Arch Gynecol Obstet (2009) 279:225–227
DOI 10.1007/s00404-008-0683-7

CASE REPORT

Uterocutaneous fistula after surgical treatment of an incomplete abortion: methylene blue test to verify the diagnosis

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Received: 25 December 2007 / Accepted: 5 May 2008 / Published online: 28 May 2008
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Abstract
Introduction Uterocutaneous fistula is an extremely rare clinical condition that can be seen after pelvic or uterine surgery. It can also complicate some obstetric procedures.
Case We report of an unusual case of an uterocutaneous fistula that developed in a multiparous woman after surgical evacuation of an incomplete first trimester septic abortion. The fistula tract was depicted on computed tomography, and to verify the diagnosis methylene blue was given through a transcervically introduced uterine catheter, and blue dye flow out through the external opening of fistula was observed. At laparatomy fistula tract was completely excised along with the enclosing omentum. Postoperative recovery and follow-up were uneventful.
Discussion Possible mechanisms of development of such a rare condition, and diagnostic and treatment options are discussed.

Keywords Methylene blue test · Septic abortion · Uterocutaneous fistula

Introduction

Uterocutaneous fistula is a rare entity which usually results from postpartum and postoperative complications [1]. Other causes of this condition are intrauterine contraceptive devices and endometriosis [1–3]. Here we report an unusual case of uterocutaneous fistula that developed after an incomplete medical abortion and described the use of methlyene blue test to confirm the diagnosis.

Case

A 30-year-old multiparous woman was referred to our clinic for a tissue defect on the scar of a previous cesarean section that bled during menstruation. Her obstetric history revealed one vaginal delivery and one cesarean section performed through a low uterine incision 1 year ago. Additionally, 6 months ago, the patient underwent a revision curettage for removal of rest placental and fetal tissues after spontaneous abortion at the 8th gestational week. A mucopurulent malodorous discharge from the cervix was noted during the curettage and treated with intravenous antibiotics. After 3 months, the patient began to suffer from pelvic pain, fever, and a painful swelling on cesarean scar that bled with menstruation. Pelvic examination and ultrasonography were unremarkable but abdominopelvic computed tomography demonstrated a 75 × 32 mm right adnexal mass, which was considered as a pelvic abscess. Additionally, a fistula tract that extended between the uterine fundus and cesarean scar was visualized (Fig. 1). A submucous uterine fibroid, 3 cm in diameter was also noted. The pelvic abscess was successfully treated with percutaneous drainage; however, intermittent bleeding from the external opening of fistula continued and the patient was referred to our hospital. The physical examination revealed an external opening of fistula on the cesarean scar. On ultrasonography, the fistula tract and submucous fibroid were observed, but no pelvic mass was seen. A pediatric foley catheter was introduced transcervically into the endometrial cavity and the methylene blue given was observed to pour out from the external opening of fistula. Intravenous antibiotic therapy was started and an

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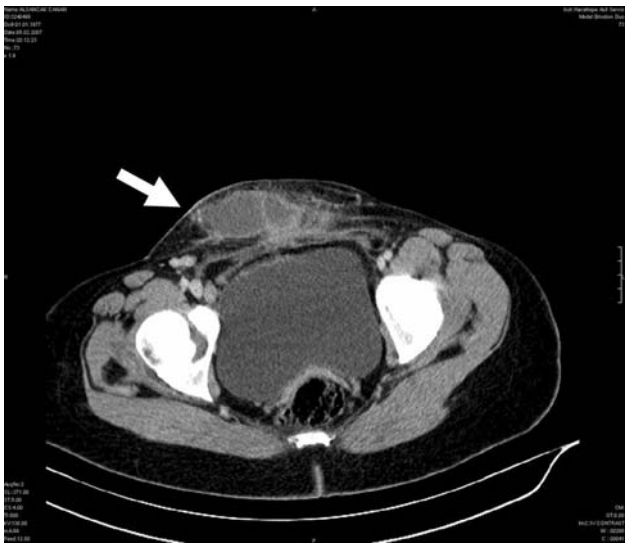

Fig. 1 Abdominopelvic tomography scan; *white arrow* shows fistula tract and the external opening of fistula

exploratory laparotomy was performed. At laparotomy, we observed an uterocutaneous fistula tract extending from the right cornual part of the uterus to the abdominal wall, which was totally encircled by omentum. We excised the fistula tract as a whole along with the enclosing omentum. The infected and necrotic submucous fibroid was also removed. After an uneventful postoperative period the patient was discharged and at the follow-up visit 6 weeks after the operation, she was healthy without any of the preexisting symptoms.

Discussion

Early pregnancy failure is a common event and complicates upto 15% of clinically recognized pregnancies. Surgical treatment has been the method of choice for years, and it is effective but is also associated with serious complications [4]. Although medical treatment can be used in most of the cases, in case of septic abortion, immediate surgical treatment should be performed and appropriate antibiotic treatment should be instituted to prevent serious complications including sepsis [5]. Among the most important complication of surgical treatment of abortion is uterine perforation, the incidence of which varies between 0.75 and 15 per 1,000 woman, and inexperienced operator appears to be the most important risk factor [6].

Fistula connecting the endometrial cavity and abdominal wall seems to be a very rare event. Possible mechanisms of uterine fistula formation are surgical or obstetrical factors such as having history of multiple abdominal surgery, use of drains, or incomplete closure of uterine wound during cesarean section [1]. Dragoumis et al. [1] reported a case of uterocutaneous fistula which developed on cesarean scar due to an endometriotic nodule. Promsonthi et al. [7] reported a case of uterocutaneous fistula diagnosed 3 months after termination of a term abdominal pregnancy where placenta and fetal membranes had been left in situ. At laparotomy, the authors observed an 8-cm mass that was densely adherent to the right uterine fundus and right fallopian tube. Surgical treatment included subtotal hysterectomy, right salpingo-oophorectomy and excision of the placental mass and the fistula tract. In a very recent report, Shukla et al. [8] reported a 20-year-old woman who underwent an abdominal surgery for cryptomenorrhea 3 years ago and developed menstrual discharge from the abdominal scar. A fistula tract lining between the infraumbilical midline scar and the uterus was demonstrated on contrast study. After vaginoplasty, fistula tract was removed and cervicovaginal communication was established.

In our case, we suppose that the possible mechanism of development of uterocutaneous fistula is the formation of pelvic abscess that might have occurred due to uterine perforation at the time of evacuation. To our knowledge, only one case of uterocutaneous fistula was declared before, that developed after septic abortion associated with laminaria use [2]. Having a history of bleeding from the fistula tract that accompanies menstrual bleeding is almost pathognomonic for the diagnosis of uterocutaneous fistula, whereas isolated painful endometriotic nodules on surgical scars should be excluded. The fistula tract can also be depicted by means of imaging techniques especially computed tomography or magnetic resonance imaging. When required, a fistulogram can be performed. Alternatively, it is easier to give methylene blue dye by means of a catheter inserted through the cervical canal in an outpatient basis by a gynecologist. If blue dye is observed to pour out of the external opening of fistula, the diagnosis is established. The definitive treatment includes surgical excision of the fistula tract when there is a wish for fertility uterus and adnexae can be preserved. Due to dense adhesions and accompanying pelvic abscess in most of the cases, hysterectomy with or without removal of the involved ovary and fallopian tubes should be the choice of treatment especially if there is no wish for future childbearing.

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