

Coexistence of genital tuberculosis and ovarian serous cystadenofibroma in a young female patient: a case report

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Abstract

Most cases of female genital tuberculosis (TB) are asymptomatic and are thus difficult to diagnose. Coexistence of genital TB and ovarian serous cystadenofibroma (OSCAF) is rare and easily ignored or misdiagnosed. We report a 26-year-old woman with coexistence of genital TB and OSCAF, and with an adnexal mass detected by B-ultrasound. Laparoscopic biopsy of diffuse miliary white nodules was performed on the surface of the peritoneum and both fallopian tubes. Right ovarian cystectomy was performed. Postoperative pathology showed that the right ovarian mass was a benign serous cystadenofibroma, and both fallopian tubes and miliary white nodules on the surface of pelvic organs showed chronic granulomatous inflammation. Polymerase chain reaction for *Mycobacterium tuberculosis* and acid-fast bacilli culture were positive in biopsies of the fallopian tubes, omentum, and peritoneum. The patient received anti-TB treatment after surgery. Six months after the operation, the patient had no abdominal pain and no major changes in menstruation. Our findings suggest that a timely operation is required for patients with an adnexal mass. During surgery, even if the lesion is similar to a malignant tumor, the surgical approach needs to be cautiously chosen for young patients without children. The patient's postoperative fertility must be taken into consideration.

Keywords

Ovarian serous cystadenoma, genital tuberculosis, fallopian tube, miliary white nodule, peritoneum, fertility, abdominal pain

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Introduction

Genital tuberculosis (TB) in women is a chronic disease with low-grade symptoms and up to 11% of women with genital TB may be asymptomatic.¹ Many women with genital TB present with atypical symptoms similar to other gynecological conditions, such as a poor general condition, menstrual dysfunction, and puberty menorrhagia; genital TB even mimics a malignant tumor.^{2,3} Ovarian serous cystadenofibroma (OSCAF) is a type of tumor derived from epithelial fibrous interstitial cells of the ovarian surface and below. OSCAF is a rare disease with similar morphology to ovarian cystadenoma and it is easily misdiagnosed.^{4,5} We report a 26-year-old woman with coexistence of genital TB and OSCAF in whom an adnexal mass was detected by B-ultrasound. During the operation, diffuse miliary white nodules were found on the surface of the peritoneum, diaphragm, liver, and bilateral fallopian tubes. The right ovarian tumor cystic wall was thickened and contained papillary tissue, which was similar to a malignant tumor.

Case presentation

A 26-year-old unmarried and sexually inexperienced woman was admitted with the diagnosis of an adnexal mass that was detected more than 6 years previously by B-ultrasound and she had right lower abdominal pain for 8 days. B-ultrasound had been performed 6 years previously because of dull abdominal pain. The diameter of the pelvic mass found by B-ultrasound was approximately 3 cm. The patient occasionally suffered from dull abdominal pain in the past 6 years, but she did not receive any special treatment or periodic review because the abdominal pain was not frequent or serious, and it was spontaneously relieved.

The patient visited the hospital because of right lower abdominal pain for 8 days. A rectal examination showed a cystic mass of approximately 7 cm at the right adnexal area with a clear border, poor motion, and mild tenderness. Gynecological transrectal ultrasonography showed a hypoechoic mass of 7.2×7.0 cm in the right ovary with a thickened cyst wall (Figure 1). Preoperative routine urine and stool analysis, an electrocardiogram, liver and renal function, and a chest radiograph showed normal results. Serum carbohydrate antigen (CA)-125 and CA-199 levels were slightly increased with values of 65.30 U/mL and 63.00 U/mL (normal values: 35 U/mL and 37 U/mL), respectively.

On 26 December 2018, the patient underwent laparoscopic exploration, which showed pale yellow ascites (50 mL). Diffuse miliary white nodules were found on the surface of the peritoneum, liver, omentum, and diaphragm. The ampulla of the bilateral fallopian tubes was enlarged, segmental, and hard. There was a mass of approximately $10 \times 8 \times 7$ cm in the right ovary (Figure 2). There was adhesion in the bowel, uterus, diaphragm, and peritoneum (Figure 3). We initially suspected that the mass was peritoneal carcinomatosis related to ovarian cancer or an ovarian borderline tumor. We also considered the possibility of TB.

Because the patient was young, we performed right ovarian cystectomy and bilateral salpingotomy. The right ovarian mass contained 400 mL of yellow, slightly viscous liquid, and the wall of the cyst contained a small amount of transparent papillary tissue. Both fallopian tubes showed a thickened wall and contained some cheesy, gray-white material and papillary tissue. The mass appeared to be ovarian borderline papilloma or papillary carcinoma. All abnormal tissues were biopsied and an intraoperative frozen pathology examination was performed.

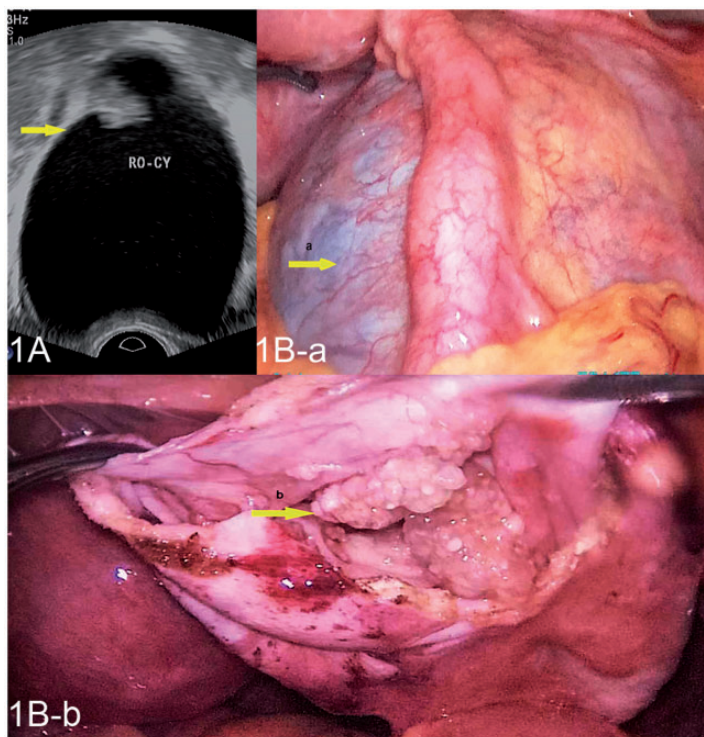


Figure 1. a: Preoperative transrectal B-ultrasound. The yellow arrow indicates a right ovarian cyst. b: Laparoscopic surgery (a: surface of the right ovarian cyst; b: a papillary projection solid component in cystic tumors).

This examination showed that the right ovarian mass was benign serous cystadenofibroma, and histological analysis of both fallopian tubes and the miliary white nodules on the surface of pelvic organs showed chronic granulomatous inflammation. Polymerase chain reaction for *Mycobacterium* TB and acid-fast bacilli culture were positive for biopsies of the fallopian tubes, omentum, and peritoneum (Figure 4a, b), which confirmed the diagnosis of pelvic TB. Furthermore, the T-cell test for TB infection was positive. Therefore, the patient was administered an intravenous drip of isoniazid 0.3 g immediately after the surgery to prevent the spread of TB. Rifampicin (0.45 g once daily), ethambutol hydrochloride (0.75 g once daily), and

pyrazinamide (0.5 g three times daily) were administered to the patient on the second day after surgery for 6 months.

A chest computed tomographic scan was performed on the third day after surgery and it showed high-density calcified nodules in the left upper lobe of the lungs. No antacids were observed in the sputum smear, but a tuberculin test was positive.

After surgery, the patient recovered well and was discharged. Follow-up gynecological and transvaginal B-ultrasound examinations at 1 and 3 months showed a normal menstrual period, no recurrence, no abdominal pain, and no major changes in the patient. Telephone follow-up and outpatient follow-up at 1 month showed that

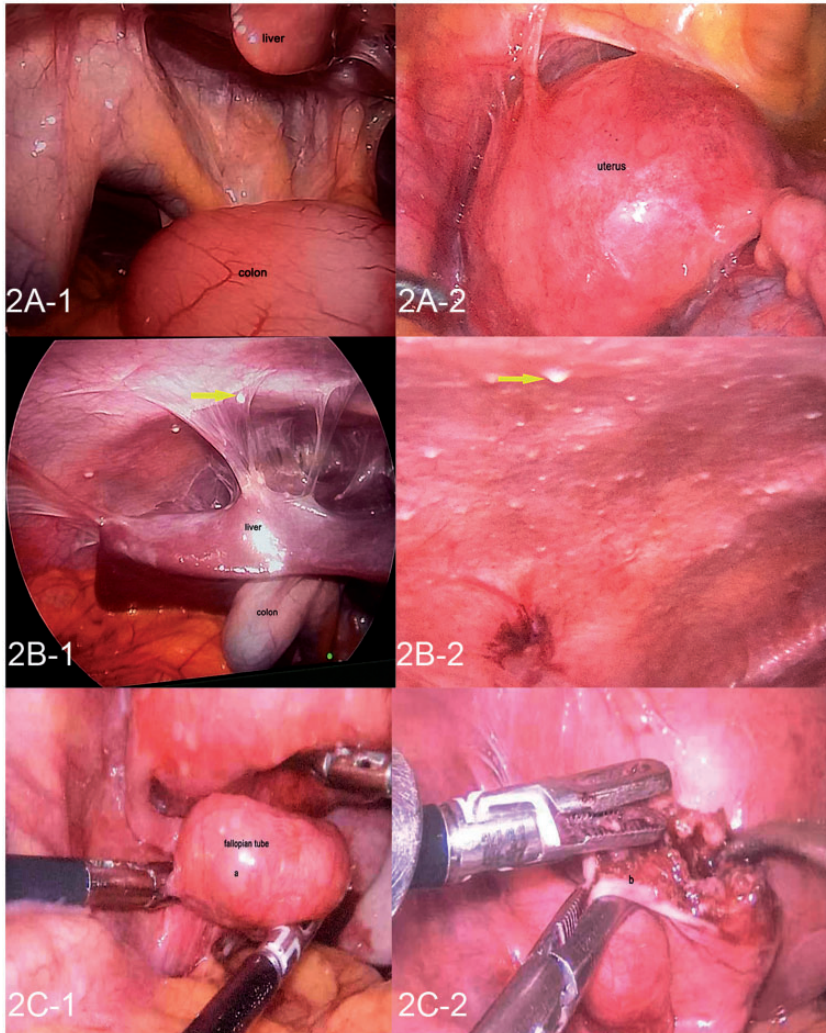


Figure 2. a: Laparoscopic surgery shows adhesions of the pelvic and abdominal cavities. b: Diffuse miliary white nodules on the peritoneal surface around the liver and abdomen can be seen. The arrows indicate miliary white nodules. c: An enlarged and hard fallopian tube with a solid area and cheesy, gray-white material (arrow) can be seen (a: enlarged and hard fallopian tube; b: cheesy, gray-white material in the fallopian tube lumen).

serum CA-125 and CA-199 levels had decreased to normal.

Discussion

We present a case of a 26-year-old woman who was admitted with an adnexal mass

detected by B-ultrasound. Laparoscopic surgery was performed to remove the right ovarian mass and the genital TB lesion was biopsied. The pathological diagnosis was genital TB and OSCAF.

Genital TB in women is a chronic disease with low-grade symptoms, but up to 11%

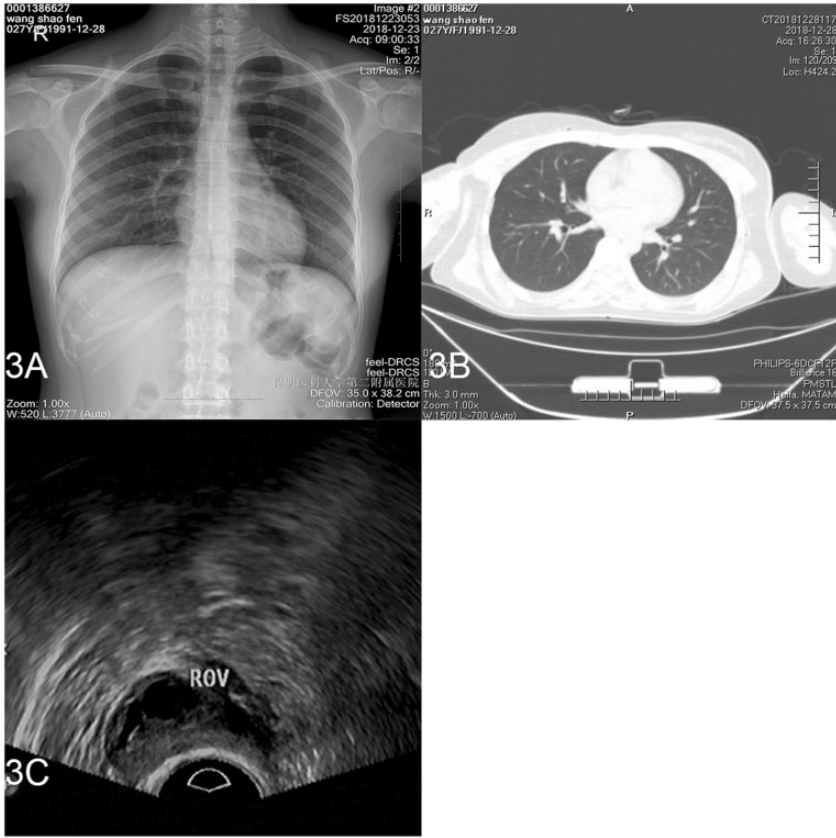


Figure 3. a: Preoperative chest X-ray is normal. b: A postoperative chest computed tomographic scan does not show tuberculosis. c: Transrectal B-ultrasound postoperatively shows that the right ovary is normal.

of women with genital TB are asymptomatic.¹ The main long-term complication of genital TB is the risk of infertility. The rate of genital TB affecting the fallopian tubes is 90% and the 1-year pregnancy rate is approximately 20% after a full 6-month treatment.^{2,3} Therefore, timely detection and treatment of female genital TB are important.

Our patient only had dull abdominal pain occasionally, and she denied other positive symptoms associated with TB and any history of contact with other patients with TB. However, she had not been vaccinated against TB. Her menstrual history and a X-ray chest examination were normal;

therefore, there was no evidence to suggest TB. Consequently, the diagnosis of genital TB was difficult because TB reaches the genital tract primarily by hematogenous spread and dissemination from the lungs, which is a common primary focus. Other infections include sexual transmission, intestinal TB, peritoneal TB, lymph node TB, bone TB, and urinary TB. Epidemiological studies have shown that genital TB in the female reproductive system is mainly transmitted through hematogenous metastasis and local dissemination,¹ which is more common in young women in developing countries. In our patient, chest computed tomography did

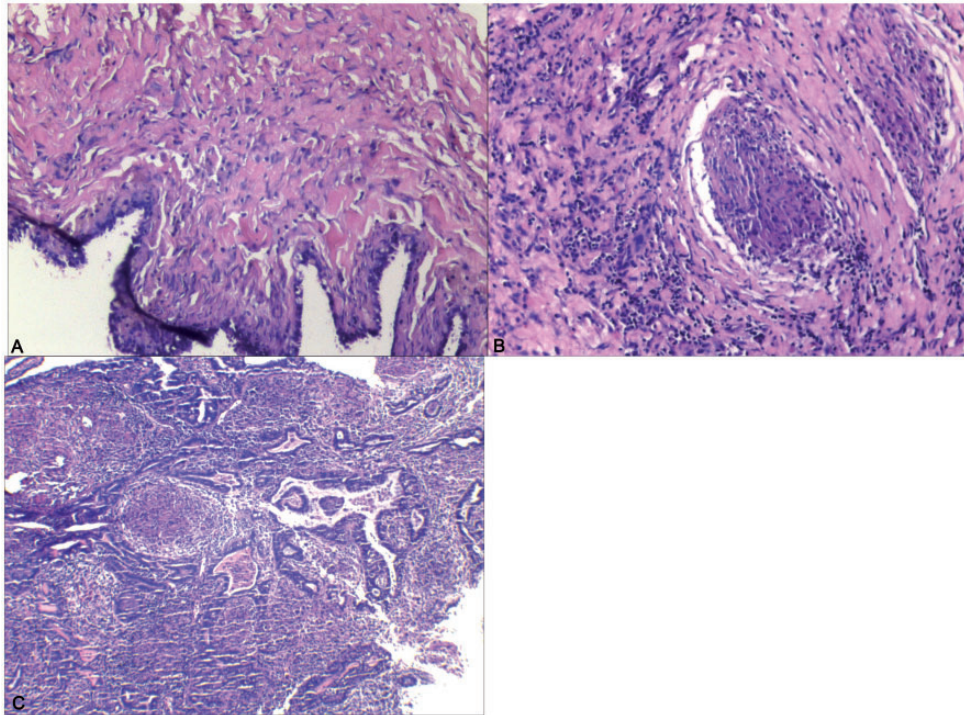


Figure 4. Hematoxylin and eosin-stained sections. a: Ovarian serous cystadenofibroma. b: An abdominal tubercle with central caseous necrosis (arrow), surrounded by epithelioid and chronic inflammatory cells ($\times 100$). c: Fallopian tube with central caseous necrosis (arrow), surrounded by epithelioid and chronic inflammatory cells ($\times 100$).

not show TB in the lungs, and the patient came from a rural area of Yunnan Province. Because of the limitations of her living conditions, she might have been unknowingly infected, with transmission to the reproductive system by peritoneal TB. Fortunately, the patient was diagnosed by laparoscopic surgery because of the adnexal mass, and can be treated with an anti-TB approach to avoid more serious consequences, such as infertility, menstrual dysfunction, and digestive TB.

OSCAF is classified into benign, borderline, and malignant according to the degree of cellular differentiation. Making a diagnosis of OSCAF through imaging examinations, such as ultrasound or magnetic resonance imaging, especially when there

are comorbidities, is difficult.⁴ Ovarian cystadenomas are common benign epithelial neoplasms with a good prognosis. Ovarian benign serous tumors account for 16% of all ovarian epithelial neoplasms, two thirds of benign ovarian epithelial tumors, and the majority of serous ovarian tumors. Serous cystadenomas are usually unilocular, but may also be multilocular. Unilateral salpingo-oophorectomy or ovarian cystectomy is an adequate treatment of ovarian cystadenoma.⁵ The results of immunohistochemistry showed that the ovarian serous cystadenofibroma in our patient was benign. The patient was followed up regularly after the operation until the present, and ultrasound has not shown cyst formation in either ovary.

The findings in our case suggest that genital TB needs to be considered for young women with an adnexal mass. When the diagnosis is ambiguous and contradictory, timely surgery is required because genital TB may be misdiagnosed as an ovarian cyst or coexist with an ovarian tumor. Additionally, most patients with pelvic TB may lack a history of symptoms and epidemiology of TB. Even if the lesion is highly similar to a malignant tumor, for young patients without children, there needs to be caution about the surgical options. An intraoperative frozen pathological examination is necessary to help to make a definite diagnosis and have an optimal treatment strategy. Once genital TB was diagnosed, standard anti-TB treatment should be prescribed to prevent the spread and recurrence of TB.

Ethics statement

Informed signed consent was obtained from the patient to publish this case report. The study protocol was approved by the Ethics Committee of the Second Hospital Affiliated to Kunming Medical University.

Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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