

Tuberculosis Peritonitis after spontaneous Abortion: A Case Report

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August 2, 2023

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Abstract: Introduction: Tuberculosis (TB) is a significant problem worldwide. The rate of active tuberculosis in pregnancy is rising and it is a significant cause of maternal mortality during pregnancy.

Case presentation: This study is about a young woman who was suffering from TB peritonitis, which is rare, with a highly progressive clinical course following the spontaneous abortion of 16-week gestation that refer with abdominal pain. Our case received a diagnostic laparotomy that showed several small-scale implants on the peritoneum and viscera. Histopathology revealed chronic caseating granulomas with necrosis. With the possible diagnosis of tuberculosis anti-mycobacterial therapy was started and she received these drugs for 6 months. The patient's clinical manifestations completely disappeared and chest CT scan was normal after treatment.

Conclusion: The diagnosis of peritoneal tuberculosis is challenging and it could be made by CT imaging, explorative laparoscopy, evaluation of biopsies from specimens and culture or PCR from ascites fluid or infected tissues.

Key words: TB, peritoneal tuberculosis, extra pulmonary tuberculosis, acute abdomen, pregnancy

1. Introduction Tuberculosis (TB) is a significant problem worldwide. About 25% of whole world population are estimated to be infected with mycobacterium tuberculosis. Although it is a preventable and treatable disease, but according to the WHO reports, TB infected about 10 million cases and claimed 1.5 million lives in 2018.(1) It was estimated that the rate of active tuberculosis in pregnancy is rising in United States(2). Most of these pregnant women lived in Africa and Southeast Asia(3). TB is a significant cause of maternal mortality during pregnancy. Pregnancy-related complications contain increased spontaneous abortion rate, being smaller relative to the weeks of pregnancy, suboptimal weight gain in pregnancy, labor before 37 weeks of pregnancy, low birth weight, and enhance neonatal mortality. Delay in the diagnosis of this infection is an independent factor that is associated with both enhanced obstetric morbidities and preterm labor by four- and nine-folds, respectively (4). While TB mainly affects the lungs, about 33% of TB cases might suffer from extra pulmonary disease. The peritoneum is an usual extra pulmonary site of TB.(5)

We presented a woman with a 16-week spontaneous abortion who referred to our emergency ward with the feature of acute abdomen as the first sign of tuberculosis, a rare case of tuberculosis peritonitis.

2. Case Presentation A 20-year-old G2P1Ab1 woman who aborted spontaneously a 16 week pregnancy at home in 11 days ago, referred to our hospital with general abdominal pain from 10 days ago. The abdominal

pain was intensified and associated with nausea, vomiting, anemia and, massive ascites. She had a complaint of anorexia, fainting, and sweating. On the physical examination; PR=120/min, BP=90/60mmHg, RR=18/min, OT=38 and O2sat=97% and she had abdominal distension with diffuse tenderness and guarding especially in the lower abdomen, and positive cervical motion tenderness that suggested a hemorrhage or massive ascites. Transvaginal ultrasonography confirmed the presence of ascites. (Figure 1-2). Laboratory data revealed Hb=5/6 gr/dL, white blood count were 6100, C reactive protein= 3+ and ESR=120. In addition UA, UC and PCR for covid 19, were sent due to abdominal pain and corona virus pandemic. The results of tests performed to evaluate renal function and level of hepatic transaminase did not indicate unusual values.

The patient subsequently underwent diagnostic laparotomy due to suspicious unsafe abortion in history, abdominal examination, and severe anemia with the probable diagnosis of acute abdomen. Laparotomy revealed 3liters thick yellow pus in the abdominopelvic cavity and substantial adhesions between viscera, and several small-scale nodular implants on the surface of peritoneal, liver, and stomach. Intestine, omentum, mesentery, uterine, ovaries and fallopian tubes were normal except for inflammation. Irrigation of abdominopelvic cavity and adhesiolysis were done. There was no specific site for the purulent ascites in exploration. Tissue samples from the peritoneum, omentum and lymph nodes were sent to pathology and some tissue samples and ascetic fluid were sent for the microbiology, cytology and PCR for tuberculosis examinations. The patient was treated with intravenous broad-spectrum antibiotics till 72 hours. Tissue samples of pathological study showed granulomatous inflammation and samples for smear and culture and cytology revealed negative findings. In addition, covid19 PCR was reported negative.

According to large amount of intraperitoneal pus without a specified source and granulomatous inflammation on pathology report (figure 3), with the probable diagnosis of tuberculosis, PPD and Chest radiography were done. PPD was negative but CXR revealed patchy consolidations.

Despite 72hours of antibiotic therapy, there was no improvement in clinical condition so according to the laboratory findings and medical records, thoracic computed tomography (CT) scan was performed for further evaluation of the ascites etiology (figure 4). Bilateral pleural effusion, atelectasis, pulmonary parenchymal consolidations and sub plural patchy consolidation were seen. Abdominopelvic Ultrasonography was normal. With the possible diagnosis of tuberculosis anti-mycobacterial therapy with isoniazid, rifampin, pyrazinamide, and ethambutol was prescribed and the patient received these drugs for 6 months till complete the course of treatment. The patient's clinical manifestations completely disappeared and chest CT scan was normal after treatment.

3. Discussion

Tuberculous peritonitis is a form of abdominopelvic TB that might affect the peritoneum, gastrointestinal tract, lymph nodes or solid viscera. However, less than five percent of all cases suffer from this form of TB.(5)

Due to the lack of specific presentations and laboratory results, TB has a diagnostic challenge. In addition, presentations of peritoneal TB may be similar to several other infectious or malignant diseases(6). The most prevalent symptoms include fever, weight loss, and abdominal swelling. Meanwhile, non-specified symptoms include abdominal distension, ascites, and abdominal mass. It is included in the differential diagnosis of fevers with unknown origin, peritoneal carcinomatosis, ovarian cancer, and ascites of portal hypertension or cardiac origin (7). In addition, not always pulmonary lesions are considered as TB or the disease may not have any evidence on chest radiograph. Furthermore, for a number of patients, pleural effusion may be the only radiologic presentation (8). Frequent ultrasonography and computed tomographic presentations include ascites, thickening of the viscera (omental, mesenteric, peritoneal, and intestinal), adhesions between viscera, and lymphadenopathy (9, 10), the same as our patient. Laparoscopic studies reported exudative, cloudy ascites with multiple whitish nodules or tubercles studding the visceral and parietal peritoneum, extensive adhesions and omental thickening.(11) In our case imaging and operative findings showed ascites, extensive adhesions, omental thickening and nodular peritoneal implants. In histological examina-

tion existence of Caseating granulomatous inflammation may be necessary for a definite diagnosis and is a hallmark of tuberculous peritonitis, as in our patient's pathology report. The culture of affected tissues or the PCR can be used to confirm the diagnosis. Nevertheless, it should be noted that culturing is not an appropriate technique for fluids obtained from babies, as there is a low chance. Patients with ascites have improvement within a few weeks of initiating treatment in 90 percent of cases. (12) Its management contains a sensible combination of antitubercular therapy and surgical interventions, which may be necessary to address complications like intestinal obstruction and perforation. While it can be cured using currently available techniques, it claims several lives and infects many cases. Those who presented complications like perforation, abscess, fistula, bleeding, and/or high-grade obstruction may require surgery.(8) Females with advanced levels of TB and those who simultaneously suffer from HIV infection often have the worst prognosis of TB.(4) TB is a significant cause of maternal mortality during pregnancy. Pregnancy-related complications contain increased spontaneous abortion rate, being smaller relative to the weeks of pregnancy, suboptimal weight gain in pregnancy, labor before 37 weeks of pregnancy, low birth weight, and enhance neonatal mortality. Delay in the diagnosis of this infection is an independent factor that is associated with both enhanced obstetric morbidities and preterm labor by four- and nine-folds, respectively. Several factors contribute to pregnancy-related effects of TB, like its severity, its prognosis during pregnancy, the presence of extra pulmonary infections, HIV coinfection, and time to start treatment.(4) In this case, also we reported a rare combination of disseminated tuberculous peritonitis after spontaneous abortion with the feature of acute abdominal pain that underwent diagnostic laparotomy and 6 months tuberculosis treatment.

In Conclusion, Tuberculous peritonitis is a form of abdominopelvic TB which can mimic many other infectious or malignant diseases. The diagnosis is challenging and it could be made by CT imaging, explorative laparoscopy, evaluation of biopsies from specimens and culture or PCR from ascites fluid or infected tissues. Also, females whose diagnosis is made at puerperium often have the worst TB prognosis, so early diagnosis is important to prevent morbidities.

Conflict of Interests The authors declare no conflict of interests.

figure 1: sonography view of abdominopelvic cavity



figure 2: sonography view of abdominopelvic cavity



figure 3: granulomatous inflammation in omental specimen

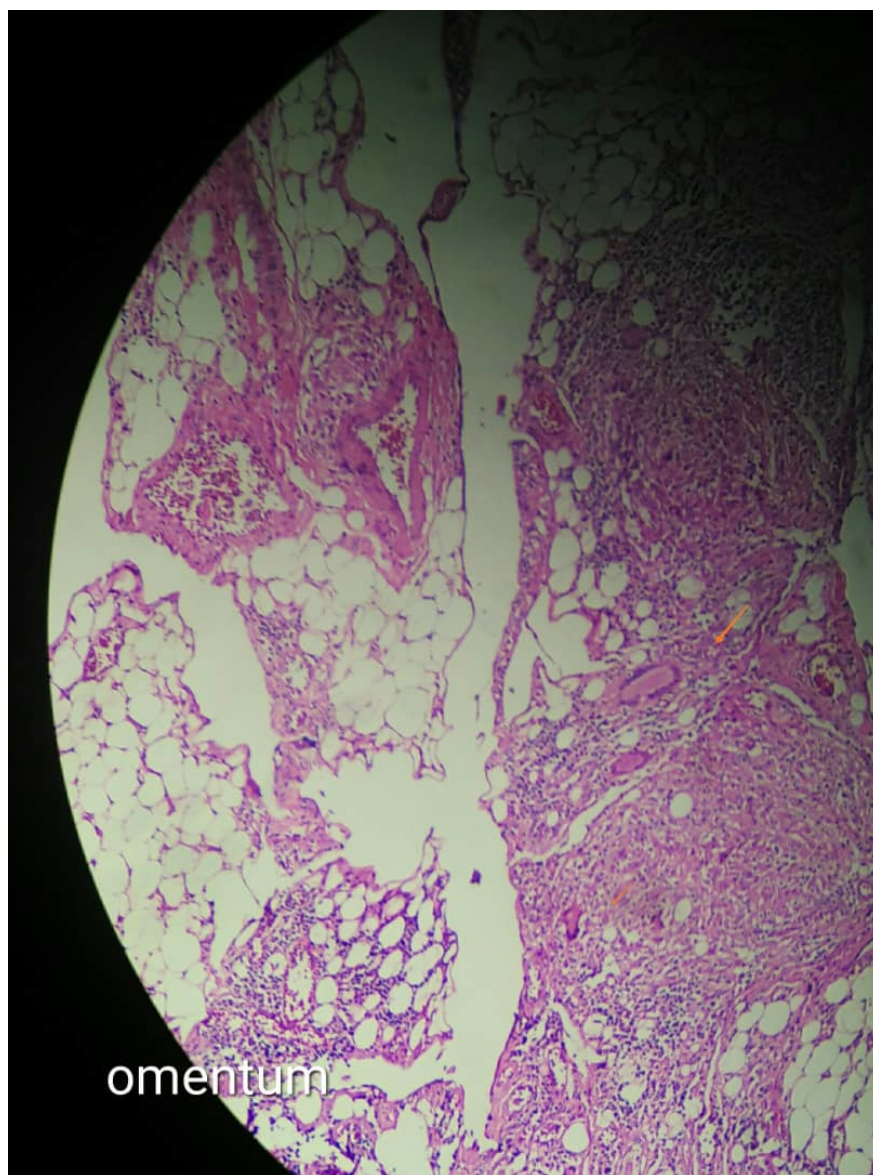
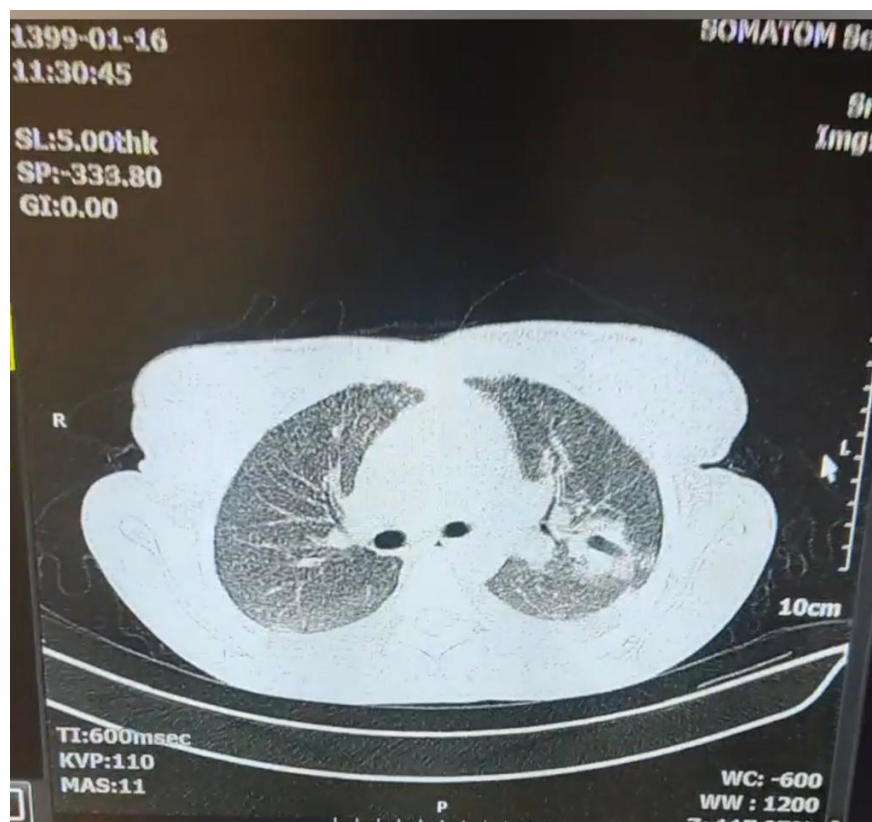


figure 4: Chest CT scan



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