

Peritoneal Tuberculosis Presented with Gross Ascites Following Abdominal Hysterectomy

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Abstract:

Tuberculosis is an emerging medical challenge in each and every part of the world which affects all most all parts of the body even though the commonest presentation is pulmonary tuberculosis. Peritoneal tuberculosis will lead to fibrosis and scarring of the intra-peritoneal organs while producing ascites. This is a case of peritoneal tuberculosis which presented with gross ascites, eight months after an abdominal hysterectomy.

Keywords: peritoneal tuberculosis; ascites; post hysterectomy

Introduction

Tuberculosis (TB) is a major health challenge with 10.6 million affected people across the globe in 2021. This is an increment of 4.5% compare to 2020. Highest prevalence of TB was reported from India (28%), Indonesia (9.2%), China (7.4%), Philippines (7.0%) and Pakistan (5.8%) [2]. Even though the pulmonary TB is the commonest form, prevalence of extra-pulmonary TB is rising throughout the world making a significant challenge to health sector. This is more common among females compare to males while the genital tract is being more vulnerable to the infection [3,4]. Genital tract TB ultimately lead to scarring due to fibrosis of tube which ended up with tubal factor subfertility [5].

Miliary tuberculosis (MTB) is a result of wide spread dissemination of the mycobacteria throughout the body which accounts for 1-2% of all extra pulmonary TB. Poor socio-economic status, female gender, immunosuppressed state, alcoholism and extremes of age are the risk factors for the MTB [7-9]. Bacilli enters into the peritoneal cavity through hematogenous spread from a lung focus or rarely through the diseased bowel to cause peritoneal tuberculosis (PTB) [10]. Risk factors for PTB are HIV infection, diabetes mellitus, treatment with anti-tumor necrosis factor (TNF) agents, ongoing peritoneal dialysis and hepatic cirrhosis [11]. Patient may present with pyrexia of unknown origin (PUO), abdominal distention due to ascites and abdominal pain [6].

Case history

51-year old mother of three children, underwent total abdominal hysterectomy (TAH) and bilateral salpingectomy 8 months ago due to symptomatic fibroid uterus. The surgery was a straight forward one and there were no extensive tissue dissections. She had uneventful recovery after the surgery. Histology report confirmed the pre-operative diagnosis of fibroid uterus and excluded the malignancy. Her liver, renal and cardiac function were normal during the pre-operative investigations. She re-admitted to the ward, eight months later with one-week history of progressive abdominal distention, abdominal pain and feverish feeling. She had shortness of breath, but denied any history of chronic cough. She didn't have loss of appetite, loss of weight, evening pyrexia or contact history of known TB infected person. Her urine output remained normal following the surgery.

Her abdomen was tense due to gross ascites even though there were no any significant tenderness. She didn't have documented fever. She didn't have cervical lymphadenopathy. Air entry of the bilateral lung fields were reduced.

Ultra sound scan (USS) of the abdomen confirmed the presence of gross ascites with diffuse omental thickening. There was no para-aortic lymphadenopathy. Both ovaries were normal. There were no any abdomino-pelvic masses. Her full blood count and C-reactive protein level were normal. Her chest X-ray showed bilateral mild pleural effusions (figure 1). Summary of the investigation results are as follows (Table 1)



Figure 1- Chest X-ray

Investigation	Results
White blood cells (WBC)	7200/ul
Hemoglobin	12.4g/dl
Platelet	410000/ul
C-reactive protein	4ng/ml
Blood urea, serum creatinine	Within normal range
Serum sodium, potassium and chloride	Normal
AST, ALT, ALP	Normal
Total protein	7.0g/dl
Albumin	3.2g/dl
Globulin	4.0g/dl
Total and direct bilirubin	Normal
ESR	54mm/first hour
CA 125	25 iu/ml
Dengue NS1 antigen	Negative
Dengue antibody	Negative
Blood picture	Reactive picture
Blood culture and urine culture	No growth
Ultra sound scan of the abdomen and pelvis	Gross ascites with thickened omentum
Echo cardiogram	Normal
Peritoneal fluid aspiration results	
WBC	1200/ml
Mononuclear cells	90%
Polymorphonuclear cells	10%
Glucose	53mg/dl
Lactic dehydrogenase	360u/l
Protein	5.59g/dl
Culture	No bacterial growth/ TB culture results pending
TB PCR (polymerase chain reaction)	Results pending
Staining for acid fast bacilli (AFB)	Negative
Mantoux test done	Positive
Chest X-ray	Bilateral pleural effusions
Sputum for AFB	Negative

Table 1- summary of the investigation results

As all these investigation results pointed towards the diagnosis of PTB, decision was taken at the multi-disciplinary team meeting to go ahead with diagnostic laparoscopy. Laparoscopy confirmed the USS findings. Other than that, she had diffuse miliary deposits all over the peritoneum, omentum, bowel surface, liver surface, under surface of the diaphragm,

bladder surface and pouch of Douglas (Figure 2). Multiple biopsies taken from the miliary deposits and sent for histology and TB culture. She was started on anti-TB therapy while confirmatory test results are pending. Her symptoms gradually settled. Her histology reports showed granuloma formation with central caseous necrosis suggestive of TB.

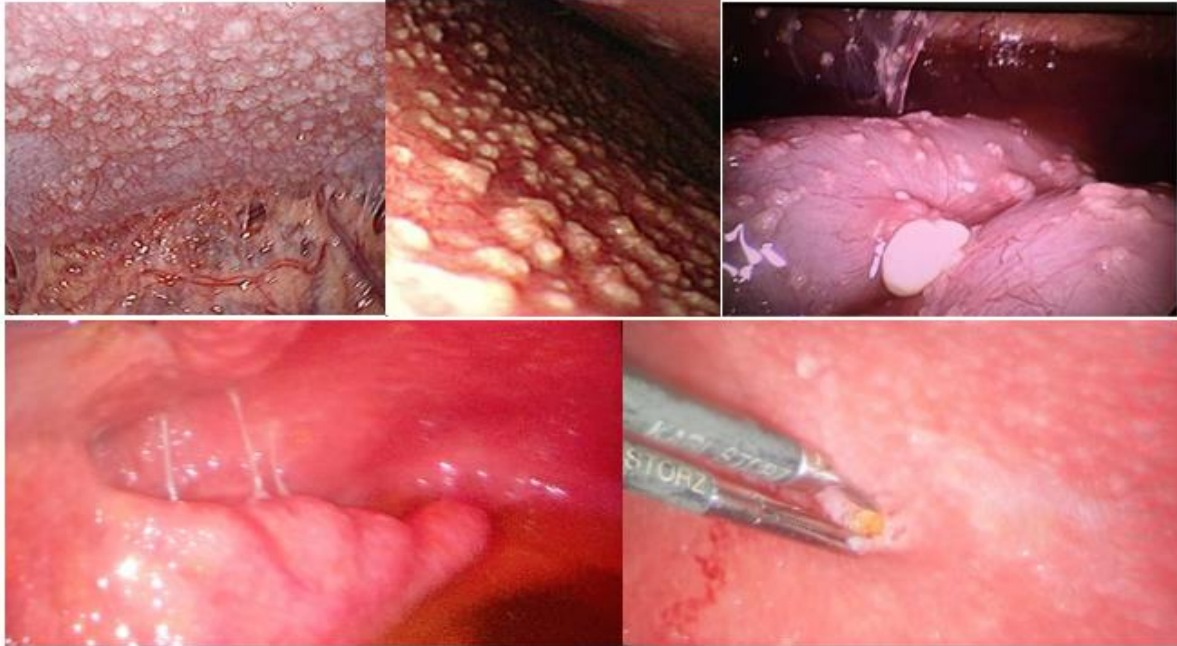


Figure 2: Laparoscopic view of the peritoneal cavity (From left to right- Parietal peritoneum with adhesions, liver surface, bowel surface, thickened omentum and parietal peritoneum)

Discussion

As this patient presented following hysterectomy, possible occult urinary tract injuries should be excluded as they may present with free fluid in the abdomen. But in this case, she was totally normal after surgery for 8 months without any symptoms and she presented with an acute history. If a patient is having an undiagnosed urinary tract injury during a hysterectomy, she should be unwell after the surgery.

PTB contributes to 4.9% of extra pulmonary TB cases while being in the sixth commonest site to have extrapulmonary TB [12]. This case shows the importance of taking a comprehensive history and examination in a patient without limiting to common possible diagnosis. Sametime, it shows the importance of considering tuberculosis as a cause for gross ascites in a setting where the prevalence is high.

This could have been diagnosed earlier if this patient was more conscious about the symptoms she had. Even though she didn't show typical features of PTB like gross ascites, abdominal distention and abdominal pain she had features suggestive of feverish feeling which could have alert the physician.

As only one third of PTB patients shows clinical and radiological signs of pulmonary TB (even though it is the commonest site), it becomes a diagnostic challenge to the physicians [13]. Even though it was not done in this patient, peritoneal fluid analysis can support in the diagnosis of PTB as 68% of the patients are having lymphocytic predominant WBC containing (500-1500/mm³) ascites with protein contain >2.5g/dl [14]. Radiological findings of these PTB patients are lymphadenopathy (14-47%), loculated or localized ascites (36-67%) and peritoneal thickening (23-32%) [15]. Sensitivity of Ziehl-Neelsen stain of ascetic fluid (0-6%)

and culture of the ascetic fluid (16-58%) can be increased by centrifuging the sample [10]. TB PCR from ascetic fluid has high specificity and low sensitivity. But Adenosine deaminase level in peritoneal fluid (>30iu/L) is highly suggestive of TB (sensitivity close to 100% and specificity 95%) [14]. Even though supporting in diagnosis, performing Mantoux test will not differentiate between latent TB and active TB. Even though the culture is the gold standard in diagnosing TB, negative culture will not exclude the disease. Consumption of prolong time for the reporting is the most problematic thing in culture. Value of laparoscopy come into the picture in these occasions which allows the physician to directly visualize the peritoneal cavity while allowing to obtain samples. Three different characteristic laparoscopic appearances are as follows [16].

1. substantial peritoneal thickening with dense adhesions that may extend to adjacent organs
2. thickened peritoneum with yellow-white tubercles
3. thickened peritoneum without tubercles

If the diagnosis is not obvious with the available investigation results and clinical findings, trial of anti-TB therapy is justifiable in a case with high index of suspicion. In this case it was not so and anti TB therapy for twelve months will settle the problem.

Conclusion

Even though rare, peritoneal TB should be born in mind when dealing with a woman presented with gross ascites without any obvious evidence

of liver or renal failure, as early diagnosis and proper treatment reduce the morbidity and mortality.

Conflict of interest

No conflict of interest.

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Consent

Informed written consent obtained from the patient.

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