

# Pelvic Peritoneal Tuberculosis Mimicking Stage IV Ovarian Cancer: Case Report

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## Abstract

Tuberculosis (TB) is the most common infectious cause of human death. After the lung, genitourinary tract is the most common site for TB infection. Pelvic tuberculosis should be considered in young women presented with pelvic mass, ascites, fever, an elevated CA125 level, negative cytology, and positive history of contact with affected person. A 24-year-old girl presented as stage IV ovarian cancer due to pelvic mass, ascites, bilateral multiple lung nodules is described. Further evaluation revealed inflammatory lesion of the left sacroiliac joint. Serum CA 125 was normal. PCR on tissue specimen from sacroiliac joint showed Mycobacterium Tuberculosis. Within two months after anti TB therapy pelvic mass, ascites and lung nodules resolved completely without any surgical intervention. This is the first case of active pelvic tuberculosis with normal CA125 that has been reported up to now.

**Key words:** CA125, Tuberculosis, Ovarian cancer

## Introduction

Tuberculosis, one of the oldest diseases is known to affect human and is caused by mycobacterium tuberculosis. The disease may be fatal within the 5 years in more than 50% of cases (1). Genitourinary tuberculosis accounts for about 15% of all extra pulmonary tuberculosis; this is usually due to hematogenous spread following primary infection and may involve any portion of genitourinary tract (1).

## Case

A 24-year-old afghanian virgin girl was admitted

in 22 Bahman Hospital- Mashhad on May 2005 due to pelvic mass, ascites and lower abdominal pain. She had history of abdominal and low back pain, anorexia, weight loss and intermenstrual spotting from 8 months ago. In her family history it was revealed that her father had bone tuberculosis (TB) about twenty years ago. She was afebrile with normal lung auscultation and no lymphadenopathy, but ascites, tenderness in hypogasterium and left lower quadrant (LLQ) area and left sacroiliac joint were detected. In bimanual rectal examination a left adnexal tender mass with pressure effect on left side of rectum was detected. Investigations showed normal blood count (CBC), a mild anemia, ESR: 28, negative CRP, CA125: 17 U/ml (normal <35 U/ml), TB Skin test: 8x8 mm (negative). HBS Ag, HIV, Wright and 2ME were all negative. BUN, creatinine, urine analysis, stool exam and liver function tests were normal. Gastric lavage for acid

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**Figure 1:** Irregular hypodense left adnexal mass in pelvic CT Scan



**Figure 2:** Lung CT Scan

fast bacilli (AFB) was negative.

Abdominal and pelvic ultrasound and CT Scan (figure 1) revealed ascites, normal Uterus, a 40x60 mm irregular hypo dense mass in left adnexal region with the extension to posterior cul-de-sac, dilatation in left kidney in favor of uretero pelvic junction obstruction (UPJO). Chest x ray (CXR) and Lung CT

Scan (figure 2) revealed multiple nodules with soft tissue density in upper and middle zone of both lungs in favor of lung metastasis.

According to bone tenderness on physical examination pelvis radiography and CT scan was performed that showed erosion, sclerosis, irregularity and decreased articular space in left sacroiliac joint. In spite of primary diagnosis of advanced ovarian cancer paracentesis was done due to left sacroiliac radiologic findings. Ascitic fluid was exudative without malignant cells. Open bone biopsy was performed over the left sacroiliac Joint. Direct smear for AFB was negative. Histologic examination did not show caseous granuloma. Polymerase chain reaction (PCR) on tissue specimens and whitish –gray clumped cheese like material of the joint showed amplification of the M. tuberculosis. Within 2-months after anti TB therapy her pelvic pain resolved and pelvic sonography showed complete regression of the ascites and adnexal mass without any surgical drainage.

## Discussion

Lung involvement is the most common manifestation of tuberculosis (1). Cough with bloody streak sputum is a common symptom. Apical and posterior segments of the upper lobes are the most common sites of involvement, and cavitory formation and infiltration is a common CXR finding (1). But in our patient multiple lung nodules with soft tissue density in middle and apical zone of lung was not compatible with typical pulmonary TB and resembled lung metastasis.

Primary TB involves peritoneal cavity in 0.1-0.7% of cases (2). Two clinical presentation has been described in peritoneal TB: 1) plastic type with abdominal mass and doughy abdomen 2) The more common serous type with ascitis and peritonitis signs (2). Fever, abdominal pain and weight loss can occur in acute forms of both types. Differentiation between pelvic TB and ovarian carcinoma may be difficult. Yield of TB smear and culture remains very low. Tuberculin skin test has limited usefulness in high prevalence area and a negative skin test may be seen in many patients with histological confirmed pelvic tuberculosis. Detection of mycobacterium by polymerase chain reaction (PCR) has high sensitivity but availability, cost and quality control are important limiting factors in developing countries. Peritoneal biopsy would clinch the diagnosis in such cases.

In this patient chronic abdominal pain, ascites, weight loss and pelvic mass without fever favored ovarian carcinoma rather than pelvic TB. On the other

hand family history of TB, Afghanian race, low socioeconomic and hygiene status in this young patient were in the favor of pelvic tuberculosis.

Pelvic tuberculosis is common in female gender (3).

In Hatami's study on 52 women with pelvic TB, pelvic mass was the second most common presentation after infertility. In her study the mean age of patients was 26-30 years old and endometritis was the most common pathologic finding (3). Our patient was virgin with regular menstrual cycles and intermenstrual spotting.

CA125, the cancer antigen is a high molecular weight glycoprotein produced by some kinds of cancer cells like ovarian carcinoma and normal cells of coelomic epithelium derived tissues. Proliferation, injury or inflammation of mesothelial cells leads to serosal effusions (pleural effusion or ascites); which can result in increased secretion of CA125 into serosal effusions and blood stream. The commercial test for serum CA125 has been available since 1983. In women with ovarian carcinoma, level of CA125 is elevated > 35 U/ml in more than 80% of cases. Nearly 20% of ovarian carcinoma patients will not produce elevated serum CA125 level (marker negative) (4). Serum CA125 levels are generally found to be higher in malignant conditions compared to benign conditions.

Elevated serum CA125 with a mean level of 300-500 U/ml have been reported in active pulmonary or pelvic TB with pleural or peritoneal effusion in many studies (5-18). Biglin et al reported 10 patients with peritoneal TB who were operated for suspected advanced ovarian cancer. In his report all the patients had elevated serum CA125 levels with a median of 331 u/ml (19). Yilmaz et al in their case control study on 96 subjects showed that serum CA125 is elevated in the case of active pulmonary TB with a mean level of 109.7 U/ml and that it is a valuable parameter in determination of disease activity (20). According to their study sensitivity and specificity of this test for estimation the activity of tuberculosis were 97.5% and 100% respectively at a 31 U/ml cut-off point.

Based on the literature review in active pulmonary and extra pulmonary TB there is increased levels of serum CA125 and a normal CA125 is a strong evidence against active TB infection except in patients with TB lymphadenitis (21). Our case report is the first one that does not establish this issue, because despite of active pelvic TB and ascites in this patient serum CA125 level was normal. Her pelvic mass, ascites and lung nodules resolved completely after 2

months of anti TB therapy.

In conclusion pelvic peritoneal TB should always be considered in a patient with adnexal mass and ascites; especially in poor economic and health condition, family history of TB and fever which are among the most important factors differentiating pelvic TB from advanced ovarian cancer. Based on our case report, serum CA125 level doesn't always show pelvic TB activity and can remain within normal limits despite of active peritoneal TB.

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