

Case Report**Tuberculosis masking T-cell lymphoblastic leukemia****¹Sivakaran T, ¹Sivansuthan S**¹Teaching Hospital, Jaffna**Abstract**

T-cell lymphoblastic leukemia characterized by infiltration of immature T cells mainly in the mediastinum and other lymphoid organs (1). Here we present a case of a forty-five years old female who was presented with tuberculosis pleural effusion but did not respond to treatment and later found to have a T-Cell ALL. Forty-five years old female presented with fever for three weeks with left sided pleural effusion. She was diagnosed to have tuberculous pleural effusion based on positive Mantoux test (12mm induration), lymphocytic exudative pleural effusion and High ADA (80U/L). She was started on anti-tuberculosis treatment but did not respond so she underwent CECT chest and abdomen which showed pleural and pericardial effusion with mediastinal lymphadenopathy. She was further evaluated with a blood picture and bone marrow biopsy which revealed T-cell lymphoblastic leukemia. Tuberculosis can mask the underlying malignancies. In tuberculous pleural effusion if not responded to initial management CT Chest and thoracoscopy with pleural biopsy will help us to diagnose underlying malignancies.

Keywords: Tuberculosis, T-cell lymphoblastic leukemia/lymphoma, Leukemia

Introduction

T-cell lymphoblastic leukemia is characterized by massive infiltration of immature T cells mainly in the mediastinum and other lymphoid organs (1). T-Cell ALL can present with pleural effusion, pericardial effusion, and mediastinal lymphadenopathy which can mimic tuberculosis.

Case

A forty-five-year-old female patient from Vavuniya was transferred from DGH Vavuniya for further management

of unresolving left-sided plural effusion and pericardial effusion. She was diagnosed to have tuberculous pleural effusion six weeks back based on positive Mantoux test (12mm induration), lymphocytic pleural effusion and High ADA (80U/L) while she presented with fever for three weeks duration to DGH Vavuniya. The patient was started on category one anti-tuberculosis treatment. Despite the treatment for six weeks, patient symptoms were not resolved over time she had a fever as well, so she was transferred to Teaching Hospital Jaffna for future management.

She was re-evaluated in our hospital; she had a fever for almost two-month duration along with an insidious onset of shortness of breath also an association. She had a non-productive cough. She had loss of weight and loss of appetite. On examination, she was pale and dyspneic. Her respiratory rate was twenty-four and respiratory examination revealed left sided plural effusion. The pulse rate was 110 good volume, regular and blood pressure was 110/70. Abdominal examination revealed no organomegaly or free fluid.

Full blood count showed leukocytosis (WBC $17.83 \times 10^3/\mu\text{l}$) and blood picture showed leukocytosis with a predominant population of medium size immature cells with high nuclear-cytoplasmic ratio, diffuse chromatin pattern, and indistinct nucleoli. Blood picture findings were suspicious of bone marrow pathology. The ultrasound chest revealed left sided moderate plural effusion and Transthoracic echo cardiogram revealed mild pericardial effusion. The patient has undergone pleural fluid analysis which showed exudative lymphocytic pleural effusion with High ADA (78U/L). Following an initial evaluation, the patient underwent a CECT chest abdomen and pelvis which revealed mediastinal lymphadenopathy.

Corresponding Author: T Sivakaran, Email: m37494@pgim.cmb.ac.lk  <https://orcid.org/0009-0008-8316-5156>, Submitted March 2023, accepted November 2023



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As the overall finding was suggestive of hematological malignancy, she underwent a bone marrow biopsy. Bone marrow biopsy with flowcytometry findings favored the diagnosis of T Cell acute lymphoblastic leukemia.

The patient was transferred to oncology unit for chemotherapy and planned to continue category one anti tuberculosis treatment.

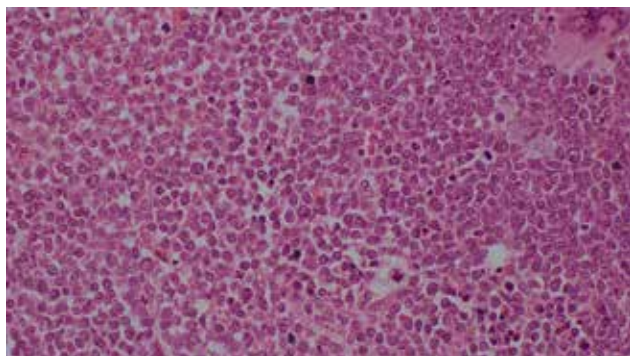


Figure 1 Bone marrow biopsy shows prominent blast cells.

Discussion

T-cell lymphoblastic leukemia is characterized by massive infiltration of immature T cells mainly in the mediastinum and other lymphoid organs (1). T-Cell ALL can present with pleural effusion, pericardial effusion, and mediastinal lymphadenopathy which can mimic tuberculosis. Tuberculous pleural effusion is one of the most common forms of extrapulmonary tuberculosis (2). It can be diagnosed in high prevalence settings with positive Mantoux and High ADA (2). False positive ADA can happen in leukemia but if the level of more than 70U/L favors tuberculous pleurisy (3). Our patient was diagnosed to have tuberculous pleural effusion. Her pleural effusion was not resolved with a treatment. Unresolved infectious pleural effusion to treatment needs a CT scan to exclude the associated malignancies (4). Her CECT Chest abdomen and pelvis revealed mediastinal lymphadenopathy, pleural and pericardial effusion. followed that she has undergone bone marrow with flowcytometry studies which revealed T-cell lymphoblastic leukemia. T-Cell ALL diagnosis was delayed at initial presentation due to co-infection with tuberculosis. Definitive diagnosis of pleural disease can be achieved through thoracoscopy with pleural biopsy

and cytological studies which can help to differentiate tuberculosis and leukemia/ lymphoma (5). which was not attempted in our patient because we came to a diagnosis with a bone marrow biopsy.

Conclusion

Tuberculosis can co-exist with other malignancies and can mask the underlying disorder leading to delayed diagnosis and management. T-cell lymphoblastic leukemia can present like tuberculosis. Co-Infection with tuberculosis is very difficult to distinguish. If tuberculous pleural effusion did not respond to treatment and to rule out the underlying malignancies CT scan of the chest and thoracoscopy with pleural biopsy would help.

Consent

Written consent was obtained from the patient for publication of this study.

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