound healing [2,3].

FTP can occur after abdominal, vaginal, or laparoscopic surgeries. In the current literature, most of the presented cases were after abdominal hysterectomy; however, selection bias due to underreporting should also be noted. Herein this report, we present a case of FTP diagnosed 5 months after the vaginal hysterectomy operation.

Case Presentation

A 42-years-old multiparous woman presented with foul-smelling vaginal discharge. It was profuse and strongly notable especially after intercourse. Past medical history was unremarkable, except a surgical history of vaginal hysterectomy at a different center for dysfunctional

uterine bleeding 5 months ago. She had a history of early postoperative vaginal cuff cellulitis, which was recovered by antibiotherapy. Speculum examination revealed a 1 cm hyperemic granuloma-like lesion on the apex of the vaginal cuff. On ultrasonographic examination, there was no gross abnormality observed for both ovaries. The lesion had a tubular continuity on examination. After a delicate dissection, it seemed to be a left tubal segment which prolapsed into the vagina (Figure 1).

Vaginal approach was undertaken under sedative anesthesia. After dissection, 5 × 2 cm protruding mass, which was smooth, slippery, and edematous, appeared. The prolapsed tube was gently removed totally by sharp dissection. Vaginal mucosa was explored and examined carefully. The vault defect was closed with 1/0 Vicryl by interrupted sutures (Figure 1). Histopathology exposed a fallopian tube with its fimbriae and chronic salpingitis and the patient recovered in 2 weeks.

Discussion

FTP is an unusual complication of hysterectomy. Because hysterectomy is the most common gynecologic surgical intervention, it is important to be aware of even uncommon complications [4]. Recently, opportunistic salpingectomy at the time of gynecologic surgery for benign conditions is suggested for the prevention of ovarian cancer. Although

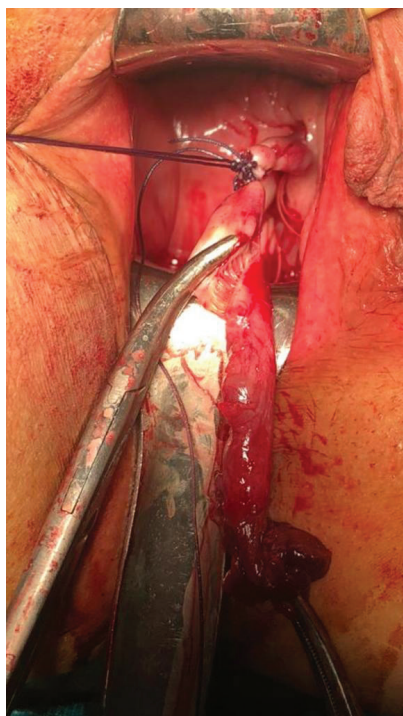


Figure 1. The prolapsed fallopian tube 5 months after vaginal hysterectomy.

this indication is a matter of debate, this approach is being widely embraced [5]. Routine removal of fallopian tubes during hysterectomy may also decrease the FTP incidence over the upcoming years.

FTP is a clinical diagnosis. The most common presenting symptoms associated with FTP are vaginal discharge associated with abdominal pain, post-coital bleeding, and dyspareunia [2]. The clinical presentation can vary by the portion of a prolapsed tubal segment into the vaginal cavity. FTP can be visualized on speculum examination or palpated on bimanual pelvic examination. Of note, a rigorous vaginal cuff examination is essential during evaluation. It can be misdiagnosed as vaginal vault granuloma, especially if a very small portion of tubal segment has prolapsed. In the present case, it also looked like a granuloma and could be easily misdiagnosed. The vaginal adenosis, endometriosis, and primary metastatic adenocarcinoma should be also considered in the differential diagnosis [2,6]. All these conditions can easily be ruled out by a detailed examination and biopsy.

Ouldamer et al. [2] carried out a systematic review of the reports published in the past 30 years to identify the clinical features and the management of FTP. A total of 51 cases of FTP from 28 articles were investigated in the review. Of these patients, 35 (68.8%) were after total abdominal hysterectomy (TAH), 1 (2%) was after subtotal abdominal hysterectomy, 4 (7.8%) were after total laparoscopic hysterectomy (TLH), 2 (3.9%) were after laparoscopic-assisted vaginal hysterectomy, and 9 (17.7%) were after vaginal hysterectomy [2]. To the best of our

knowledge, 3 more cases with FTP after abdominal hysterectomy and 1 more case with FTP after vaginal hysterectomy were reported after this systematic review [3,7,8]. FTP can occur in the early postoperative period or years afterward, as a late complication. Ouldamer et al. [2] found the median time interval between hysterectomy and first symptoms of FTP to be 122 days, with a remarkable maximum interval time as late as 32 years after the index surgery [2].

Although menopausal status itself seems to be a risk factor for inadequate vaginal wound healing, increasing age does not appear to be related with FTP [2,7]. The mean age of the presented cases was approximately 40 years [2]. This is plausible as early sexual activity and sexual frequency are among the main suggested risk factors. Likewise, the present case was a 42-years-old female with profuse foul-smelling vaginal discharge and the interval between the index surgery and FTP was nearly 150 days, similar to most of the previously reported cases.

Most of the presented cases were after TAH; however, this can also be related to higher numbers of abdominal approach compared to other hysterectomy approaches. In the presented case, FTP occurred 5 months after vaginal hysterectomy. During the vaginal hysterectomy, different approaches to the peritoneal and vaginal cuff closure may contribute to FTP. Moreover, peritoneal closure has been conducted less often after vaginal hysterectomy, which may also be related to the FTP. Since the first description of FTP after vaginal hysterectomy in 1902, and the first description of FTP after abdominal hysterectomy in 1955, there is an increasing trend among laparoscopic hysterectomies with significant benefits in terms of shortened healing process and reduced overall costs [9-11]. However, it is a well-known condition that the incidence of vaginal cuff dehiscence was significantly higher in women who had TLH than the women who had other modes of hysterectomy. Cuff dehiscence can vary from partial opening of the vaginal wound to serious evisceration of the contents of the abdominal cavity into the vagina. Vaginal cuff dehiscence has been estimated to be 5-10 times higher in laparoscopic procedures [12,13]. As a matter of fact, laparoscopic approach was considered to have a higher risk for FTP [14].

The main putative predisposing factors for the dehiscence at the laparoscopic approach are using energy modalities for the incision and hemostasis of vaginal cuff and surgeon's ability and working conditions [13]. Energy modalities provide comfort during the surgery, at the cost of more tissue necrosis [14]. The vaginal incision and coagulation by an energy modality may be in relation to improper wound healing. However, there is only limited data regarding the impact of energy or mode of energy on wound healing for prevention of post-hysterectomy dehiscence [14].

Most reports on FTP are case reports and case series. Since the surgical techniques to minimize the risk of FTP are not well-established, existing data on vaginal cuff dehiscence may provide evidence for FTP. One major limitation in the literature is in the definition of the ideal operation technique for vaginal vault incision and repair. As a common opinion, general surgical principles like preservation of tissue quality and avoiding tissue destruction with a rigorous incision closing should be carried out. Preoperative evaluation of vaginal infections and perioperative antibiotic prophylaxis can also reduce the cuff cellulitis or abscess [15].

Various surgical approaches (vaginal, laparoscopic, abdominal, or a combination) have been described for the repair of FTP in the literature, but no standard technique exists [2]. Surgical planning depends upon the patient's condition and the surgeon's choice according to the appearance of FTP. In the present case, salpingectomy was carried out via vaginal approach and the patient recovered uneventfully in 2 weeks.

Conclusion

Since hysterectomy is the most common gynecologic surgical intervention, it is important to be aware of even uncommon complications. The clinical presentation can vary by the portion of prolapsed tubal segment into the vaginal cavity and it can be misdiagnosed as vaginal vault granuloma, especially if only a very small portion of tubal segment has prolapsed.

What is new?

Most of the presented cases were after abdominal hysterectomy; however, this can also be related to higher numbers of abdominal approaches compared to other approaches, until recently. In the presented case, FTP occurred 5 months after vaginal hysterectomy. During vaginal hysterectomy, different approaches to the peritoneal and vaginal cuff closure may contribute to FTP. Since the surgical techniques to minimize the risk of FTP are not well-established, preventive strategies may inspire from existing data on vaginal cuff dehiscence. One major limitation in the literature is in the definition of the ideal operation technique for the vaginal vault incision and repair and it will be demonstrative to discuss this patient.

List of Abbreviations

FTP	Fallopian tube prolapse
TAH	Total abdominal hysterectomy
TLH	Total laparoscopic hysterectomy

Consent for publication

Written informed consent was obtained from the patient.

Ethical approval

Ethical approval is not required at our institution for publishing an anonymous case report.

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Summary of the case

1	Patient (gender, age)	42-years-old, female
2	Final diagnosis	Vaginal FTP
3	Symptoms	Vaginal discharge
4	Medications	Antibiotics
5	Clinical procedure	Surgery
6	Specialty	Gynecology