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Case Report

A Case Report of Tuberculosis with Ascites

Saeedeh Parvaresh [1], Hossein Nikpour [2], Ali Hosseininasab [3], Reza Sinaei [4], Maedeh Jafari [5*]

1. Physiology Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran
2. Pathology and Stem Cell Research Center, Kerman University of Medical Sciences, Kerman, Iran.
3. Infectious and Tropical Research Center, Kerman University of Medical Sciences, Kerman, Iran.
4. Department of Pediatrics, School of medicine, Kerman University of Medical Sciences, Kerman, Iran; Endocrinology and Metabolism Research Center, Institute of Basic and Clinical Physiology Sciences, Kerman University of Medical Sciences, Kerman, Iran.
5. Department of Pediatrics, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran; Clinical Research Development Unit, Afzalipour Hospital, Kerman University of Medical Sciences, Kerman, Iran.

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ABSTRACT

Background: Tuberculosis is a highly contagious infectious disease caused by mycobacterium tuberculosis. This disease is mostly recognized as a pulmonary disorder but it can be transmitted to other parts of the body by blood. The most common extra pulmonary sites, including lymph nodes, abdomen, pleura, and abdominal tuberculosis, are less common than pulmonary tuberculosis. Given the importance of tuberculosis, a rare case of tuberculosis was reported.

Case Report: A 13-year-old girl was admitted to Afzalipour hospital, Kerman, because of fever and abdominal pain. Her fever started from two weeks ago and generalized abdominal pain started a week ago. Ultrasound and abdominal CT scan showed fluid accumulation in the abdominal cavity. The result of chronic granuloma pathology was reported in favor of mycobacterium tuberculosis, and PCR test of pleural tuberculosis was positive. She was treated empirically with Isoniazid, Rifampin, Ethambutol, and Pyrazinamide. She was visited a month later. Her general condition was good and the clinical symptoms disappeared.

Keywords: Mycobacterium tuberculosis, Fever, Ascites

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*Correspondence Maedeh Jafari; Email: mjafari@kmu.ac.ir

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Introduction

Tuberculosis (TB) is one of the most dangerous infectious diseases that affected approximately one-third of the world's population. Tuberculosis is a highly contagious infectious disease caused by mycobacterium tuberculosis (1,2). In 2015, about 62% of new TB cases were reported in Asia (3). Tuberculosis is mostly recognized as a pulmonary disorder but can be transmitted to other parts of the body by blood (4). The most common extra pulmonary sites including lymph nodes, abdomen, pleura, and abdominal tuberculosis are less common than pulmonary tuberculosis (5, 6). Nonspecific and less likely to be diagnosed symptoms are associated with higher mortality and morbidity (7). Approximately, 15 to 25% of abdominal tuberculosis is associated with pulmonary tuberculosis (8,9). Here, a rare case of tuberculosis was reported.

Case Report

The patient was a 13-year-old girl from Chabahar, Zahedan, who was hospitalized in Afzalipour hospital, Kerman, with fever and abdominal pain. Her fever started from two weeks ago and generalized abdominal pain started a week ago. This study was performed after obtaining the approval of the Ethics Committee of Kerman University of Medical Sciences (Ethical code: IR.KMU.AH.REC.1399.084). At baseline, the patient had a heart rate of 120 bmp, respiratory rate of 24 per minute, and temperature of 40°C. Systemic examination showed ascites and abdominal tenderness but no decrease in breath sound in lung examination. The laboratory data showed white blood cell count of 5×10^6 /µl with 64% neutrophils, hemoglobin concentration of 9.6 g/dl, platelet of 612000/µl, and ESR of 89 mm/h. The mean levels of aspartate aminotransferase, alanine aminotransferase, and alkaline phosphatase were 23, 10, and 454 IU/L, respectively. In ascites examination, ascites fluid analysis showed a semi-transparent appearance, white blood cell of 690 per µl with 40% neutrophils, glucose level of 6.7 mg/dl, LDH of 937 IU/L, and protein level of 3.5g/L, and smear and ascites fluid culture and cytology were negative. The patient was diagnosed with bacterial peritonitis. She was treated with antibiotics (Cefotaxime and Amikacin), but her fever was not disappeared after treatment. Abdominal CT scans with oral and intravenous contrast agents were requested; radiology reported increased peritoneal thickness in favor of tumor lesion without involvement of lymph nodes. The patient underwent whole body bone scan and the result was normal. Urine analysis was done and no proteinuria was found. The chest X-ray (CXR) was normal on the first day of hospitalization. After a week, the fever continued. The repeat CXR showed pleural effusion in the left side. Pleural fluid showed white blood cell count of 1×10^3/µl with 95% neutrophil, glucose level of 71 mg/dl, protein level of 1.5 g/L, and LDH of 1447 IU/L. The culture and cytology of pleural effusion were negative. The patient received Meropenem and Vancomycin. The chest tube was inserted for the patient. PPD and morning sputum specimens were negative for mycobacterium tuberculosis.

Pleural fluid culture, acid-fast bacilli (AFB) smear, and PCR were negative for mycobacterium tuberculosis. The patient was examined for rheumatologic diseases including lupus and immunodeficiency (HIV), which all were negative. Finally, for exclusion of malignancy and tuberculosis, open biopsy specimens were obtained from pleural tissue. The result of chronic granulomatous pathology was reported in favor of mycobacterium tuberculosis and PCR test of pleural tuberculosis was positive. At this point, the standard anti-tuberculosis treatment of the patient was started with Isoniazid, Rifampin, Ethambutol, and Pyrazinamide. Her fever disappeared after a week of treatment. She continued anti-tuberculosis treatment with 4 medications for two months and Isoniazid and Rifampin for 4 months. She was visited a month later. Her general condition was good and the clinical symptoms had disappeared.

Discussion and Conclusion

Peritoneal tuberculosis is a disease that is usually occurred due to the reactivation of latent foci of infection in the peritoneum after hematogenous release; patients with this disease had no known previous history of tuberculosis. Patients usually complain of abdominal pain but may have fever, weight loss, fatigue, and general malaise. Positive tuberculin skin test is helpful in clinical suspicion of tuberculosis but in our patient, it was negative. The analysis of the ascites fluid in peritonitis cell usually shows elevated leukocyte count with predominance of lymphocytes and high protein levels (>2.5 mg/dL). In our patient, the initial analysis of the

ascites fluid was preferable to lymphocytes. Ultrasonography and computed tomography showed an increase in the peritoneal thickness.

In the patient, acid fast and pleural fluid PCR were negative. Pleural tissue biopsy and PCR of pleural tissue were positive for mycobacterium tuberculosis. Peritoneal tuberculosis generally responds to medical treatment. The treatment is similar to pulmonary tuberculosis, starting with Isoniazid, Rifampin, Ethambutol, and Pyrazinamide for two months, and then, continued with two medications (Isoniazid and Rifampin) for 4 months. Surgical intervention is the definitive treatment option in complications such as bowel perforation, bowel obstruction, fistula and abscess. The presented case shows a challenging diagnosis for tuberculosis especially for cases with extra-pulmonary manifestations. If physicians be aware of the uncommon manifestations of tuberculosis, they will be able to accurately diagnose the disease with a combination of microbiological, radiological, and histopathological examinations after clinical suspicion. Therefore, they can prevent the delay in treatment and reduce the morbidity and morbidity in the patients with tuberculosis.

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