

CASE REPORT

Unmasking the Masquerade: Navigating the Diagnostic Enigma of Abdominal TB Mimicking Endometriosis

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Abstract

Abdomen is the second most common site of Tuberculosis. The diagnostic challenge of abdominal tuberculosis (TB) masquerading as endometriosis arises due to overlapping symptoms and the non-specific nature of both conditions. Abdominal TB can affect various organs, including the peritoneum, leading to symptoms such as abdominal pain, pelvic pain, and menstrual irregularities—symptoms that are also associated with endometriosis. The presentation is therefore vague and non specific ,making its diagnosis difficult. Abdominal tuberculosis at any age can always present as endometriosis or peritoneal carcinomatosis or ovarian malignancy, ileocecal c and other conditions with elevated CA125 levels and hence poses a diagnostic challenge. Presenting an interesting case of a 23 year old ,married female who presented to the ER with acute abdomen. Patient gives history of treatment for endometriosis for the past three months, in light of her symptoms and investigations that she presented with. Patient was posted for diagnostic laparoscopy and was diagnosed as intra abdominal TB with tissue diagnosis. Patient then received ATT and underwent infertility evaluation. Hence Diagnostic laparoscopy with tissue diagnosis is gold standard for timely diagnosis and treatment of Abdominal TB. Hence such cases must be approached with caution and with all the differentials in mind for prompt treatment.

Introduction

Tuberculosis (TB) has high morbidity and mortality caused by *Mycobacterium tuberculosis*. Extrapulmonary TB can affect any organ system in the body. Fallopian tubes are affected in 90% cases, uterus in 50–80%, ovaries in 20–30% and cervix in 5–15% in case of genital tuberculosis. One of the most common complication is infertility. The signs and symptoms of abdominal TB are vague and nonspecific. CA 125, a biomarker for ovarian ca also rises in benign diseases such as pulmonary and extrapulmonary tuberculosis, endometriosis and makes the diagnosis difficult. This

is a case report of a patient who was wrongly diagnosed as endometriosis and given treatment for the condition; with no improvement in her symptoms and fertility. Patient was finally diagnosed with abdominal TB after diagnostic laparoscopy and tissue diagnosis and received ATT which helped with her fertility and symptoms.

Case Report

In this case report, we present an interesting case of a 23-year-old, with married life of 8 months, nulligravida who presented to the ER with acute abdomen—progressive pain for 1 week, and on examination, she had left iliac fossa tenderness, no guarding or rigidity. Patient gave a history of ongoing treatment for endometriosis for the past 3 months with Tab Dienogest 2 mg, in light of her symptoms and investigations—CA 125 – 272.3 U/mL and MRI showing multiple left ovarian cystic lesions of abnormal signal intensity suggestive of hemorrhagic cyst versus less likely endometrioma and moderate amount of ascites seen in the pelvis with some sort of heterogeneous intensity on T1-weighted images suggestive of hemorrhagic ascites. When she presented to us; her CA 125 was elevated—702 U/mL, other

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Fig. 1 Pretreatment intraoperative findings on diagnostic laparoscopy

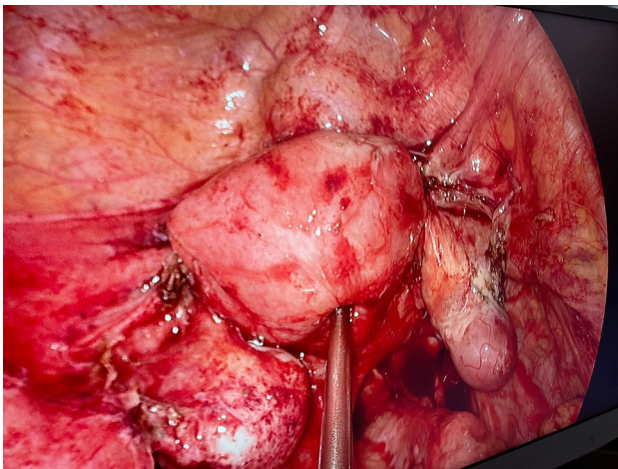


Fig. 2 Intraoperative findings

tumor markers—carcinoembryonic antigen (CEA), alpha-fetoprotein (AFP) and lactate dehydrogenase (LDH) were normal. Her MRI showed gross ascites with centrally placed bowel loops in abdominal cavity and peripherally enhancing thickened peritoneum—features likely suggestive of encapsulating sclerosing peritonitis and T2 shading with T1 hyperintense thin walled lesion in the left ovary—features suggestive of small hemorrhagic cyst/endometriotic cyst. Patient was posted for diagnostic laparoscopy. Intraoperatively, there was disseminated military tubercles in pelvic and abdominal peritoneum and viscera and was diagnosed as intra-abdominal TB with tissue diagnosis. Patient then received ATT for 6 months and underwent infertility evaluation after treatment which showed remarkable improvement in her condition (Figs. 1 and 2).

Discussion

Abdominal tuberculosis is an often ignored entity in the spectrum of tuberculosis. Its presentation is vague with nonspecific symptoms which make the diagnosis of the condition difficult. With advent of better imaging technology such as MRI and CT—it is possible to identify lesions which could be due to a chronic inflammation and to differentiate it from a malignancy. The Lingenfelter criteria have been suggested to diagnose abdominal tuberculosis: These include (a) clinical manifestations suggestive of TB, (b) imaging evidence indicative of abdominal TB, (c) histopathological or microbiological evidence of TB and/or (d) therapeutic response to treatment. Tuberculous peritonitis, a type of abdominal TB, is a rare manifestation of tuberculosis, occurring in less than 1–2% of tuberculosis patients. It is still a very important cause of ascites in endemic areas [1].

Exudative ascites which is associated with peritoneal tubercles resemble the signs and symptoms caused by ovarian carcinoma. These include abdominal distention, ascites and either a pelvic or adnexal masses. Fever and weight loss is commonly seen in both conditions. Many women undergo radical surgery due to the difficulty of preoperative diagnosis and low negative predictive value of ascitic fluid cytology, cultures and other microbiological tests.

Because early diagnosis and treatment is crucial in this condition, culture growth of mycobacterium species in peritoneal biopsy or ascetic fluid may not be useful as the waiting period for the culture can be upto 6 weeks.

The polymerase chain reaction (PCR) for mycobacterium is expensive and also not widely available hence cannot be used either. Adenosine deaminase (ADA) activity in ascitic fluid has been proposed as a useful diagnostic test for abdominal tuberculosis (TB). However, a conclusive diagnosis cannot be drawn from these tests. Measurement of ADA in ascitic fluid may be a useful screening test in countries with a high incidence of tuberculosis and in high-risk patients [2].

In a retrospective study conducted by reviewing patients evaluated for ascites and elevated serum CA 125 levels at a tertiary care teaching hospital in South India between January 2014 and December 2017; conducted by Anitha Thomas et al. [1]; 39% patients had to undergo laparoscopy and 30% underwent laparotomy for establishing the diagnosis. Tumor markers such as CA 125 lack specificity and may be elevated in many conditions, including tuberculosis. One such study showed that majority of the patients with TBP had a mean CA 125 level of 333 IU/ml which usually correlated with malignancy or endometriosis.

About 10% of young women are affected by endometriosis presenting with dysmenorrhea, chronic pelvic pain,

dyspareunia and infertility [3]. The diagnosis of endometriosis and its severity can be made by ultrasound scan and pelvic MRI. CA 125 is generally high, but not specific. In our case, the patient presented with dysmenorrhea and abdominal pain and imaging and elevated CA 125 was consistent with endometriosis. Yet, exploratory laparoscopy was necessary for the correct diagnosis.

Diagnostic laparoscopy or laparotomy becomes, therefore, necessary to diagnose abdominal TB and to differentiate it from other conditions. Intraoperative frozen sections can also help in a correct diagnosis and hence avoid unnecessary extensive surgery. In most cases, a negative diagnosis of other conditions can be made by the intraoperative findings which include multiple diffuse involvement of the visceral and parietal peritoneum, white ‘miliary nodules’ or plaques, ascites, fibrinous strands and adhesions, adnexal masses, ‘cocoon’ abdomen and omental thickening. Tissue diagnosis with biopsy of the affected peritoneum or omentum is a good representative tissue for histopathology as well as microbiological tests. Positive staining for acid-fast bacilli may be gold standard in diagnosis but is negative in most biopsy specimens. Treatment for extra-pulmonary TB includes treatment with ATT for 6 months and was found to be adequate [4] as evidenced in our case with the pretreatment and posttreatment images.

Conclusion

Abdominal TB can mimic a number of conditions including ovarian malignancy, endometriosis, ileocecal ca and, therefore, requires a high degree of suspicion in India which is endemic for TB.

Gold standard for diagnosis of pulmonary tuberculosis is the detection of AFB but this has a low yield in abdominal

TB. Diagnostic laparoscopy hence should be considered early in the workup for timely diagnosis and treatment.

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Declaration

Conflict of interest The authors claim that they have no conflict of interest.

Informed consent Informed consent was obtained from the participant in the study.

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