

# The Peritoneal Tuberculosis Mimicking Intraabdominal Pathology: Report of Three Cases

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Tuberculosis incidence increases worldwide and it is still a public health problem particularly in developing countries like Turkey. We aimed to present in this report 3 peritoneal/pelvic tuberculosis cases required diagnostic laparotomy due to malignancy or abscess pre-diagnosis based on the presence clinical manifestations, such as pelvic pain, mass, ascites and increased CA-125 level, mimicking pelvic pathology. Peritoneal/pelvic tuberculosis should be absolutely considered in the differential diagnosis in cases with a presumptive diagnosis of pelvic malignancy or abscess with ascites, particularly in developing countries.

**Key words:** Peritoneal tuberculosis, Ovarian malignancy, Adnexial mass, Ascites

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## Introduction

The World Health Organization in early 1990's reported that the incidence of tuberculosis (TB) throughout the world was high and that 95% of cases occurred in developing countries.<sup>1</sup>. Detection of three peritoneal/pelvic TB cases in our clinic during the last three years suggests that TB incidence increases and it is still a public health problem particularly in developing countries like Turkey. Reporting of TB cases mostly from developing countries in the literature also underlines the importance of this disease in those countries.

We want to present in this report 3 peritoneal/pelvic TB cases required diagnostic laparotomy due to malignancy or abscess pre-diagnosis based on the presence clinical manifestations mimicking pelvic pathology.

## Case 1

A 26-year-old patient with G1P1 presented with abdominal swelling and vaginal bleeding. She indicated that she has had an intrauterine device for three years. Physical examination revealed fever (38°C), vaginal high temperature, nonspe-

cific leucorrhoea and extensive pelvic sensitivity. Laboratory examination revealed that the platelet count was 646,000/mm<sup>3</sup>, CRP was 194 mg/dl, erythrocyte sedimentation rate was 94 mm/h, and CA-125 level was 129 U/ml; CA 15-3, CA 19-9 and CEA levels were normal. Chest X-ray revealed minimal pleural effusion in the right hemithorax and a family history of TB was positive. Extensive ascites and heterogeneous imaging of the right adnexial area was detected in the ultrasonographic examination. Empirical antimicrobial treatment was started. Laparotomy due to the presumptive diagnosis of tuboovarian abscess upon persistence of fever and the presence of acute abdomen findings on the third day of treatment, revealed "frozen pelvis" and thickening of peritoneal surfaces. Caseified granulomatous lesions were detected in the histopathological examination of peritoneal biopsies. Peritoneal fluid was exudative in nature and the adenosine deaminase (ADA) level was higher (42.3 U/l). Acid-fast staining bacilli (AFB) and mycobacterial culture was negative. Ground glass densities were detected in the right lung in thorax computed tomography scanning, confirmed by histopathologic diagnosis. The patient received antituberculous treatment with four drugs (isoniazid -INH-, rifampin, pirazinamide, and ethambutol) for one year. Hysterosalpingography on the sixth month of treatment revealed that the uterine cavity was normal, left tubal passage was open and the right tube was occluded. Ultrasonographic ascites seemed to persist after 12 months of treatment. The patient had spontaneous pregnancy at visit in 24<sup>th</sup> months and had a live birth of 2680 g at 38 weeks with Cesarean section due to previous Cesarean. Intraoperative exploration revealed that intestinal adhesions and peritoneal sacs present before antituberculous treatment had disappeared (Figure 1).

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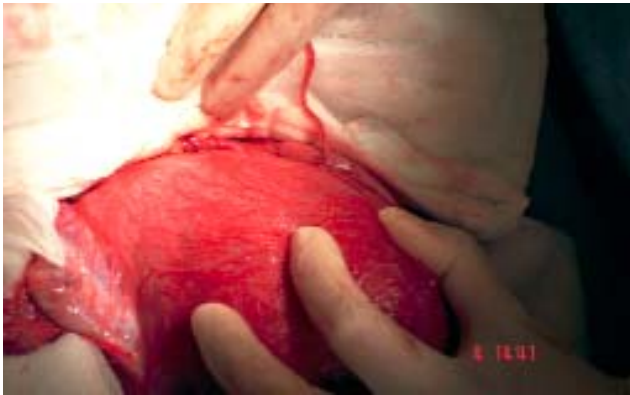


Figure 1: Control ultrasonography image at year one after antituberculous treatment

### Case 2

A 46-year-old patient with G8P8 presented with abdominal swelling; she had fever (38 °C) and extensive ascites in the abdomen. Ultrasonography and computed tomography scanning revealed a 48x30 mm cystic mass with a dense content on the left ovary and a 42x24 mm heterogenous solid mass at the left adnexial region. The patient had thrombocytosis (844,000/mm<sup>3</sup>) and a high level of CA-125 (619 U/mL). Chest X-ray revealed peribronchial thickening and a prior history of TB was denied by the patient. Peritoneal fluid obtained by paracentesis was exudative with benign cytologic findings and no acid-fast bacilli. Polymerase chain reaction, tuberculin test and acid-fast bacilli in urine were negative. Diagnostic laparotomy revealed that the uterus, ovaries and intestines had conglomerated (Figure 2). Miliary deposits were detected on peritoneal surfaces and intraabdominal organs (Figure 3). Caseified granulomatous lesions were present in the histopathological examination of peritoneal biopsies. Direct examination of the ascites fluid did not reveal acid-fast bacilli and mycobacterial culture was negative. Postoperative antituberculous treatment with four drugs was initiated.

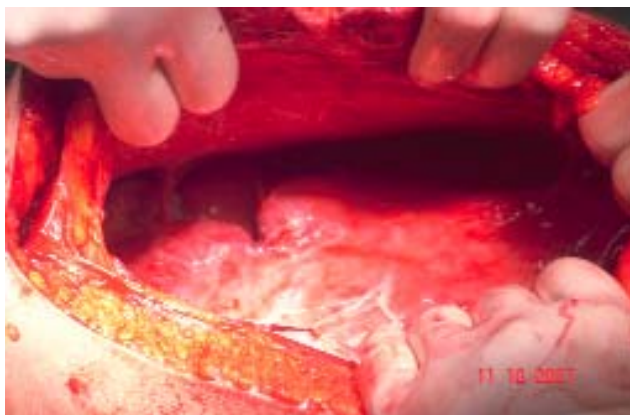


Figure 2: The intraoperative imaging of the conglomerated mass consists of the intestines and the other intraabdominal organs, showing adhesions to the anterior abdominal wall

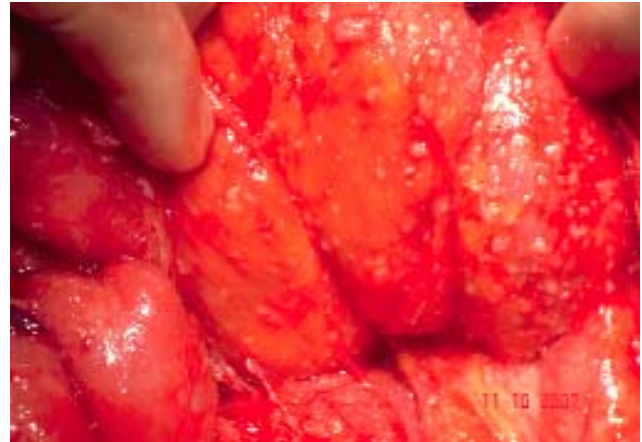


Figure 3: The miliary tuberculosis spreading on the peritoneum

### Case 3

A 42-year-old patient with G4P4 presented with abdominal pain and ultrasonography revealed extensive ascites as well as a 26x20 mm mass on the right ovary and a 36x29 mm mass on the left ovary (Figure 4). No pathology except ascites was detected in the computed tomography scanning. The patient had thrombocytosis (485,000/mm<sup>3</sup>) and the CA-125 level was >500 U/mL. Family history of TB was positive. Bilateral pleural effusion and atelectasis of the lower segment of the right lung was detected in the computed tomography scanning of the thorax. Pleural effusion had exudative properties and ADA level was 19 U/l; there were no acid-fast bacilli. Diagnostic laparotomy revealed miliary lesions on all abdominal organs and peritoneal surfaces. The left ovary and the bladder had conglomerated. Caseified granulomatous lesions were detected in the histopathologic examination of the material obtained by wedge resection of the left ovary. Postoperative antituberculous treatment with four drugs was initiated.



Figure 4: The ultrasonographic imaging of the fluid and containing septations, suspicious as a mass

## Discussion

The prevalence of pulmonary and extrapulmonary TB has been increasing over the past decade, due to the rising number of people with acquired immunodeficiency syndrome and the development of drug-resistant strains of *Mycobacterium tuberculosis*. The risk factors for the development of TB include immigration, low income populations, immunosuppression, human immunodeficiency virus, and living in close contact with patients suffering from TB.<sup>1</sup>

Although TB primarily affects the lungs, extrapulmonary involvement may be present in 1-4% of cases. The most common extrapulmonary involvement is the genitourinary system, primarily the fallopian tubes.<sup>2</sup> Secondary infection by haematogenous spread causes the majority of genital TB, but rare occurrences of primary inoculation of genitalia are reported.<sup>3</sup>

The clinic of genital TB patients present with a history of involuntary infertility, uterine haemorrhage, or typical symptoms of PID like pelvic pain, fever, and menstrual disturbances or vaginal discharge.<sup>3</sup>

Ultrasonography and computed tomography findings of peritoneal tuberculosis resemble peritoneal carcinomatosis. The symptoms of peritoneal tuberculosis may be confused with advanced stage ovarian carcinoma and pelvic abscess and preoperative differential diagnosis may be problematic.<sup>2,4,6</sup> Pelvic pain, mass, ascites and increased CA-125 level are common markers. There is no surrogate marker to differentiate ovarian tumor and peritoneal tuberculosis. Intraabdominal TB cases confused with various intraabdominal pathologies were reported.<sup>4,7</sup> Diagnostic laparotomy was required in all three cases presented here due to clinical manifestations mimicking pelvic pathology. We reported that all cases had thrombocytosis. Thrombocytosis has been identified as a poor prognostic factor in many cancers and it may be a marker of aggressive ovarian carcinoma.<sup>8</sup> In patients with pulmonary TB, change in platelet count was also observed (thrombocytosis or thrombocytopenia). Some patient characteristics are helpful for differential diagnosis in genital TB, such as age, fever and pulmonary findings. First, pelvic TB affects women at a younger age than does ovarian cancer. The all cases are young in our series (26-46). The mean age at diagnosis is reported as 40.6 years.<sup>4</sup> Second, TB also presents with low-grade fever that was not frequently found in ovarian carcinoma.<sup>9</sup> In case 1 and 2 had fever in our series. Third, a previous history of pulmonary TB or radiologic evidence of a chest lesion might be expected. In case 1 and 3, family history of TB and lung findings are present.

Tuberculosis was confirmed by DNA extraction from the frozen section specimen with subsequent analysis using polymerase chain reaction.<sup>10</sup> Therefore in cases with a presumptive

diagnosis of pelvic malignancy or abscess, the importance of intraoperative frozen section to avoid unnecessary extensive surgical procedures should kept in mind.

Genital tuberculosis has a negative effect on fertility. Tripathy et al reported that the incidence of genital tuberculosis was 3% in all infertile patients in India.<sup>11</sup> The incidence of infertility in patients with genital tuberculosis was reported to be 58% and the rate of conception and live birth after treatment were 19.2% and 7.2% respectively.<sup>11</sup> In addition clinical pregnancy rate was lower and spontaneous abortion rate was higher in women with infertility due to genital tuberculosis in IVF cycles.<sup>12</sup> However, in our series, case 2 and 3 seem to be highly fertile.

Ravelosoa et al reported that term pregnancy could not be achieved in any of 11 patients with genital TB who were treated successfully.<sup>13</sup> On the other hand, our patient (case 1) had spontaneous conception and reached term within one year following antituberculous treatment despite advanced genital TB.

In conclusion, peritoneal/pelvic TB should be considered in the differential diagnosis in cases with a presumptive diagnosis of pelvic malignancy or abscess and should be suspected in women, especially younger women, who present ascites and adnexial masses in areas of endemic disease.

## İntraabdominal Patolojiyi Taklit Eden

### Peritoneal Tüberküloz: Üç Olgu Sunumu

Tüberküloz insidansı dünya genelinde artmaktadır ve özellikle Türkiye gibi gelişmekte olan ülkelerde halen bir halk sağlığı sorunu olmaya devam etmektedir. Biz bu makalede, pelvik ağrı, kitle, asit ve yüksek CA-125 değeri ile pelvik patolojiyi taklit eden ve malignite veya abse ön tanısı ile diagnostik laparotomi yapılan 3 pelvi-peritoneal tüberküloz olgusu sunmayı amaçladık. Özellikle gelişmekte olan ülkelerde, asitin mevcut olduğu pelvik malignite veya abse ön tanısı olan olgularda ayırıcı tanıda pelvi-peritoneal tüberküloz mutlaka akılda tutulmalıdır.

**Anahtar Kelimeler:** Peritoneal tüberküloz, Over malignitesi, Adneksial kitle, Asit

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