



"DIAGNOSTIC CHALLENGE OF COEXISTENT TUBERCULAR PLEURAL EFFUSION AND NON-HODGKIN'S LYMPHOMA IN A TUBERCULOSIS-ENDEMIC REGION"

Pulmonary Medicine

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ABSTRACT

Non-Hodgkin's lymphoma is a heterogeneous group of malignancies characterised by an abnormal proliferation of B-cells or T-cells or both. Both environmental and genetic factors have been proposed in its increased incidence in last decade. NHL is divided into approximately 60 subtypes based on morphological, immunophenotypic, genetic and clinical features. We report a rare clinical case of an 18-year-old male presenting with simultaneous Non-Hodgkin's lymphoma (NHL) and tubercular pleural effusion. While both tuberculosis (TB) and NHL are common in India, their coexistence is unusual and diagnostically challenging due to overlapping clinical features. Diagnostic evaluation, including pleural fluid analysis and lymph node biopsy, revealed both tubercular effusion and NHL. The case highlights the importance of maintaining a broad differential diagnosis in TB-endemic regions to ensure timely and accurate management.

KEYWORDS

Non-Hodgkin's lymphoma, Tubercular Pleural effusion, Coexistence, Dual pathology

INTRODUCTION

Non-Hodgkin's lymphoma may be preceded by chronic inflammatory disease and furthermore has been related to immune deficiency. Tuberculosis on the other hand is a chronic infectious disease whose presentation and reactivation is known to be promoted by cell mediated immunodeficiency. (2) Tuberculosis (TB) and Non-Hodgkin's lymphoma (NHL) are significant health concerns worldwide, particularly in TB-endemic regions like India. Both conditions can present with lymphadenopathy and systemic symptoms, leading to potential diagnostic confusion. The coexistence of TB and NHL, though rare, has been reported and demands high clinical suspicion for accurate diagnosis and treatment.

Case Presentation

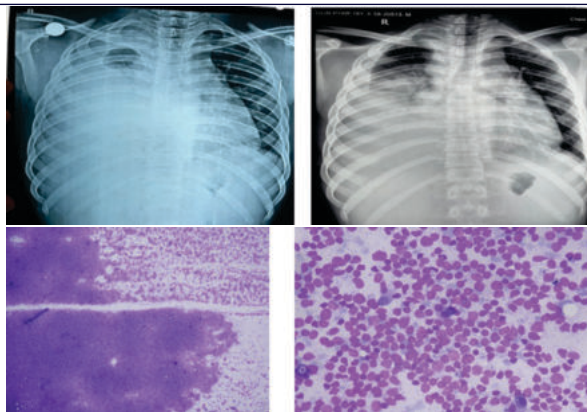
An 18-year-old male presented to the outpatient department with a 10-day history of progressive shortness of breath (MMRC grade 3), and constitutional symptoms such as fever, night sweats, loss of appetite and weight loss since 4 weeks.

There was history of TB contact with mother. General physical examination revealed bilateral cervical lymphadenopathy. Respiratory examination revealed reduced air entry on the right side with no added sounds.

A chest X-ray revealed a moderate to massive right-sided pleural effusion. An ultrasound-guided diagnostic and therapeutic pleurocentesis was done which revealed exudative picture - pleural fluid (ADA-74, LDH-374, glucose-76, protein-4.5 g/dL). Pleural fluid for cytology revealed predominantly lymphocytic predominant with a few mesothelial cells and a proteinaceous background. Complete blood count revealed mild anaemia. RFT and LFT were within normal limits.

Anti-tubercular therapy (ATT) was initiated based on contact history, clinical history and pleural fluid analysis (Lights criteria). Patient showed clinical improvement and radiological clearing initially. However on subsequent follow up, patient showed clinical and radiological deterioration. In order to rule out drug resistance, patient was planned for fine-needle aspiration cytology (FNAC) from the right cervical lymph node.

It revealed monomorphic atypical lymphoid cells. Thus lymph node biopsy was done which showed features characteristic of Non-Hodgkin's lymphoma, including atypical degenerating lymphoid cells with hand mirror morphology and high nucleocytoplasmic ratio. IHC markers were sent and patient was referred to medical oncology department for further treatment and evaluation.



DISCUSSION

Non-Hodgkin's lymphoma in young individuals is uncommon and may be masked by infections such as tuberculosis. Physicians in TB-endemic areas must be vigilant for dual pathology when clinical symptoms are not fully explained by a single disease. Lymphoma is one of several representative diseases presenting with elevated ADA levels among non-TB effusions. In patients with Tubercular pleural effusion, the positive rates of acid fast bacillus smear and cultures using pleural effusion samples are as low as less than 10% and 40% respectively. (3) Nevertheless, it is noteworthy that markedly higher pleural fluid ADA levels (>1000 u/L) was found to be associated with Lymphoma pleural effusion. (4)

The simultaneous occurrence of TB and NHL is rare but clinically significant. Both conditions can mimic each other symptomatically and radiologically. TB may predispose to malignancy due to chronic inflammation and immune dysregulation. Conversely, immunosuppression in NHL can promote TB reactivation. In this case, prompt pleural fluid analysis and lymph node biopsy enabled the detection of both pathologies, allowing for dual management.

This case underscores the necessity of considering coexisting pathologies, especially in endemic regions. A narrow diagnostic focus may lead to delayed treatment of one of the conditions, affecting outcomes.

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