Tuboovarian abscess mimicking malignancy: Report of two cases

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Abstract: Tuboovarian abscess is a well-known sequela of acute or chronic salpingitis. In a small percentage of patients, these inflammatory masses compress or even rupture into the adjacent viscera, thus simulating the condition of pelvic malignancy, particularly when the clinical presentations are indolent. We describe two cases of tuboovarian abscess mimicking malignancy. Case 1: A 39-year-old woman with an intrauterine device had a clinical presentation mimicking an exophytic submucosal colorectal tumor with suspicious mucosal invasion. She complained of tenesmus but did not experience fever or adnexal tenderness. A right tuboovarian abscess with fistula formation into the rectosigmoid colon was noted during laparotomy. Case 2: A 46-year-old woman with an intrauterine device had a preoperative diagnosis of uterine myoma with degeneration. At laparotomy, an omentum cake with dense pelvic adhesions was noted. Malignancy appeared to be present, and debulking surgery was performed. The final pathologic examination revealed bilateral chronic tuboovarian abscesses and focal omental abscess.

Case Reports

Case 1

A 39-year-old woman, gravida 2, para 2, was referred to our hospital because of a 4-week history of lower abdominal pain, tenesmus, and small caliber stool. Pelvic malignancy had been diagnosed prior to referral. She denied having fever, chills, increased vaginal discharge, or dysuria. Her medical history and menstrual history were unremarkable. Upon examination, she was slim and alert and appeared ill. Findings during general physical examination were unremarkable. Her temperature was 36.8°C; blood pressure, 120/70 mm Hg; and heart rate, 72 beats per minute.

Although pelvic examination revealed a right adnexal mass the size of a fist, there was no pelvic tenderness or increased vaginal discharge. An intrauterine device was found incidentally and the patient recalled having it in place for 3 years. Digital examination revealed external compression into the colon [3]. In addition, the use of an intrauterine device has been shown to be a risk factor for pelvic inflammatory disease [4]. This report describes two women with intrauterine devices whose tuboovarian abscesses were misdiagnosed as malignancy before and during surgery, respectively.


Key words: tuboovarian abscess fistula formation omentum cake

Tuboovarian abscess is a well-recognized complication of acute or chronic pelvic inflammatory disease. Although compression or even drainage into the adjacent viscera such as the bladder and rectosigmoid has been reported, these conditions are exceedingly rare [1, 2]. Diagnosis of tuboovarian abscess can be difficult when signs and symptoms are not suggestive of pelvic inflammatory disease. The abscess can mimic ovarian cancer involving a large pelvic mass with external compression into the colon [3]. In addition, the use of an intrauterine device has been shown to be a risk factor for pelvic inflammatory disease [4]. This report describes two women with intrauterine devices whose tuboovarian abscesses were misdiagnosed as malignancy before and during surgery, respectively.

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and colorectal cancer (CA-125 and carcinoembryonic antigen) were near the upper normal limits.

She underwent laparotomy for suspected malignancy. The operative findings were a right tuboovarian abscess with an inflammatory mass measuring 6 x 4 x 3 cm (Fig. 2), infiltrating into the colorectum with fistula formation (Fig. 3).

There was about 100 mL of ascites with a serosanguinous appearance. Cytology was negative for cancer cells. Right salpingo-oophorectomy, excision of the inflammatory mass, and repair of the fistula were then carried out.

The pathology report confirmed a right tuboovarian abscess. Culture of the inflammatory mass grew viridans streptococci. The patient was given cefoxitin and doxycycline after the operation and was discharged 1 week later.

**Case 2**

A 46-year-old woman, gravida 4, para 2, was hospitalized for a scheduled operation for suspected multiple uterine myomas with degeneration in one of them. She had a 6-month history of menometrorrhagia and multiple myomas by ultrasound 4 months before admission. Prior to the scheduled operation, a second pelvic ultrasound examination again disclosed four uterine myomas with different sizes and positions, together with a hyperechoic intrauterine device. The largest myoma was 7.32 x 6.6 x 5.29 cm, and color Doppler ultrasound revealed highly resistant blood flow within it. She did not have fever, chills, or leukocytosis.

Upon opening the peritoneal cavity during laparotomy, a dense peritoneum was encountered. After opening the peritoneal cavity, a 16 x 10 x 2 cm, hard, thickened, omentum cake with multiple miliary seedings was noted (Fig. 4). There were dense pelvic adhesions between the bladder, the uterus, the bilateral adnexae, and the omentum cake. Four uterine myomas measuring 7 x 6 x 5 cm, 5 x 4 x 3 cm, 5 x 4 x 3 cm, and 3 x 3 x 2 cm were also found. The largest myoma was soft, adhered to the omentum, and showed malignant degeneration. The omentum was sent for pathologic examination. Frozen sections revealed chronic inflammatory changes with focal...
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Fig. 4. Case 2. A firm, thickened omentum (arrow) measuring 16 x 10 x 2 cm was noted during the operation. Multiple hard, miliary seedings can be seen over the whole omentum.

Abscess formation. Total hysterectomy and bilateral salpingo-oophorectomy were performed and pathologic analysis revealed multiple uterine leiomyomas and bilateral tuboovarian abscesses. Moreover, dense fibrous adhesions were scattered over the uterus, the adnexae, and the omentum.

Discussion

Tuboovarian abscess is found most frequently in young, sexually active women and is regarded as a complication of pelvic inflammatory disease. Generally accepted indications that surgery is necessary for a tuboovarian abscess are signs of a ruptured abscess that can be readily drained extraperitoneally, failure to respond to medical therapy, and an uncertain diagnosis. Compression or even drainage of the tuboovarian abscess into the adjacent visceras such as the bladder, ureter, and rectosigmoid colon has been reported [1, 2, 5], and was misinterpreted as pelvic malignancy such as colorectal or ovarian cancer. On the other hand, other pelvic pathologies such as diverticulitis have been reported to simulate tuboovarian abscess [6]. Thus, the diagnosis of tuboovarian abscess is sometimes difficult, especially when the signs and symptoms are not suggestive of an existing infection.

Our first patient had lower abdominal pain accompanied by tenesmus and small caliber stool, but no fever or chills. The clinical characteristics and findings of imaging studies in this patient were highly suggestive of a colorectal tumor. The only clue to a correct diagnosis before the operation was the placement of an intrauterine device. The second patient underwent an operation for suspected myoma uteri. At operation, an omentum cake was found, and differentiating the patient’s disease from the suspected gynecologic malignancies was not possible. Pelvic tuberculosis can simulate ovarian carcinoma clinically by the presence of miliary peritoneal seedings and an omentum cake [7]. Histopathology was the basis of correct diagnosis during the operation and guided further treatment.

In cases of tuboovarian abscess, excision of the inflammatory mass plus drainage or drainage alone are adequate if further fertility is wished. However, debulking surgery is necessary to deal with malignancy such as ovarian cancer or endometrial cancer. Antibiotic therapy should be used in cases of tuboovarian abscess; cytotoxic chemotherapy should be used only as adjuvant therapy for confirmed malignancy.

Sexually transmitted microorganisms such as Neisseria gonorrhoeae and Chlamydia trachomatis account for most cases of pelvic inflammatory disease. Respiratory pathogens such as Haemophilus influenzae, Group A streptococci, pneumococci, or endogenous microorganisms are occasionally isolated. In our first case, viridans streptococci was the causal microorganism of the tuboovarian abscess.

Among the viridans streptococci, the Streptococcus milleri group (including three different species: S. intermedius, S. constellatus, and S. anginosus) forms part of the normal flora of the mouth, gastrointestinal tract, and genitourinary tract and is often associated with purulent infections. In one study, S. anginosus was the most frequently identified species of the S. milleri group in gastrointestinal tract and genitourinary specimens [8]. However, S. anginosus is more commonly seen in obstetric infections than in nonobstetric infections of the female genital tract. A MEDLINE search from 1966 to the present using the keywords ‘viridans streptococci’, ‘Streptococcus anginosus’, ‘Streptococcus milleri’, ‘pelvic inflammatory disease’, and ‘tuboovarian abscess’ suggested that viridans streptococci rarely cause tuboovarian abscess [9].

The laboratory in our hospital did not differentiate the species in the first case. In the second case, no culture was performed because all of the inflamed tissue had been resected for pathologic examination. Interestingly, both patients had carried an intrauterine device for at least 10 years. Therefore, an intrauterine device should lead to suspicion that a locally invasive pelvic mass may be due to a tuboovarian abscess as well as malignancy.

References