



## Case Report

# Atypical Presentation of Pelvic Tuberculosis Mimicking Ovarian Malignancy: A Case Report

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### Abstract

*The incidence of genital tuberculosis varies widely with the social status of the patient and her environment. The incidence is about 1% amongst gynecological patients attending the outpatient department in the developing country. Genital TB may be asymptomatic and the majority of women are diagnosed during investigations of infertility. Genital system TB represents 15-20% of extra pulmonary TB and is usually asymptomatic affecting mainly young women in the reproductive age group. Pelvic tuberculosis can cause ascites and an abdominal mass that may masquerade as ovarian cancer. CA125 levels are raised in peritoneal tuberculosis. CT scan and MRI reveals similar picture and the diagnosis is often difficult. This is an unusual case of pelvic tuberculosis presented as a case of adnexal mass with ascites. After confirmation of diagnosis, the case was successfully managed by anti-tubercular therapy by 9 months regimen.*

**Keywords:** Pelvic tuberculosis, Adnexal mass, Adenosine deaminase (ADA)

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### Introduction

Tuberculosis (TB) is a contagious disease caused by *Mycobacterium tuberculosis* (*M. tuberculosis*). According to a global TB report, there were an estimated 10.4 million new (incident) TB cases worldwide. There were an estimated 1.4 million TB deaths in 2015<sup>1</sup>.

Tuberculosis is a worldwide disease with greater prevalence where the population is concentrated in areas with poor sanitation and unfavorable social and economic condition. Genital TB is one form of extra pulmonary TB and is not uncommon. The incidence is about 1% among gynecological patients attending the outpatient department in the developing countries<sup>2</sup>.

Pulmonary TB is the most common form, but TB can affect the other parts of the body<sup>3</sup>. Female genital TB (GTB) is an important disease and in infected women it causes morbidity, menstrual irregularity, pregnancy loss, short and long-term sequel<sup>4,5</sup>. GTB is seen approximately 5-10% in infertile females, while the incidence of GTB in the industrialized countries is about 1%; this ratio is about 13% in the developing countries. Genital TB occurs mostly secondary to pulmonary tuberculosis commonly by the haematogenous route in a manner similar to spread to other extra pulmonary sites like urinary tract, bones, joints, etc. Timely diagnosis and prompt appropriate treatment may prevent

sequels of the disease. Symptoms of GTB are usually non-specific, for this the prevalence of GTB is less than expected<sup>6</sup>. In this form of infection fallopian tubes (95-100%), endometrium (50-60%) and ovaries are the most affected areas<sup>7</sup>. This disease is generally affecting the women aged between 20-40 years<sup>8</sup>. GTB mostly seen in reproductive age group while it could be seen in postmenopausal women as well<sup>9</sup>.

Like peritoneal carcinomatosis or ovarian malignancy, abdomino-pelvic TB has similar symptoms like pelvic pain, mass, ascites and elevated serum CA125 levels<sup>10</sup>. Drug therapy for female genital TB (FGTB) is similar to the standard treatment regimens used for pulmonary TB.

World Health Organization (WHO) in a drastic step declared TB as a global emergency in 1993 and promoted a new effective TB control called Directly Observed Treatment Short-course (DOTS) strategy with 70% case detection rate and 85% successfully treatment rates<sup>11</sup>.

### Case report

A 21 years old lady presented in the outpatient department of gynaecology and obstetrics in Eastern Medical College Hospital with the complaints of abdominal distention with pain for about 2 months and weight loss (about 8 kg) within 3 months. She

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also gave history of lethargy and generalized weakness, loss of appetite and low-grade fever for 4-6 months. Her age of menarche was at 13 years. Her menstrual cycle was regular with average flow and duration. She had received the BCG vaccination at birth. There was no history of tuberculosis in the patient and no history of contact with tuberculosis. There was no history of any cancer in the family.

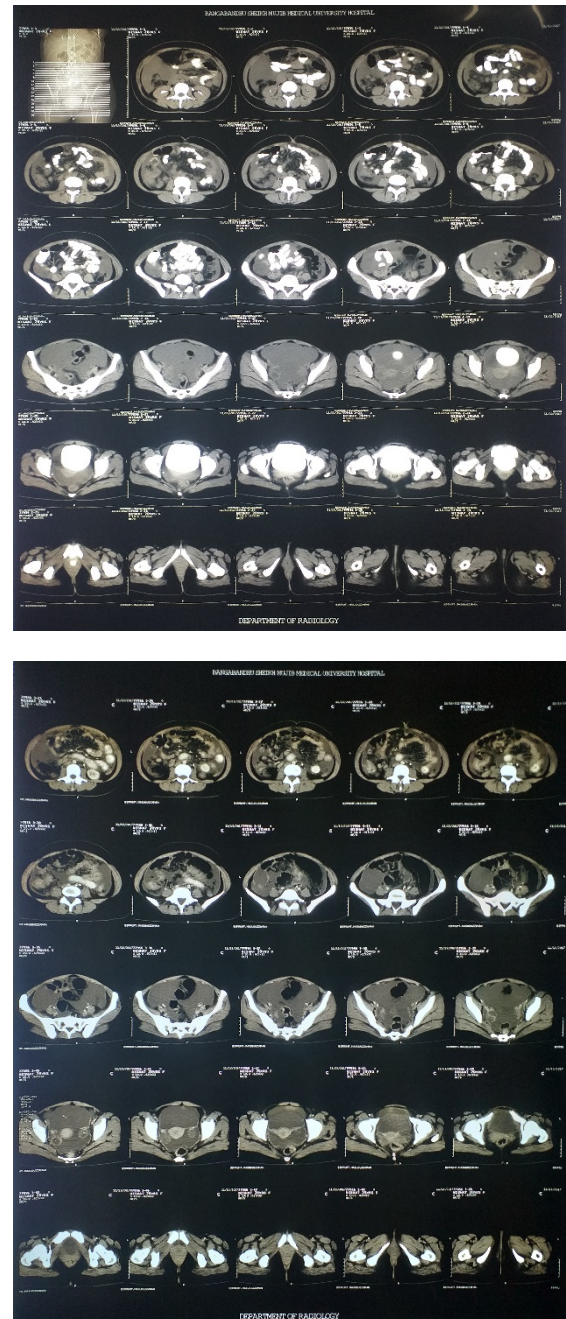
On examination her weight was 50 kg, BP 100/60 mmHg, mildly anemic but no lymphadenopathy. On per abdominal examination abdomen was distended and flanks are full (ascites). Mass could not be felt per abdominally. Per rectal examination revealed soft mass in right adnexal region, normal size uterus pushed backward and laterally.

On Ultrasonography (USG) right ovary showed a thick-walled cystic mass (5.5×5.3) cm with some internal echoes with septation and left ovary was normal (Fig-1). Both tubo-ovarian region and cul-de-sac shows collection (moderate ascites). Cancer antigen CA-125 was raised (180 U/ml). So, she was diagnosed as a case of right ovarian mass with ascites. For further evaluation she was referred to BSMMU and returned for treatment follow-up.



**Figure-1:** USG of right ovary shows a thick-walled cystic mass (5.5 x 5.3 cm) with some internal echoes with septation and left ovary normal.

For proper diagnosis tumor markers, CT scan of abdomen, USG guided aspiration of ascetic fluid and X-ray Chest was done. Tumor markers CA 19.9 level 5.10 U/ml (Normal 18.7 U/ml), Serum CEA level 0.58 ng/ml (Normal 5 ng/ml), Beta hCG 0.47 mIU/mL (Normal <0.47 mIU/mL), Lactic Acid Dehydrogenase (LDH) 226 U/L (Normal 100-190 U/L), Alpha-Fetoprotein 2.16 ng/ml (Normal 1-10 ng/ml).

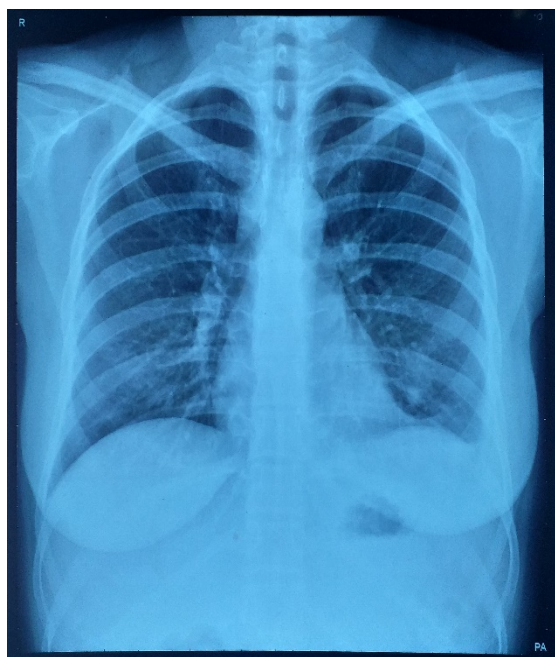


**Figure-2:** CT scan of the Whole Abdomen before & after contrast showing cystic mass in right ovary.

Computed tomography (whole abdomen) showed a cystic area having internal septation measuring about 4.4 × 3.2 cm is seen in right ovary. After IV contrast media administration CT scan revealed no



appreciable enhancement. Passive collapse of left lower lobe is noted and moderate ascites is seen (Fig. 2). In the chest X-ray of the patient left sided pleural thickening was found (Fig. 3).



**Figure-3:** X-ray chest showing left sided pleural thickening.

USG guided aspiration of Ascitic fluid (60 ml) was done from right lower abdominal region without any complication. Ascitic fluid - straw color, turbid appearance and sample were sent for cytology, acid-fast bacilli (AFB) smear and culture for Tuberculosis, ADA and gene Xpert. Cytology of ascitic fluid - WBC count 1,400 cells/cu mm, lymphocyte 90% and Cytology negative for malignant cell. There was no AFB seen on smear. Ascitic fluid Adenosine deaminase (ADA) was 124.4 U/L (normal up to 24 U/L) but Gene Xpert for detection of MTB not detected. Xray chest finding is left sided pleural thickening.

So, she was suspected as a case of genital TB and referred to medicine specialist. Anti-TB was given as treatment for severe form of extra pulmonary tuberculosis (9-month regimen). She responded to treatment, one month after starting treatment her ascites subside, gradual weight gain and USG scan was near normal. As anti-TB treatment Isoniazid, Rifampicin, Ethambutol and Pyrazinamide given for first 2-months orally. Then Isoniazid and Rifampicin continued for 7-months. Liver function tests and renal function tests were normal during follow up.

### Discussion

The incidence of tuberculosis is rising in the world and moreover it has atypical presentations. Pelvic tuberculosis infection is usually caused by

reactivation of organisms from systemic distribution of *M. tuberculosis* from a primary infection. Direct transmission between sexual partners has been documented. Spread from other intra peritoneal foci is rare<sup>12</sup>. Seventy five percent of them being in the 20-45 years age<sup>13</sup>. In this case the age of the women was 21 years. Post-menopausal women account for 7-11% of case of genital TB<sup>14</sup>.

GTB cases are usually asymptomatic, for this reason clinical diagnosis of the disease is difficult. On the other hand, even if the patient is symptomatic the symptoms can be similar to other pelvic diseases symptoms<sup>15</sup>. Among all TB cases approximately 0.5% comprise female GTB cases, and among genitourinary cases, less than 50% are GTB cases<sup>16</sup>.

Pelvic tuberculosis occurs more frequently in women. Constitutional symptoms of weight loss, feeling unwell and night sweats may resemble classical acute pelvic inflammatory disease (PID). Pelvic tuberculosis may present as adnexal mass with ascites when it is difficult to distinguish from ovarian malignancy. As our case present with adnexal mass with ascites with raised CA-125 level. Ascitic fluid for AFB smears by Ziehl-Neelsen stain provides only about 25% of the tuberculosis peritonitis diagnosis, peritoneal tissue study is recommended<sup>17</sup>. In this case ascitic fluid for AFB smears by Ziehl-Neelsen stain was negative.

Genital TB (GTB) generally occurs secondary to pulmonary (commonest) or extra pulmonary TB like gastro-intestinal tract, kidneys, skeletal system, meninges and miliary TB<sup>18,19</sup>. Pulmonary TB can be described prior to the ovarian disease; however, this is not obligatory, as demonstrated by our case. In GTB nearly 95-100% of the patients, the fallopian tube forms the primary focus, followed by uterus and ovaries in 50-60% and 20-30% respectively<sup>20</sup>.

Presenting symptoms include infertility, pelvic pain, abdomino-pelvic masses, ascites, weight loss and menstrual problems such as amenorrhea and dysmenorrhea<sup>21</sup>. However, the patient can also be asymptomatic<sup>22</sup>. In this case the girl suffered from low grade fever with weight loss. But she did not have any menstrual abnormality. On examination there was pelvic mass with ascites.

The diagnosis of GTB is a clinical challenge and for this, the diagnosis of this disease is made by a combination of tests. In order to make an accurate diagnosis of GTB, clinicians require some additional data derived from abdomino-pelvic ultrasonography, chest radiography, Mantoux (tuberculin) test, Hysterosalpingography (HSG) for beading, AFB staining, histopathological evaluation and specific cultures from intra-operative specimens obtained from the diagnostic laparoscopy.

Test which may aid the diagnosis include a positive Mantoux (tuberculin) test and staining for acid-fast bacilli in either ascitic or pleural fluid. However, these can be negative despite extensive disease<sup>23</sup>. In this case it was negative.

CA-125 is an antigenic determinant which is expressed in most non-mucinous epithelial ovarian carcinomas, and is raised in more than 80% of cases<sup>24</sup>. In the case of ovarian TB, its level rarely rises above 500U/ml (180U/ml in this case)<sup>25</sup>. It has shown that decreasing levels of CA-125 correlate with the resolution of the disease on anti-tuberculous treatment. They suggest that serial measurements should be used to determine treatment efficacy. Imaging has low specificity, with both an ovarian malignancy and a tuberculous abscess having almost similar appearances on the ultrasonography, CT scan and MRI.

### Conclusion

Isolated ovarian tuberculosis is rare. Its presentation can mimic that of an ovarian malignancy, including an ovarian mass, ascites and a rise in CA-125 level. It should be kept in mind as a differential diagnosis, both in developing and developed countries. Early diagnosis and the prevention of tuberculosis, including BCG immunization campaigns are important to avoid this devastating outcome.

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