

# Peritoneal Tuberculosis Mimicking Ovarian Malignancy

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## ABSTRACT

Peritoneal tuberculosis is an uncommon site of extrapulmonary infection caused by *Mycobacterium tuberculosis* (TB). It occurs mostly in immunocompromised patients such as malignancy, elderly or renal failure patients. We present a case of pelvic TB which appear to mimic an ovarian malignancy with acute onset of ascites. A 59 years old, para 3 presented with 2 weeks history of abdominal ascites with ovarian tumour. Ovarian cancer was suspected. Total abdominal bilateral salpingo-oophorectomy was performed. Histo-pathology confirmed TB. She was started with an-TB therapy, she was improved after 2 weeks of therapy and she is well until now. Peritoneal TB is a rare condition which can mimic ovarian malignancy or peritoneal malignancy, especially in patient without pulmonary manifestation and negative TB investigations. This will cause dilemma in diagnosis hence delay in management.

## Keywords

Tuberculosis, Pelvic Tuberculosis, Ascites, Ovarian Malignancy

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## INTRODUCTION

Peritoneal tuberculosis is an uncommon site of extrapulmonary infection caused by *Mycobacterium tuberculosis* (TB). Patients with cirrhosis, HIV infection, diabetes mellitus, underlying malignancy, following treatment with anti-Tumour Necrosis Factor (TNF) agents, and in patients undergoing continuous ambulatory peritoneal dialysis are at high risk to be infected.<sup>1</sup> Pelvic TB can also occur via hematogenous spread from active pulmonary or miliary TB. Rarely, the organisms enter the peritoneal cavity transmurally from an infected small intestine or contiguously from tuberculous genital organ.<sup>1,2</sup> In this case report, we present a case of pelvic tuberculosis without lung manifestation which mimicks ovarian malignancy.

## CASE REPORT

A 59-year-old/malay/Para 3, menopause 10 years ago with underlying diabetes mellitus, hypertension and dyslipidaemia, presented with a 2 weeks history of abdominal distension and discomfort. She didn't have any abdominal mass, constitutional symptoms, post-menopausal bleeding/abnormal PV discharge, urinary or bowel symptoms. She has no family history of malignancy. During admission for CT scan, she experienced high grade fever which occurred mainly late in

the evening/night, his lasting for the past 14 days. All septic workouts were normal. Infectious Disease specialist treated her as a tumour induced fever case, with 7 days of IV Ceftriaxone and Metronidazole. The fever settled temporarily prior to the operation. General examination revealed a thin lady. She was not pale, and no palpable lymph nodes were noted. Examination of her cardiovascular and respiratory systems were unremarkable. The abdomen was grossly distended, filled with ascites, and no palpable mass or hepatosplenomegaly. Bimanual examination was unable to proceed due to gross ascites. Trans-abdominal ultrasound revealed gross ascites, an atrophic uterus, and the presence of left ovarian mass measuring 3x3cm, with solid appearance with irregular margin. The right ovary was atrophic, both her liver and kidneys were normal.

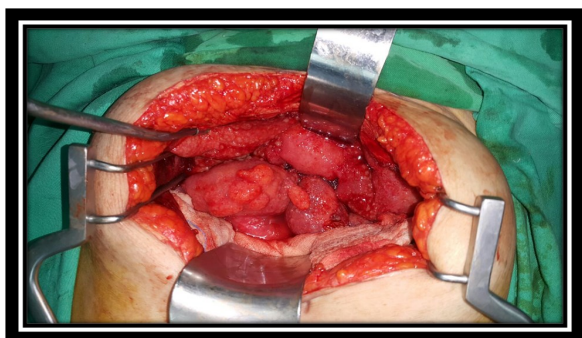
CT scan thorax/ abdomen/pelvis showed lesion with mixed solid and cystic component at bilateral adnexal region, measuring 1.3cm (AP) x 2.2cm(W) x 2.9cm (CC) on right side and 2.9cm (AP) x 1.9cm (W) x 3.3cm (CC) on left side likely ovary. The solid component shows enhancement at post contrast. No obvious calcification septation within, associated with gross ascites, and minimal right pleural effusion. The uterus was normal (Figure 1). Serum Ca125 was 393 IU, other tumour

markers were normal. Paracentesis of the peritoneal fluid showed no malignant cells. With the above clinical and laboratory findings, a diagnosis of malignant ovarian tumour with peritoneal metastasis was made.



**Figure 1:** Presence lesion with mixed solid and cystic component at bilateral adnexal region, measuring 1.3cm (AP) x 2.2cm(W) x 2.9cm (CC) on right side and 2.9cm (AP) x 1.9cm (W) x 3.3cm (CC) on left side likely ovaries. The solid component shows enhancement at post contrast. No obvious calcification septation within.

Exploratory laparotomy + Total Abdominal Hysterectomy and bilateral salphingo-oophorectomy + omentectomy were proceeded. Intra-operatively, 1000ml ascites fluid was drained, and there was presence of small tumour deposits ( size: 0.5-1cm) all over the peritoneal cavity, uterus and tubes, bowels, appendix and up to the surface under the diaphragm. However, the ovaries appeared normal, which was quite different from the CT scan finding. Thus, a diagnosis of primary peritoneal malignancy at least stage 3C was made. (Figure 2)



**Figure 2:** Generalised multiple whitish nodules in the peritoneum during surgery

Differential diagnosis of peritoneal TB was made in view of the tumour deposits appearance, negative cytology results and moderately raised Ca125. Mantoux test was negative, and the AFB stain on the peritoneal fluid was negative. The right pleural effusion resolved post-operatively. The peritoneal cytology

for Mycobacterium C&S showed negative growth. Histopathological examination revealed severe granulomatous inflammation due to *M. tuberculosis* infection involving endocervix, endometrium, myometrium, both fallopian tubes and ovaries. Epithelioid granulomata involving medium sized arterial wall encroaching lumen of arteries in right fallopian tube. There was also presence of ulceration of surface mucosa of endocervix, endometrium, fallopian tube due to granulomata. Final diagnosis of extra pulmonary TB was confirmed. Anti-TB drugs regimen was started immediately. She recovered well after the anti-TB treatment. Currently she is still under gynaecology outpatient and TB clinic follow up.

## DISCUSSION

Pelvic tuberculosis without lung manifestation is a very rare condition. Patients may present with ascites (93 %), abdominal pain (73 %), and fever (58 %). Abdominal pain and ascites were also the most common presenting features in several reports. It can mimic ovarian malignancy or peritoneal malignancy symptoms.<sup>1,2</sup> Tuberculosis can affect the upper female reproductive tract by extension from direct intraabdominal spread, hematogenous seeding, or ascending from lower genital tract infection.<sup>5</sup> The fallopian tube and endometrium are the most common involved organs.<sup>5</sup> Endometrial tuberculosis always associated with salpingitis but tuberculous salpingitis may exist without associated endometritis.<sup>5</sup> The gold-standard for diagnosis is culture growth of *M. tuberculosis* on ascitic fluid or a peritoneal biopsy.<sup>1,2,3</sup>

The diagnosis usually requires a peritoneal biopsy performed under direct visualization. Blind peritoneal biopsies have a low success rate and have been associated with complications including death. Laparoscopic guided biopsy appears to be relatively safe. Study reported complication rate was 2.7% in four series comprising of 110 patients.<sup>4</sup> These included bowel perforation, intraperitoneal bleed, and subcutaneous hematoma. Peritoneal biopsy via mini-laparotomy may be preferred by some surgeons and should be considered if laparoscopy is non-diagnostic. Direct vision during laparoscopy or mini-

laparotomy able to diagnose up to 95 percent of cases.<sup>3</sup> Typically, the visceral and parietal peritoneum is studded with multiple whitish nodules or tubercles.<sup>3</sup> Other findings include enlarged lymph nodes, "Violin-string" fibrinous strands, and omental thickening.<sup>3</sup> There were similar findings in this case as in Figure 1. Tissue biopsies reveal caseating granulomas in up to 100 percent of patients and are positive for acid fast bacilli in 74 percent of patients.<sup>4,5</sup>

In our case, the growth culture was negative but histopathology of the tissue biopsy showed positive acid-fast bacilli and confirmed peritoneal tuberculosis. This is consistent in the literatures. The treatment regimens for tuberculous peritonitis is the same as the treatment for pulmonary tuberculosis.<sup>2</sup> The corticosteroids for the first two to three months of treatment may reduce the incidence of late complications arising from adhesive disease, such as small bowel obstruction.<sup>2,3</sup> Most of the clinicians avoid using adjunctive steroid therapy due to lack of strong evidence and the risk of tuberculous dissemination especially in cases of multi-drug resistance. Our patient recovered well after initiation and completion of the anti-TB treatment.

## CONCLUSION

Peritoneal tuberculosis is a rare condition which can mimic ovarian malignancy or peritoneal malignancy, especially in patient without pulmonary manifestation and negative TB investigations. As the patient was already 59 years old, fertility issue should not come into the pictures anymore, but may cause dilemma in managing young patients as fertility is a major concern. More case series and studies are needed to improve our assessment in future especially prior to surgery.

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