

# Tuberculous Versus Malignant Peritoneal Effusion: A Diagnostic Dilemma When Both Conditions Coexist

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### ABSTRACT

Differential diagnosis between tuberculous peritonitis and peritonitis carcinomatosa is often extremely difficult as they share common clinical and radiologic findings like ascitis, adnexal masses and elevated CA 125 levels in women. The diagnostic dilemma is further confounded when the two conditions co-exist. Overwhelming clinical features of tuberculosis may at times mask the co-existent malignant pathology leading to its underdiagnosis by the clinicians, thereby impacting the further management of the patient.

We present a case of an elderly woman who presented with abdominal distension and weight loss. Her CA 125 level was raised to 529 U/ml. Imaging studies revealed adnexal masses and ascitis. Ovarian malignancy was highly suspected but histology of endometrial biopsy showed tuberculosis. Anti-tubercular treatment was administered and the patient showed mild initial improvement but worsening of clinical and biochemical parameters occurred later due to co-existent malignancy for which no treatment was given.

This case highlights the importance of a co-ordinated team work between the physician, radiologist and the pathologist. It also emphasizes the need for careful, correct and detailed analysis and interpretation of the biochemical and pathological test results to reach to a correct diagnosis.

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## Introduction

The detection of pelvic mass with ascitis and elevated CA 125 levels is highly suspicious of ovarian cancer, but there are various benign conditions especially peritoneal tuberculosis (TB), which may mimic the above findings and thus create dilemma in the diagnosis and treatment of the disease. TB and advanced ovarian carcinoma are two important differential diagnoses to be considered in an elderly female patient presenting with ascitis and bilateral tubo-ovarian masses. These entities are often mistaken one for the other by clinicians as they share common clinical and radiological findings. The confusion is compounded when the two conditions co-exist in a given patient.

## Case Summary

We present a case of 50 year old woman complaining of two episodes of post-menopausal bleed and abdominal distension for past 3 months. She also gave history of loss of weight and appetite and fever off and on for past one month. There was no history of TB in the past. Physical examination showed no significant findings except abdominal distension with ascitis. Chest radiograph was within normal limits. Ultrasonography (USG) of abdomen revealed bilateral tubo-ovarian masses with gross ascitis. Her haematological and routine biochemical investigations were within normal range but her ESR was raised to 62mm in 1<sup>st</sup> hour. Based upon these findings, a provisional clinical diagnosis of peritoneal TB was made and an ascitic fluid tap was performed. Grossly, ascitic fluid was turbid with specific gravity of 1.040, protein 4 gm/dl, sugar 40 mg/dl. Adenosine Deaminase levels were increased to 47.78 U/ml. Culture showed no growth. Cytological examination of ascitic fluid showed total leucocyte count of 450 cell/cumm and differential cell count of neutrophils 10%, lymphocyte

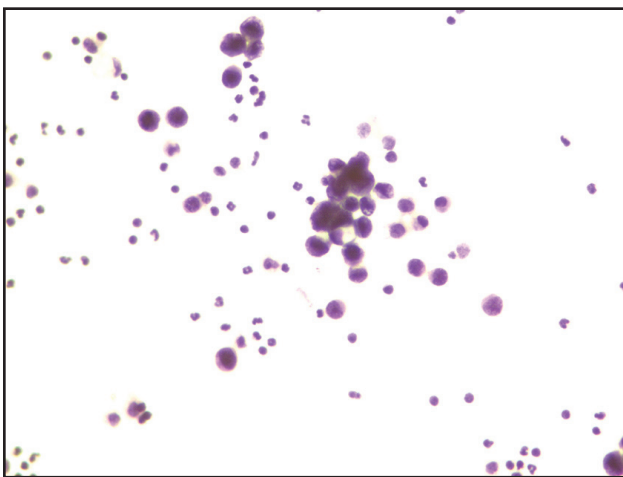


Fig. 1: Peritoneal fluid cytology showing few atypical cells suspicious of malignancy (papanicolaou, x400).

90%. Microscopic examination showed presence of reactive mesothelial cells, few lymphocytes and occasional clusters of atypical cells, suspicious of malignancy (Figure 1). Subsequently CA 125 levels were performed which were raised to 529U/ml. In the meanwhile, the patient underwent cervical Pap smear examination and endometrial biopsy to further investigate the post-menopausal bleed. Cervical Pap was negative for intraepithelial lesion or malignancy, however, showed reactive cellular changes associated with inflammation. Endometrial biopsy showed features of tubercular endometritis. Acid fast bacilli were seen on Zeihl-Neelsen stain (Figure 2).

The patient was started on antitubercular treatment. Initially, the patient showed some improvement. Her fever subsided and the ascitis reduced. But her general condition started deteriorating one and half months later. The ascitis began to increase and a repeat USG examination showed a heteroechoic predominantly solid lesion involving bilateral adnexa suggestive of carcinoma ovaries. Later, CECT abdomen also showed bilateral ovarian masses with nodular peritoneal pelvic deposits. The CA 125 levels were also markedly elevated to 1453 U/ml. Ultrasound guided FNA was performed from tubo-ovarian mass and the cytology smears showed features suggestive of papillary serous carcinoma (Figure 3). Histopathological confirmation could not be obtained as the patient expired two days later.

## Discussion

Peritoneal TB, the third most common cause of ascites after liver cirrhosis and neoplasia, accounts for 25-30% cases of abdominal TB in the tropics.<sup>[1]</sup> It presents clinically with ascites, tubo-ovarian mass and elevated CA-125 levels which mimics advanced ovarian carcinoma. Although, the

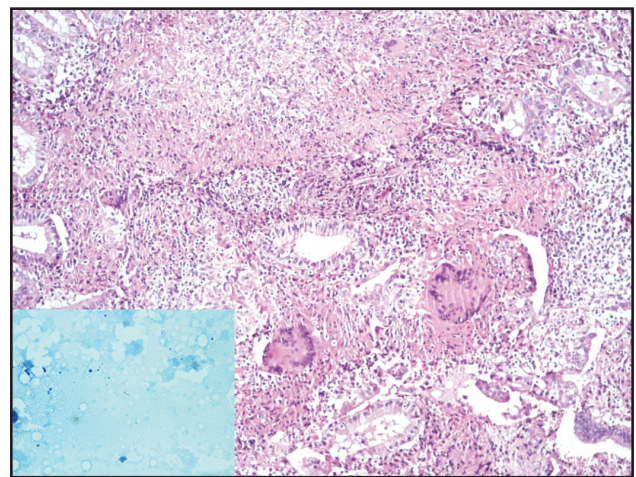
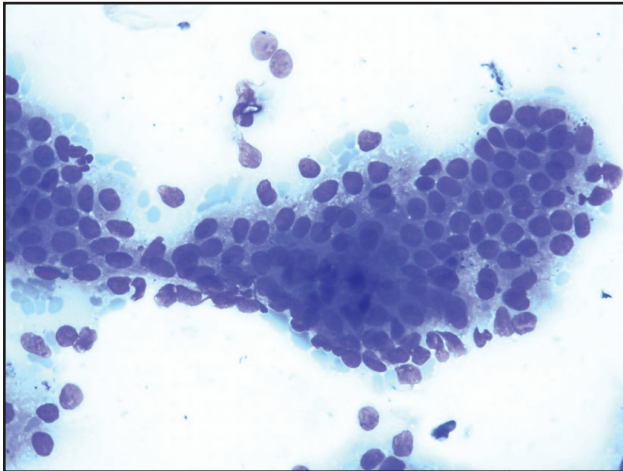


Fig. 2: Endometrial biopsy showing granulomatous reaction with Langhan's giant cell(H&E, x100).Inset showing acid fast bacillus on Z-N stain, x1000.



**Fig. 3: FNA smear of ovarian mass showing papillaroid fragment of malignant cells (Wright- Giemsa,x400).**

diagnosis of TB requires microbiological confirmation, the incidence of microbiological isolation of the agent in ascitic fluid is quite low (under 50%) with high false negative rates.<sup>[2]</sup> In the present case also, mycobacteria could not be detected in the ascitic fluid. ADA activity levels of greater than 32.3U/L in ascitic fluid are almost 100% sensitive and 96% specific for the diagnosis of tuberculous peritonitis.<sup>[3]</sup> The correct diagnosis of tuberculous peritonitis can be reached taking into account the manifold clinical features of the disease and on bacteriologic proof of tuberculosis somewhere in the body.<sup>[2]</sup> The present case fulfilled almost all the clinic-radiological and biochemical criteria required for diagnosis of peritoneal TB. She had documented evidence of endometrial TB; elevated ADA (47.8U/ml) activity in ascitic fluid and raised CA 125 levels.

Serum Ca 125 levels are raised not only in epithelial ovarian cancer but also in various benign and inflammatory conditions such as menstruation, pregnancy, endometriosis, PID, genital TB and non- gynaecological conditions like various liver and lung diseases where the serum CA 125 levels are usually <500 U/L.

In the present case, a markedly elevated serum CA125 level of 529U/L favoured a diagnosis of ovarian cancer vis-a-vis peritoneal TB but the patient was put under ATT because very high levels (>1000U/L) have been reported in some patients with peritoneal TB.<sup>[1, 4-6]</sup> Moreover, she had histopathologic evidence of endometrial TB. The few suspicious cells seen in ascitic fluid were totally ignored.

In cases of peritoneal TB, CA 125 levels start falling after initiation of anti TB therapy and decrease to normal levels after treatment.<sup>[1,4,6]</sup> Persistent elevated levels should alert the physician to a possibility of a co-existent ovarian cancer. Till date, only one case of coexistence of tuberculous peritonitis and primary papillary serous carcinoma; that

too of the peritoneum; has been described.<sup>[7]</sup> To the best of our knowledge, this is the first report of the coexistence of serous carcinoma of ovary and tuberculous peritonitis.

It is important that the physician must not get overwhelmed by a diagnosis of tuberculosis and should explore the possibility of a co-existent malignancy especially in a setting where clinical and radiological data cannot differentiate between the two conditions. Moreover, the presence of suspicious cells in an effusion, however few, should never be ignored and a more aggressive diagnostic approach must be adopted. If ovarian FNAC/ biopsy had followed the initial findings of suspicious cells in the peritoneal fluid, the unnecessary delay in proper diagnosis and management of the patient could have been avoided.

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### Conflict of Interest

Nil

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