

## Lymphoblastic Lymphoma Masquerading as Tuberculous Pleural Effusion

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**Abstract:** Non-Hodgkin's lymphoma (NHL) presenting as tuberculous pleural effusion is unusual. We present a case of NHL that was misdiagnosed as tuberculous pleural effusion and was managed with Anti-Tuberculosis Treatment (ATT) drugs. A 5-year-old female with a history of dry cough since more than a month, diagnosed as tuberculous pleural effusion and managed on ATT Category 1 drugs, was referred to us by a private independent clinic. Systemic examinations and result of investigations pointed towards the same diagnosis. Steroids were added to the regimen as multiple septa were observed on Ultra Sonography (USG), which helped us in improving the condition of the patient and once stable, she was discharged. Soon, after 7 days she presented with complains of dyspnea and examination and chest radiograph, revealed massive left sided pleural effusion. Thus, it led us to a conclusion that there was something other than tuberculosis, and hence Computed Tomography Scan (CT scan) was advised that showed Lymphomatous involvement of supra-clavicular lymph nodes, excision biopsy was done and its histology and immunochemistry revealed T-cell lymphoblastic lymphoma a rare entity of NHL. A subsequent bone marrow biopsy showed invasion of bone marrow by atypical cells with high N:C ratio. Hence, ATT was stopped and is now managed with radiotherapy. Pleural effusion with Mantoux Test (MT) positive could be misleading as extra-pulmonary tuberculosis, especially for TB endemic setup, but a thorough investigation must be done prior to managing patients on ATT drugs. Further, due to increasing trends in incidence rates of NHL, we recommend a long term study to sort out a symptom cluster of NHL in developing setup.

**Keywords:** Non-Hodgkins Lymphoma, NHL, Pleural effusion, Tuberculosis, ATT.

### INTRODUCTION

Non-Hodgkin's lymphoma (NHL) presenting as tuberculous pleural effusion is unusual. We present a case of NHL that was misdiagnosed as tuberculous pleural effusion and was managed with Anti-Tuberculosis Treatment (ATT) drugs

### CASE REPORT

A 5-year-old Indian girl, having normal weight and height after not responding to Anti Tuberculous Treatment (ATT) Category 1 drugs, as per Revised National Tuberculosis Control Program (RNTCP) guidelines [1] for about 14 days was referred to Pediatrics Department of New Civil Hospital with diagnosis as left sided massive Tuberculous pleural effusion by private independent clinic. From the documents available, it suggested that patient was having dry cough associated with fever for more than one month and Mantoux Test (MT) was positive.

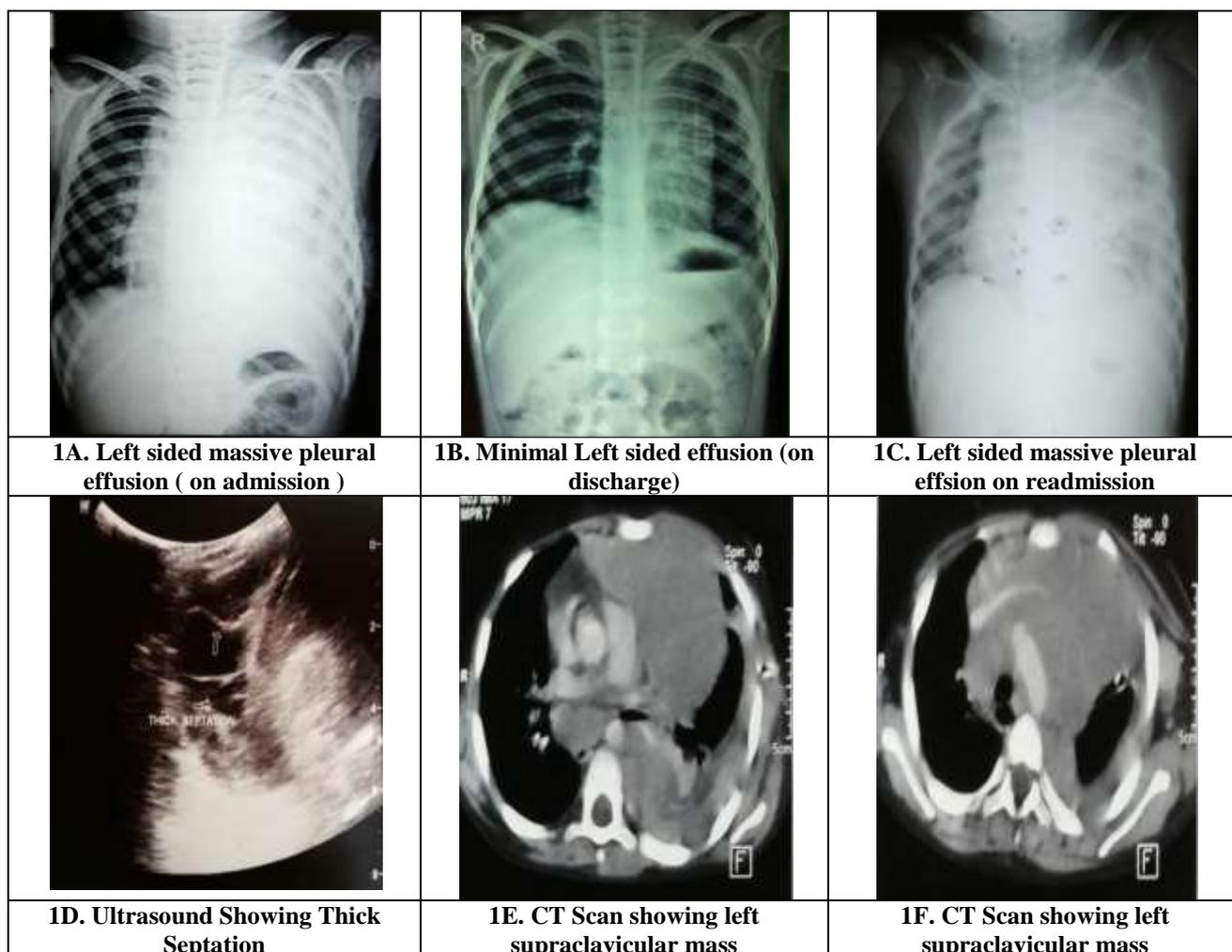
The detailed history and systemic examination of the patient showed left sided pleural effusion, rest all the vitals were normal. Chest Radiograph (Fig. 1A) and USG (Fig. 1D) confirmed the clinical finding and showed left sided massive pleural effusion with multiple septa. Hence, therapeutic pleural tap was done which showed the exudative nature of pleural fluid along with negative AFB and gram stain with 22,000 cells/cu.mm containing 90% lymphocytes and 10% polymorphs, with protein 5 g/dl, with normal glucose levels, with ADA 283 IU/l (Normal Range: <10 IU/l). Hemogram showed leukocytosis (TLC-17,400/cu.mm), ESR- 3 mm/h by Westergreen's method, Neutrophil-83%, Lymphocytes-13%, and Blood Culture was negative. Now, According to Revised National Tuberculosis Control Program (RNTCP) [1], Tuberculous Pleural Effusion accounts for about 21.9% of extra pulmonary tuberculosis. If chest radiograph is

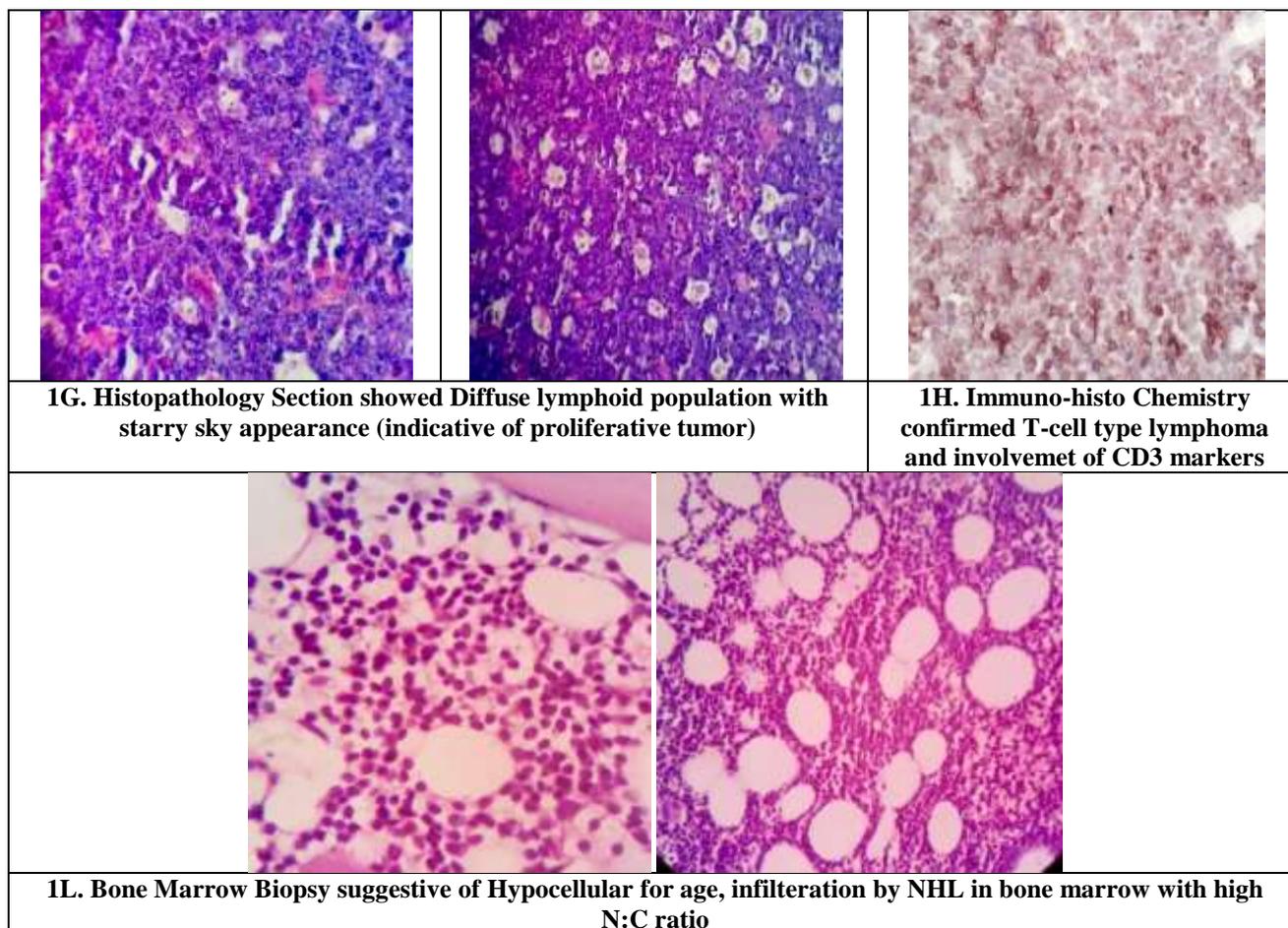
suggestive of pleural effusion, pleural aspiration should always be performed for biochemical, cytological and smear examination by ZN stain to confirm the diagnosis. TB pleural effusion has large numbers of cells (in hundreds; predominantly mononuclear), with high proteins (>3g/dL). Adenosine Deaminase (ADA) levels over 60 IU/L may be suggestive of tuberculous pleural effusion. Since, the above results were in favor of tuberculous pleural effusion and keeping in mind that it takes at-least one month for ATT category 1 drugs to have its effect, the same management was continued along with oral prednisolone (2 mg/kg/day), which was added as multiple septa along with massive pleural effusion was seen on USG. Patient responded well to the management, vitals were normal and follow-up Chest Radiograph (Fig. 1B) and USG showed mild amount of free fluid in Left CP angle and hence she was discharged with same medication.

After 8 days of discharge, patient again consulted us with the chief complain of breathlessness

since 2 days. On evaluation, Chest Radiograph (Fig. 1C) and USG showed Left sided massive pleural effusion. Pleural tap showed negative AFB and gram stain with 0 cells/cu.mm., protein 0.2 g/dl, with normal sugar, and with ADA 1 IU/l (Normal Range: <10 IU/l). As, patient was not improving to ATT Category 1 with steroids, further evaluation was done with CT scan (Plain and Contrast) of Thorax (Fig. 1E, 1F) and the result of which showed lymphomatous involvement of left supraclavicular lymph node and hence excision was done and its Histopathology (Fig. 1G) and Immunochemistry (Fig. 1H) were performed that suggested Lymphoblastic Lymphoma that is Non Hodgkin's Lymphoma. Further, the bone marrow biopsy (Fig. 1I) showed infiltration of atypical cells (lymphomatous) with very high N:C ratio.

At present, the patient is stable and managed with Radiotherapy.





**Fig. 1: Serial Investigations advised that lead to the diagnosis of Lymphoblastic Lymphoma**

## DISCUSSION

Non-Hodgkin's Lymphomas are a very diverse group of neoplasm that are more common in males than in females; it comprises of lymphosarcoma, reticulosarcoma, burkitt's lymphoma and other neoplasms involving lymphoid tissue. Further, it is most common in developed countries, but rising incidence rates have been noted in developing setups too, which may in part reflect improving diagnostic setup. On this background, in this paper an attempt to document the case of Non Hodgkin's lymphoma that resembled a case of tuberculos pleural effusion, has been made.

Non-Hodgkin's Lymphomas has made its mark from a rare cancer to the fifth most common cancer (incidence of 19.1 per 100,000 in USA) in the world. Even in India the incidence increasing with the current figure standing at 5.1 per 100,000 in urban registries, while no data from rural set-ups are available [2].

The age-adjusted incidence of NHL in Mumbai is 4.8 per 100,000 men and 2.9 per 100,000 women. Lymphocytic lymphoma, mantle-cell lymphoma, and marginal zone B-cell lymphomas (including MALT lymphomas) amounted to 12.6%,

5.7%, 3.4%, and 8.2%, respectively. Amongst the T-cell lymphomas, T-cell lymphoblastic lymphoma, anaplastic large-cell lymphomas of T/null-cell type, and other nodal peripheral T-cell lymphomas accounts for 6%, 4.3%, and 2.9% of all cases, respectively. The distribution of NHL subtypes in India shows important differences with those from the rest of the world. T-cell lymphoblastic lymphoma and anaplastic large T/null cell lymphoma are more prevalent in India [3].

Symptom cluster of NHL [4] includes, none of which was observed in the patient: mouth sores, dry mouth, shortness of breath, dizziness, difficulty in swallowing, difficulty in sleeping, constipation, weight loss, sweats, nausea, vomiting, lack of appetite, diarrhea, feeling bloated, cough, feeling sad, difficulty concentrating, changes in the skin, feeling irritable, feeling nervous, worrying, hair loss, paraesthesia and lack of energy; unfortunately apart from cough, no other symptom could be identified in the current study. Thus, we recommend long-term study focusing on the symptom cluster of NHL patients in India.

Secondly, it could be misleading as for a TB endemic set-up; it is by default that all the cases of

pleural effusion are to be managed as extra-pulmonary tuberculosis unless otherwise proved. The causes of exudative pleural effusion according to their incidences could be Tuberculosis, Bacterial infection, Parasitic Infection, Viral Infection, Secondary Malignancy, Mesothelioma, Collagen Vascular Diseases, Pulmonary Infarction, Gastrointestinal diseases like Pancreatic diseases, intra abdominal abscess, esophageal perforation; Post-cardiac injury syndrome, Asbestos exposure and others. [1].

#### **CONCLUSION**

Pleural effusion with Mantoux Test (MT) positive could be misleading as extra-pulmonary tuberculosis, especially for TB endemic setup, hence if patient is not improving on ATT, alternate diagnosis must be ruled out before considering that as Non-Responding or Drug Resistant case.

Further, due to increasing trends in incidence rates of NHL in developing setup, we recommend a long-term study to sort out a symptom cluster of NHL in India, along with the pattern.

#### **REFERENCES**

1. New Pediatrics Guidelines; Revised National Tuberculosis Control Program. 2014
2. Vallabhajosyula S, Baijal G, Vadhira BM, Fernandes DJ, Vidyasagar MS; Non-Hodgkin's lymphoma: Is India ready to incorporate recent advances in day to day practice? *J Cancer Res Ther.*, 2010; 6(1): 36-40.
3. Naresh KN, Srinivas V, Soman CS; Distribution of various subtypes of non-Hodgkin's lymphoma in India: A study of 2773 lymphomas using R.E.A.L. and WHO Classifications. *Annals of Oncolog*, 2000; 11(Suppl. 1): 63-67.
4. Bolukbas F, Kutluturkan S; Symptoms and symptom clusters in Non Hodgkin's lymphoma patients in Turkey. *Asian Pac J Cancer Prev.*, 2014; 15(17): 7153-7158.