



Ascites Due to Abdominopelvic Tuberculosis or Ovarian Malignancy? – A Diagnostic Dilemma

Dr. Gunjan Goyal¹, Dr. Neeti Shree², Dr. Shivangi Maurya³, Dr. Mriganka Bordoloi⁴, Dr. Himani⁵,
Dr. Varsha V Kamath⁶, Dr. Ankita Yadav^{7*}, Dr. Ridhi Jadhav⁸,

Abstract

Abdominal tuberculosis is an important cause of ascites in India which accounts for 3-5% of all tuberculosis cases and its association with pulmonary tuberculosis is not clearly defined. Genital tuberculosis affects approximately 12% of patients with pulmonary tuberculosis and constitutes 15-20% of extra-pulmonary tuberculosis depending on the country. Apart from that, the coexistence of pulmonary and genital tuberculosis has been reported in 8-15% of the cases in different studies. Present study reports three cases with age range of 44 years to 60 years. Main presenting complaint of one patient was Progressive abdominal distension, fullness and breathing difficulty. In second patient, we observed Abdominal distension and decrease appetite and in third patient, complained of Abdominal distension with pain and backache, flatulence, weight loss and decrease appetite was observed.

Keywords: Ascites, Abdominopelvic, Tuberculosis, Ovarian malignancy

DOI Number: 10.48047/NQ.2023.21.4.NQ23019

Neuroquantology 2023; 21(4): 220-224

220

INTRODUCTION:

Abdominal tuberculosis is an important cause of ascites in India which accounts for 3-5% of all tuberculosis cases and its association with pulmonary tuberculosis is not well defined. It mimics ovarian carcinoma by its vague symptoms and non-specific symptoms.

Differentiation of abdominal tuberculosis from ovarian malignancy is still a challenge. Serum CA 125 can be elevated in both ovarian cancer and peritoneal tuberculosis.¹ Similar clinical and image findings cause diagnostic difficulty and the challenge of distinguishing these two disease entities.

Table 1: Characteristic of each patients of case series

	Patient 1	Patient 2	Patient 3
Age	44 years	60 years	45 years
Parity	P3L3	P5L5	P4L4
Main complaint	Progressive abdominal distension, fullness and breathing difficulty	Abdominal distension and decrease appetite	Abdominal distension with pain and backache, flatulence, weight loss, decrease appetite
Ultrasound	Large ascites with bilateral ovarian mass septations (left: 3.1x4.4cm, right: 3.5x2.7cm)	Gross ascites with no comment on tubo-ovarian mass	Uterus anteverted, normal size, ET 8 mm, bilateral ovaries normal, moderate free fluid in abdomen and pelvis
CT scan	Small septate cystic mass in bilateral ovary with mild diffuse fat stranding in small bowel mesentery and omentum associated with gross ascites along with multiple small sub-centimetric lymphnodes in small bowel mesentery and pelvis.	A heterogeneous ill-defined soft tissue mass lesion seen in right adnexa with diffuse omento-peritoneal nodules and gross ascites	Mass seen in right lobe of liver suggestive of focal nodular hyperplasia, multiple small sub-centimetric para-aortic mesenteric lymphadenopathy, uterus normal size, right adnexa showed 4.9x4.6 cm hemorrhagic cyst otherwise both ovary normal, moderate free fluid in peritoneal cavity
CA-125 (IU/ml)	236 IU/ml	517 IU/ml	688 IU/ml
Ascitic fluid analysis	96% lymphocytes, 4% polymorphs with no malignant cells, SAAG-0.47	93% lymphocytes, 5% polymorphs with no malignant cells, SAAG-0.55	98% lymphocytes, 2% polymorphs with no malignant cells, SAAG-0.54
Serum ADA	45.7 IU/L	49.5 IU/L	56 IU/U
Serum LDH	498 IU/L	570 IU/L	510 IU/L
CBNAAT	Negative	Negative	Negative

***Corresponding Author:-** Dr. Ankita Yadav

Address:¹Professor, Department of Obstetrics and Gynaecology, World College of Medical Sciences and Research, Hajar (Haryana)

²Assistant Professor, Department of Obstetrics and Gynaecology, Al-Falah School of Medical Science & Research Centre, Village- Dhauj Faridabad, Haryana-121004

³Ex. Senior Resident, Department of Obstetrics and Gynaecology Pt. B.D. Sharma PGIMS, Rohtak, Haryana

^{4,5,6,8}Junior Resident, Department of Obstetrics and Gynaecology, All India Institute of Medical Sciences, Rishikesh, Uttarakhand

^{7*}Assistant Professor, Department of Obstetrics and Gynaecology, World College of Medical Sciences and Research, Hajar (Haryana), House No. 1772/3 Rajiv Nagar Gali No. 4, New Mata Road, Gurgaon, Haryana-122001,

Email: ankitayadav28101992@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest



CASE REPORT:

Case 1:

A 44 year old, multiparous woman presented with progressive abdominal distension, fullness and breathing difficulty for 2-3 months. It was associated with complaint of indigestion and decrease appetite, but was not associated with swelling in any other part of the body (generalised oedema), haemoptysis, hematemesis or melena. She had a two-month history of cough and abdominal distention, followed by on-off episodes of fever 7 months back for which she visited elsewhere where all investigations including TB-PCR were done, all of which were normal. She was para 3, with all normal deliveries, last child birth 8 years back with no history of any other contraceptive use. She had normal regular menstrual cycles previously. She had no previous medical history, but had positive family history for pulmonary tuberculosis in her son 6 months back for which he took ATT. Her general and respiratory and cardiovascular systems examinations were unremarkable. Abdominal examination showed distended abdomen with free fluid along with fluid thrill but without guarding and rigidity, per speculum examination revealed mild erosion on anterior lip of cervix and vaginal examination suggested anteverted, mobile, mild bulky uterus without obvious tubo-ovarian mass. The patient was admitted at our department for further investigations. All her routine haematological and biochemical investigations including chest X-ray and ECG were normal.

CA 125 was moderately elevated (236 U/ml), While CEA (0.84 ng/ml) and CA 19.9 (2.0 U/ml) levels were within normal laboratory range.

Her montoux test was positive, but in CBNAAT no tubercular bacilli was detected. A diagnostic abdominal tap was done with cytology examination showing 84% lymphocytes, 15% polymorphs with no malignant cells in the peritoneal fluid and biochemical examination showing 0.47 SAAG ratio.

Based on the clinical and laboratory findings and marginally elevated CA 125, clinical diagnosis of an ovarian malignancy was suspected. However, examination of ascitic fluid revealed exudative fluid with predominant lymphocytosis which goes in favour of tuberculosis.

Abdominal ultrasound was done which showed large ascites and bilateral ovarian mass septations (left: 3.1x4.4 cm, right: 3.5x2.7cm).

Computed tomography of the abdomen revealed small septate cystic mass in bilateral ovary with mild diffuse fat stranding in small bowel mesentery and omentum associated with gross ascites along with multiple small subcentimetric lymphnodes in small bowel mesentery and pelvis. This report further increased dilemma between ovarian malignancy and abdominal tuberculosis.

In view of suspected ovarian malignancy, Oncology and gastroenterology opinion was taken and upper GI endoscopy done which was normal.

Repeat Diagnostic along with Therapeutic (2 Litre fluid drained) abdominal tap was done which again showed 96% lymphocytes, 4% polymorphs with no malignant cells in the peritoneal fluid and 0.34 SAAG ratio which favoured exudative fluid etiology. This finding goes against the diagnosis of ovarian malignancy, but CBNAAT negative result of tubercular bacilli goes against the diagnosis of abdominal tuberculosis.

Ultimately, a laparoscopic exploration was done with multiple biopsies taken from peritoneal nodules. Around 4-5 litre of haemorrhagic ascitic fluid was drained from abdominal cavity which sent for cytology for malignant cells and TB-PCR. Per-operatively milliary tubercles seen all over pelvic cavity, tubes, ovary, peritoneum, small and large bowel, omentum, anterior abdominal wall, bladder. Bilateral ovaries were slightly enlarged and cystic forming mass with tubes and adherent to bowel. Multiple pelvic adhesions were seen between pelvic side walls, uterus, tubes, ovary and bowel known as a 'Frozen Pelvis'. Biopsies taken from tubes and peritoneal nodules sent for HPE and TB-PCR. Histological result showed genito-peritoneal tuberculosis (Figure 1-3).

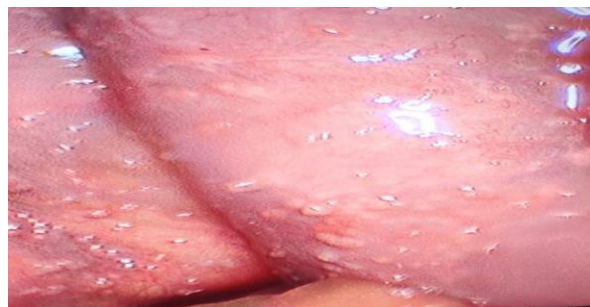


Figure 1



Figure 2

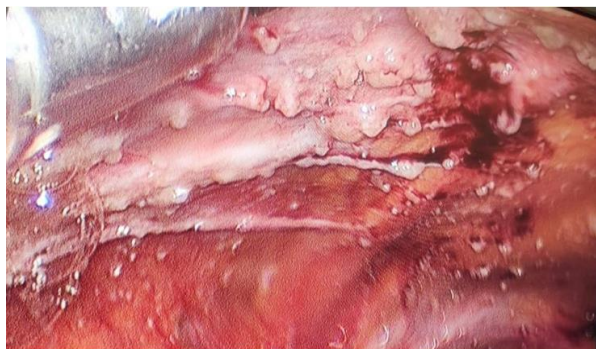


Figure 3

The patient was started on standard antitubercular treatment (rifampicin, isoniazid, ethambutol, and pyrazinamide) for first 2 months with significant improvement in her clinical picture.

Case 2:

A 60 year old, postmenopausal woman presented with progressive abdominal distension since 2 months and associated with complaint of decrease appetite. She was para 5, with all normal deliveries, last child birth 25 years back with tubal ligation. She had no history of postmenopausal bleeding per vaginum and also no significant past or medical history. Her general, cardiovascular and respiratory systems examinations were unremarkable. Abdominal examination showed distended abdomen with free fluid along with fluid thrill but without guarding and rigidity, per speculum examination revealed normal cervix, vagina and vaginal examination suggested anteverted, mobile, mild bulky uterus with no obvious tubo-ovarian mass felt coz of ascites. All her routine haematological and biochemical investigations including chest X-ray and ECG were normal.

CA 125 was elevated (517 U/ml), While CEA (3.0 ng/ml), alfa-fetoprotein (1.04) and B-HCG

(5.85 U/ml) levels were within normal laboratory range.

A diagnostic abdominal tap was done with cytology examination showing 93% lymphocytes, 5% polymorphs with no malignant cells in the peritoneal fluid and biochemical examination showing 0.55 SAAG ratio.

Based on the clinical and laboratory findings and elevated CA 125, clinical diagnosis of an ovarian malignancy was suspected. However, examination of ascitic fluid revealed exudative fluid with predominant lymphocytosis which goes in favour of tuberculosis.

Abdominal ultrasound showed large ascites with no comment on tubo ovarian mass.

Her HRCT lung showed mild bilateral pleural effusion with multiple nodules in bilateral upper and right middle lobe of lung with focal soft tissue density lesion in in right lobe suggestive in favour of mitotic changes which further arises dilemma of diagnosis.

Computed tomography of the abdomen revealed heterogeneously enhancing ill-defined mass lesion in right adnexa with associated diffuse Omento-peritoneal nodularity and gross ascites with few small bowel mesenteric lymph nodes largest 12mm which gave impression of mitotic etiology of ovary.

Ultimately, a laparoscopy exploration was done with multiple biopsies taken from peritoneal nodules. Around 5-6 litre of straw coloured ascitic fluid was drained from abdominal cavity which sent for cytology for malignant cells and TB-PCR. Per-operative findings were same as case1 (Milliary tubercles all over abdomen and frozen pelvis) along with right tubo ovarian mass. Biopsies taken from tubes and peritoneal nodules sent for HPE and TB-PCR.

Histological result showed Genito peritoneal tuberculosis.

The patient was started on standard antitubercular treatment(rifampicin, isoniazid, ethambutol, and pyrazinamide) for first 2 months with significant improvement in her clinical picture.

Case 3:

A 45 year old woman presented with progressive abdominal distension since 2-3 months and associated with backache,

flatulence, decrease appetite and weight loss. She was para 4, with all normal deliveries, last child birth 18 years back with tubal ligation. She no significant past or medical history but had positive family history for pulmonary tuberculosis in her husband (5 years back) and daughter (2 years back) for which they took ATT. Her general, cardiovascular and respiratory systems examinations were unremarkable. Abdominal examination showed distended abdomen with free fluid along with fluid thrill with bilateral palpable inguinal lymph nodes, per speculum examination revealed cervical erosion with bleed on touch and vaginal examination could not be assessed properly due to ascites. All her routine haematological and biochemical investigations including chest X-ray and ECG were normal.

CA 125 was elevated (688 U/ml), While CEA (1.07ng/ml), alfa-fetoprotein (2.65 ng/ml) levels were within normal laboratory range. Her HPV-DNA examination showed high risk for cervical cancer.

A diagnostic abdominal tap was done with cytology examination showing 98% lymphocytes, 2% polymorphs with no malignant cells in the peritoneal fluid and biochemical examination showing 0.54 SAAG ratio.

Abdominal ultrasound showed large ascites with normal uterus and bilateral ovaries.

Computed tomography of the abdomen revealed Mass seen in right lobe of liver suggestive of focal nodular hyperplasia, multiple small sub-centimetric para-aortic mesenteric lymphadenopathy, uterus normal size, right adnexa showed 4.9x4.6 cm. hemorrhagic cyst otherwise both ovary normal, moderate free fluid in peritoneal cavity suggestive of tubercular peritonitis.

Oncology opinion was taken to rule out malignancy and patient was started on standard antitubercular treatment (rifampicin, isoniazid, ethambutol, and pyrazinamide) for first 2 months with significant improvement in her clinical picture.

DISCUSSION:

Genital tuberculosis affects approximately 12% of patients with pulmonary tuberculosis and constitutes 15-20% of extra-pulmonary tuberculosis depending on the country². Apart

from that, the coexistence of pulmonary and genital tuberculosis has been reported in 8-15% of the cases in different studies³. The most common presenting symptoms of abdominal tuberculosis are abdominal pain (95%), weight loss (88%), fever (84.6%), abdominal mass (46.1%) and ranges of another symptoms including vomiting, constipation, abdominal tenderness, and signs of ascites and peritonitis⁴. Similarly, abdominal distension or bloating, urinary urgency, difficulty eating, abdominal/pelvic pain and weight loss have also been reported by patients with ovarian malignancy.

Peritoneal tuberculosis is a diagnostic challenge, particularly in the absence of evidence of pulmonary infection. It can be confused with ovarian or peritoneal cancer especially if high levels of Cancer Antigen-125 (CA-125) and ascites coexist. Although the CA-125 level is a useful tumour marker in the treatment monitoring of epithelial ovarian or peritoneal cancer, it can also be elevated in a series of benign gynaecological conditions such as pelvic infections, tuberculosis, Meig's syndrome, endometriosis and ovarian hyperstimulation, and a number of non-gynaecologic conditions like active hepatitis, acute pancreatitis, pericarditis, or pneumonia⁵. CA-125 should instead be utilized to track treatment response, as patients with tuberculous peritonitis have shown rapid decline in CA-125 levels parallel with clinical response and resolution of ascites after anti-tuberculosis treatment.⁵

In this report, ascites was seen in both cases. Similarly, Munef et al in 2001 reported ascites in 61% patients and Roya Nasiri et al reported 15 cases of pelvic TB with ascites⁶. Ascites develops secondary to exudation of proteinaceous fluid from the tubercles, similar to peritoneal carcinomatosis. Tubercular ascitic fluid is straw coloured usually exudative with high protein content, lymphocytes predominant but rarely retrieve Tubercle bacilli in AFB staining, bacteriology and culture because extra-pulmonary TB is paucibacillary.

Although low grade fever and weight loss are consistent finding of TB, it is uncommon in EPTB. In our series 1 patient reported fever and no one had weight loss which is in contrast to



study done by Hatami et al⁷ in which no patient suffered from fever. In our study chest X-ray, chest CT scan, ascitic fluid gene x-pert and microbiological pulmonary cultures with PCR were negative for Mycobacterium tuberculosis. In addition, the elevated CA 125 and the ovarian mass along with peritoneal infiltration in a middle-aged woman made the diagnosis of ovarian cancer more likely. But repetitive ascitic tap for malignant cell were negative. Ascitic fluid PCR and gene X-pert has low sensitivity for tuberculosis and ovarian mass with peritoneal thickening along with febrile episode further suspect tuberculosis. Ascitic fluid adenosine deaminase (ADA) is used as a useful diagnostic test for abdominal TB. ADA, purine degrading enzyme, is widely distributed in tissue and body fluid which is necessary for T lymphocytes proliferation and differentiation, a prominent process in immune cellular response against M. tuberculosis. A meta-analysis found that ADA level of ascites fluid above 39 IU/L was reliable to diagnose peritoneal tuberculosis with 100% sensitivity and 97.2% specificity⁸.

In our case series USG and CT scan findings showed similar features for peritoneal tuberculosis and carcinomatosis, further making diagnosis difficult.

USG and CT guided FNAC with histopathology of TB lesion can provide confirmatory diagnosis. But due to secondary nature of genital TB, the infecting organisms are sparse in number, sample may not represent the infected area and the infected site can be easily missed. CT can easily miss a lesion of 4-5mm.

Laparoscopic peritoneal biopsy is a rapid and safe method of accurate diagnosis of genito-peritoneal tuberculosis in 97% cases as it can identify <1 cm tubercle also. The sensitivity of gross laparoscopic appearance in diagnosing peritoneal TB is almost 100%.⁹ In our series diagnostic laparoscopy was done in two cases and tuberculosis was confirmed after histopathology report and AKT was started.

REFERENCES:

- Bilgin T, Karabay A, Dolar E. Peritoneal tuberculosis with pelvic abdominal mass, ascites and elevated CA 125 mimicking advanced ovarian carcinoma: a series of 10 cases. *Int J Gynecol Cancer* 2001;11(4):290-4.
- Malhotra H. Genital tuberculosis. *Apollo Med* 2012;9(3):224-7.

- Arora VK, Gupta R. Relevance of DOTS strategy in female genital tuberculosis. *Obst Gynae Today* 2002;7:179-83.
- Hossain SM, Rahman MM, Hossain SA, Ahmed SFU. Mode of presentation of abdominal tuberculosis. *Bangladesh Med JKulna* 2013;45(1-2):5-7.
- Chavhan GB, Hira P, Rathod K. Female genital tuberculosis: hysterosalpingographic appearances. *Br J Radiol* 2004;77:164-9.
- Penna L, Manyonda I, Amias A. Intra-abdominal milliary tuberculosis presenting as advanced ovarian carcinoma with raised CA125. *Gynaecol Obstet Invest* 2001;51(4):277-9.
- Hatami M. Tuberculosis of the female genital tract in Iran. *Arch Iranian Med* 2005;8:32-35.
- Riquelme A, Calvo M, Salech F, Valderrama S, Pattillo A, Arellano M, et al. Value of adenosine deaminase (ADA) in ascitic fluid for the diagnosis of tuberculous peritonitis: A meta-analysis. *J Clin Gastroenterol* 2006;40:705-10.
- Bashar AAH, Anees KN, Enas A, Abdul R, Al Kazzaly. Role Surgery and Laparoscopy in Management of Abdominopelvic Tuberculosis. *Iraqi Postgrad Med J* 2011;10.

