

**PELVIC-PERITONEAL TUBERCULOSIS MIMICKING OVARIAN MALIGNANCY: A
CASE REPORT**

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ABSTRACT

Pelvic-peritoneal tuberculosis is a rare extrapulmonary form with clinical and para clinical aspects can mimic advanced ovarian cancer leading to unjustified extensive abdominal and pelvic surgery. We report a case of a 12-year-old Moroccan girl presented with abdominal distension and vague pain. Imaging studies revealed a bilateral ovarian masses and ascites. Her CA125 level was 452 U/ml; ovarian malignancy was highly suspected. Histology from diagnostic laparotomy revealed numerous granulomas with epithelioid and Langhans giant cells. The girl responded well to antituberculosis therapy with normalization of CA125 levels.

KEYWORDS: Pelvic-peritoneal tuberculosis; CA125; ascites; ovarian cancer.

INTRODUCTION

Pelvic-peritoneal tuberculosis (PPT) is considered as a rare extrapulmonary form, but at the same time this location is five or six times more frequent than the location in any other organs.^[1] Because of uncharacteristic symptoms, PPT is often pre-surgically unrecognized and misdiagnosed in the female population as an ovarian cancer. We present a girl with pelvic-peritoneal tuberculosis that underwent laparotomy for clinical, radiological and biological suspicion of advanced ovarian malignancy.

Case presentation

A 13-year-old Moroccan girl, without medical or surgical history, presented in our department for progressive abdominal distension with vague pain appeared 2 months before. She denied any genito-urinary or gastrointestinal symptoms. On general examination, she was afebrile, with normal vital signs. There was no icterus or edema. Physical examination objectified a firm abdomino-pelvic mass with a dull note on percussion. The liver and spleen were not palpable. Based on sonographic examinations, two heterogeneous cystic masses occupied both the ovaries, with septae, measuring 85×61 mm in the right side and 65×71 mm in left side were seen (**fig. 1**). Uterus was normal with middle amount of free fluid in the peritoneal cavity. Contrast-enhanced abdominal and pelvic computed tomography (CT) scans were obtained at 10mm contiguous intervals. They confirmed all sonographic findings with intense enhancement of thin septations and smooth enhanced

thickening of the peritoneum (**fig. 2**). There was no abdominal or pelvic lymphadenopathy. Chest CT showed no lung parenchyma lesions and tuberculin skin test was negative. Laboratory studies revealed elevated leukocyte count (15 000 cells/ml), C reactive protein (45 mg/l) and serum CA-125 level (452 U/ml). Advanced ovarian malignancy was suspected without excluding abdomino-pelvic tuberculosis. An exploratory laparotomy was arranged for diagnostic and therapeutic purposes. Under general anesthesia, a midline subumbilical incision was done where a pelvic hemorrhagic mass without line of cleavage adherent to omentum, bowel and uterus was noticed, swimming in a yellowish ascites (**fig. 3**). Biopsies were taken from peritoneal lesions (**fig. 4**) and both ovarian masses, leaving the uterus and ovaries intact. Histology revealed granulomas with epithelioid and Langhans giant cells (**fig. 5**). Cytological examination of the ascetic fluid failed to show any malignant cells, bacterial cultures were sterile, and adenosine deaminase level was normal. Patient was diagnosed as a case of pelvic-peritoneal tuberculosis and kept on antitubercular treatment (ATT) for 6 months. She responded to treatment and nowadays (after two years of completion of ATT) she has no signs of recurrence.

Comment

Pelvic-peritoneal tuberculosis remains a global health problem, primarily in developing countries. The exact incidence is not accurately known because of asymptomatic nature, bizarre symptoms and lack of reliable confirmatory investigations. The risk factors are

not clear; about 12% of patients with PPT have no risk factors.^[2] The study of Sanches *et al.* revealed that age \geq 40 years old, female gender, HIV infection and previous liver disease were the independent risk factors for this rare extrapulmonary form.^[2] In our case, we did not find any risk factors except endemic area and female gender. The postulated mechanisms by which the tubercular bacilli reach the peritoneum and pelvic cavity are hematogenous spread or direct spread from the contiguous infected sites such as small intestine and lymph nodes or rarely by venereal transmission.^[3] Clinical features of PPT can vary widely from asymptomatic to pelvic pain, infertility, poor general health or menstrual disturbances. It may also present as pelvic mass with ascites when it is difficult to distinguish from ovarian malignancy. It was noted that patient's age may be helpful to diagnose PPT from ovarian cancer. Pelvic-peritoneal tuberculosis mostly occurs at reproductive ages (20-40 years), while ovarian cancer happens at older ages. In addition, weight loss which is uncommon in advanced ovarian cancer is impressive in PPT. Imaging techniques, such as ultrasonography, CT scans and magnetic resonance imaging may not be able to differentiate between these two conditions because of the diffuse nature of the disease and the presence of small implants in peritoneal tuberculosis, as was our case.^[4] A non-specific marker (antigen CA125) is used to diagnose ovarian cancer. It must be remembered however, that its increased serum concentration may also occur in women in other clinical situations: inflammatory process in the pelvis, endometriosis, uterus fibroma, hepatitis, pancreatitis and peritonitis.^[5] Koc *et al.* found elevated levels of antigen CA-125 in 90.1% of women with PPT, and the mean value was 565 U/ml^[6] This result has been confirmed by other researchers.^[7,8] In our case the concentration of antigen CA-125 was high. According to Simsek *et al.*, serial determination of antigen CA-125 concentration in the group of women with PPT may be helpful in the evaluation of disease activity and the response to ATT.^[9] Tuberculin skin test, chest radiographs, and culturing or Ziehl-Neelsen staining of the ascetic fluid are usually insufficient to provide the diagnosis of pelvic and/or peritoneal tuberculosis. An elevated adenosine deaminase (ADA) level in the serous cavity fluid is now considered to be a perfect marker for the diagnosis of tuberculosis.^[10] Several studies report 100% sensitivity and 92 to 100% specificity of ADA for the diagnosis of peritoneal tuberculosis.^[11] False negative results may occur when ascetic fluid total protein concentration is low as in cirrhosis.^[12] It was not raised in our patient. Polymerase chain reaction (PCR) for mycobacterium may be helpful in obtaining results, but this technique is not widely available. Our case presented with suspected ovarian masses, peritoneal effusion and elevated CA 125; ovarian cancer remains the first diagnostic consideration and for this purpose, an exploratory laparotomy was performed (lack of laparoscopic equipment) for pathological study of the abdomino-pelvic lesions. Surgical interventions in suspected ovarian malignancies

should be performed by surgeons familiar with the surgical treatment and staging of ovarian carcinoma. Indications for surgery in patients with pelvic tuberculosis include persistence of pelvis mass and recurrence of pain after completion of treatment; this invasive management must be conservative, particularly in women in reproductive age.



Figure 1: Transabdominal ultrasound objectifying multilocular right ovarian cystic lesion with no demonstrable vascular component swimming in a middle peritoneal effusion.

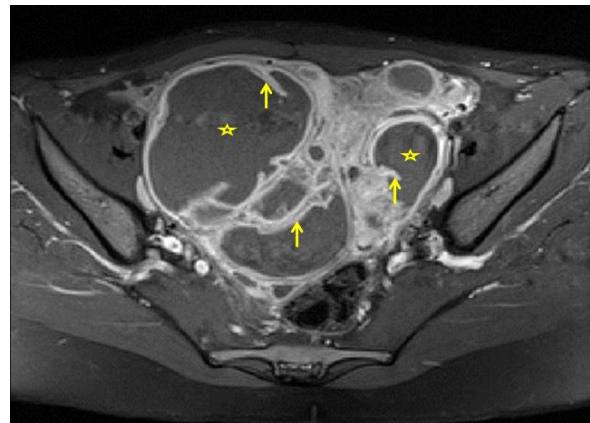


Figure 2: Contrast Enhanced CT scan of the pelvis revealing two multilocular cystic masses (asterisks) with intense enhancement of thick wall, septations (yellow arrows) and peritoneum.

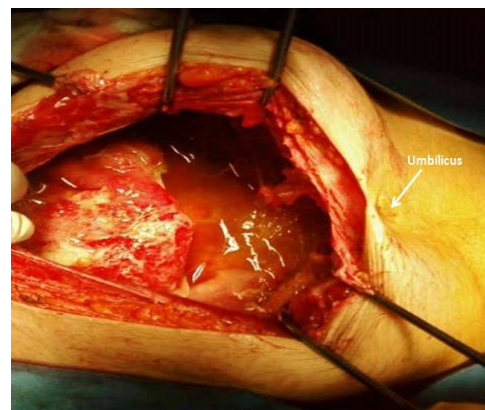


Figure 3: Peroperative view showing pelvic hemorrhagic mass and yellowish peritoneal effusion.

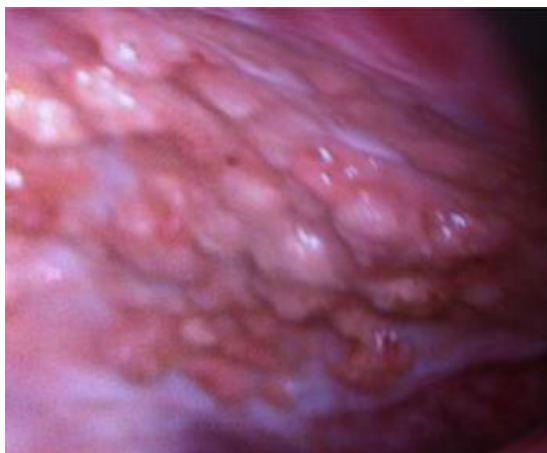


Figure 4: Multiple small nodules disseminated on the peritoneal surface.

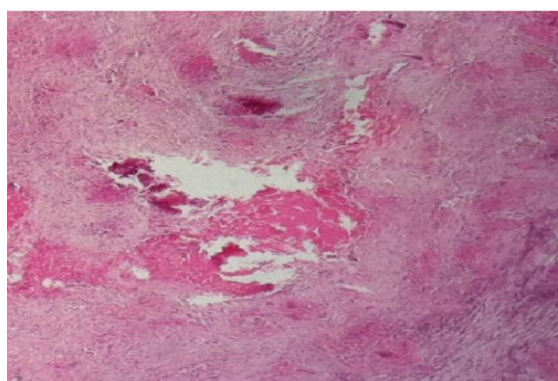


Figure 5: Granulomas with epithelioid and Langhans giant cells (HE×100).

CONCLUSION

When a girl presents with abdomino-pelvic mass, ascites and elevated CA-125 levels, ovarian malignancy is usually suspected. However, pelvic tuberculosis should always be considered in the differential diagnosis in such cases, especially in endemic area. Preoperative investigations often do not give a definitive diagnosis. In spite of thorough investigations, it may not be possible to rule out ovarian malignancy or confirm pelvic-peritoneal tuberculosis without exploratory laparotomy.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest related to this article.

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