Gynecol Surg (2008) 5:303–305
DOI 10.1007/s10397-008-0373-2

COMMUNICATION

Vaginoperitoneal fistula and fallopian tube prolapse after total laparoscopic hysterectomy

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Received: 25 November 2007 / Accepted: 17 January 2008 / Published online: 6 March 2008
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Abstract Vaginoperitoneal fistula and fallopian tube prolapse are uncommon after hysterectomy, whether vaginal or abdominal. The main symptoms are leukorrhea and discharge that mimic urinary incontinence. A case report with a complex history of endometriosis, several surgical procedures, and total laparoscopic hysterectomy (TLH) is presented, and the diagnostic procedures and laparoscopic repair are discussed.

Keywords Fistula · Incontinence · Prolapse · Hysterectomy

Fistula formation between the peritoneum and vagina after hysterectomy may occur [1, 2]. Weeks or months after hysterectomy, the presenting symptoms may be leukorrhea, vaginal discharge, lower abdominal pain, or symptoms related to sexual intercourse, such as pain or bleeding.

When urinary leakage has been excluded and the diagnosis is suspected or established, the treatment is surgical with a laparoscopic and/or vaginal approach [2–4]. The fistula and the inflammatory tissue are removed, and the defect is adequately closed, with apparent excellent results, as reported in the literature.

Vaginoperitoneal fistula and fallopian tube prolapse have previously been described after both vaginal and abdominal hysterectomy. In this report, we present the same condition after total laparoscopic hysterectomy (TLH).

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Case report

The patient was a 35-year-old nulliparous woman who previously had undergone laparoscopy three times because of endometriosis and uterine fibroids. Previously, the right ovary and fallopian tube had been removed, as well as resection of the left ovary and myomectomy. She had persistent abdominal pain, endometriosis, and uterine fibroids, and a total laparoscopic hysterectomy (TLH) was subsequently performed last year. The vaginal cuff was closed by interrupted resorbable sutures. During the postoperative course, a small hematoma measuring 36×32 mm was described close to the left ovary, but it needed no treatment intervention.

She was readmitted seven months after the last surgery because of vaginal discharge and leukorrhea, and a small area with granulation tissue was detected in the upper left part of her vagina. A possible fistula to the urinary system was excluded after creatinine analysis of the vaginal leukorrhea and cystoscopy, including dye test with methylene blue in the bladder and vaginal inspection. Magnetic resonance imaging (MRI) examination showed a prolapsed fallopian tube and a possible fistula between the tube and the vagina (Fig. 1).

The lysis of adhesions was performed by a laparoscopic approach, and a 5-mm fistula to the vagina was identified from the left part of the vaginal vault to the lateral end of the fallopian tube (Fig. 2). The tube was dissected and removed, and the vaginal vault was resected and closed by separate sutures. The postoperative time was uneventful, and she was asymptomatic at follow-up controls.

Discussion

Fallopian tube prolapse has infrequently been reported to occur after abdominal and vaginal hysterectomy, it being more

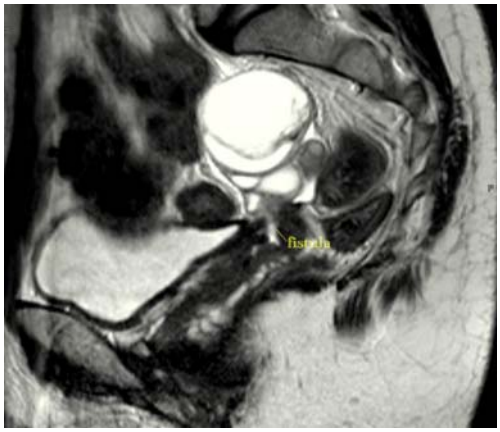

Fig. 1 Preoperative magnetic resonance imaging (MRI) showing the fistula between the vagina and the left adnexa, probably the left fallopian tube

common after the vaginal approach [2]. In this report, we describe the same condition after TLH. Rosenthal and Cheung [5] noted the importance of the careful closure of vaginal defects during operative laparoscopy, and the possibility of an increased number of fallopian tube prolapses in the future as TLH is more frequently performed.

Various theories have been presented to explain why fallopian tube prolapse occurs after hysterectomy [6, 7]. Hematoma or pelvic infection following surgery, insufficient cuff closure, the use of drains, several systemic disorders, and possibly some medical therapy may be of importance. In addition, the left free fallopian tube may move close to a small opening in the vaginal cuff, and the pressure gradient between the abdominal cavity and vagina may facilitate the tubal prolapse.

The symptoms associated with fallopian tube prolapse may arise late, from weeks to months after hysterectomy. They may mimic urinary incontinence, and a workup to rule out urinary incontinence is needed [1]. Furthermore, vesicovaginal and ureterovaginal fistulas may complicate the postoperative period. In addition, infrequent causes of vaginal leukorrhea and discharge after hysterectomy include: colovaginal fistula, lymphatic vaginal fistula, fistula from the fallopian tube remnant, and the leakage of peritoneal fluid.

Surgical treatment is necessary in this condition, with the removal of inflammatory and granulated tissue and the repair of the vaginoperitoneal fistula. In our opinion, the preferable surgical approach is laparoscopic, but successful surgery may be achieved by a laparoscopic, vaginal, or combined approach. The challenge is, however, to prevent vaginoperitoneal fistula and fallopian tube prolapse from occurring after hysterectomy. The prevention of pelvic hematoma, use of prophylactic antibiotics, careful suturing of the vaginal cuff, and avoiding vaginal vault drains are probably of great importance. Coincidal salpingectomy or fixation of the adnexa in the pelvic lateral wall in connection with hysterectomy is more questionable.

In conclusion, the entity with vaginoperitoneal fistula and fallopian tube prolapse must be considered during the evaluation of posthysterectomy "incontinence" or related symptoms.

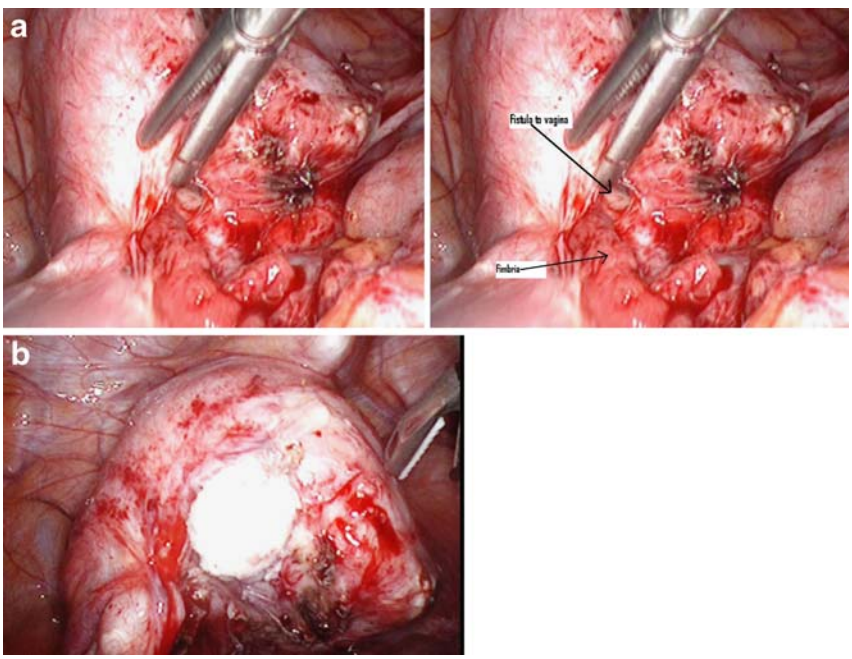

Fig. 2 **a** Perioperative laparoscopic view of the pelvic area before repair, pointing at the fistula and the fallopian tube. **b** After the removal of the fistula tract, with a pad in the upper vagina, before suturing

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