# T-Lymphoblastic Lymphoma concomitant with Cervical Lymph Node TB: A case report

**Muhammad Kashif Munir, Sana Rehman, Asif Hanif, Rizwan Iqbal**

PHRC TB Research Centre King Edward Medical University, Mayo Hospital, Lahore Lahore-Pakistan

**Address for correspondence**
**Muhammad Kashif Munir**
PHRC TB Research Centre King Edward Medical University, Mayo Hospital, Lahore-Pakistan

Email:
munir_gemini81@yahoo.com

Date Received: May 01, 2019
Date Accepted: May 25, 2019

**Declaration of conflicting interests:**

The Authors declares that there is no conflict of interest.

**Abstract**

**Background:** Concomitant occurrence of lymph node TB with any kind of lymphoma is scarce and challenging clinical manifestation for clinician to recognize and manage. T-lymphoblastic lymphoma is melanoma of underdeveloped precursors of T-cells to known as lymphoblasts. Cervical lymph node TB on the other hand is merely dependent on histopathology/cytology characterized by presence of granulomatous inflammation suggestive of TB and being used as primary tool to start anti tuberculosis treatment since long. Purpose of this report is to present a case of lymph node TB who showed chronic tonsillitis on starting the anti-tuberculosis treatment and diagnosed to be T-lymphoblastic lymphoma far later and lead to demise. Main pit-fall in this specific case remained the delayed diagnosis of lymphoma due to systemic issues and slow response of ATT in even in general TB cases. Further occurrence of acute tonsillitis with aggression of cervical lymph nodes engaged the physician on other complications. All these factors create a lot of panic to the patient and resulted in almost diminished immunity. Patient lost resistance to fight with disease as well as with chemotherapy doses and passed away in young age. Vigilance of physician in rare etiologies is necessary to handle with such difficult and serious cases to avoid precious life losses.

**Key words:** Cervical Lymph Node; Lymphoma; Tonsillitis; Extra-pulmonary TB

This case report may be cited as: Munir MK, Rehman S, Hanif A, Rizwan Iqbal. T-lymphoblastic lymphoma concomitant with cervical lymph node TB: A case report. Pak J Chest Med 2019; 25 (2):83-86

## Introduction

Tuberculosis (TB) is notorious but common, lethal infectious disease occurs due to Mycobacterium tuberculosis (MTB) and a major health delinquent in developing and developed countries.[1] Mainly TB involves the lungs but can invade in each and every tissue of human body therefore called pulmonary and extra-pulmonary TB respectively. World Health Organization (WHO) has estimated 10 million new active TB cases during 2017 comprising 3.2 million females, 5.8 million males and 1 million children. Moreover, Pakistan ranked 5th highest Tb burden country and comprises 5% TB cases all alone among total TB cases in the world.[2]

An overall prevalence of extra-pulmonary TB is 14% globally however varies from region to region and highest of 24% in eastern Mediterranean region as Pakistan belongs to this region.[2] Lymph node TB is the most common form of all extra-pulmonary in Pakistan.[3] Granulamatous inflammation around neck and head is concomitant with many idiopathic, neoplastic, fungal immune and infectious ailments.[4] Granuloma is composed of chronic inflammation initiated by accumulation of circulating monocytes as an immune response. This granulomatous reaction can be observed under microscope by means of histological preparations and observed as transformed macrophages hedged by monocytes and giant cell formation occurs by fusion later.[4]

Concomitant occurrence of lymph node TB with any kind of lymphoma is scarce and challenging clinical manifestation for clinician to recognize and manage due to parallel clinical demonstration.[5] T-lymphoblastic lymphoma is melanoma of underdeveloped precursors of T-cells to known as lymphoblasts.[6] T-lymphoblastic lymphoma is less common comprising 15% among children and 25% among all adults as compared to rest of B-lymphoblastic lymphoma.[7] T-

cell lymphoma is recognized by multiplication of lympho-blasts with a wide range of cytological characteristics. The diagnosis is further dependent on existence of variety of T-cell markers which are detected by immune-histopathological techniques.[7] Cervical lymph node TB on the other hand is merely dependent on histopathology/ cytology characterized by presence of granulomatous inflammation suggestive of TB and being used as primary tool to start anti tuberculosis treatment since long.[8] Purpose of this report is to present a case of lymph node TB who showed chronic tonsillitis on starting the anti-tuberculosis treatment and diagnosed to be T-lymphoblastic lymphoma far later and lead to demise.

## Case Report

A 21 year unmarried female patient was presented with small cervical lymph nodes suspicious of TB in department of pulmonology King Edward Medical University Lahore. Physician advised her to test for lymph node biopsy. History of fever, fatigue, cough, post nasal drip and retrosternal burning were absent. History of contact was established as her grandparents had pulmonary TB in the past and one of her cousin had lymph node TB and treated successfully few years back. General physiological examination revealed symptoms of anemia with presence of multiple bilateral lymph nodes around cervix which were tender, matted and firm however no any other systemic anomaly was observed. Patients was referred for examination of oral cavity that showed bilateral mild enlargement of tonsils and edema around pharyngeal wall but no ulcer or bleeding spots were observed. Further patient was advised to have hemogram, erythrocyte sedimentation rate (ESR), chest x-ray, lymph node biopsy and biochemical tests.

Hemoglobin was found to be low as 9.5g/dl while rest of hemogram was normal, ESR was 59 in 1$^{st}$ hour, chest x-ray and biochemical tests were also normal while histological examination of biopsy revealed necrotizing granulomatous inflammation suggestive of TB. On the basis of all findings the patient was put on anti TB treatment (ATT) by senior physician. A series of unusual events started when patient showed severe skin allergic reaction on 12$^{th}$ day from start of ATT. Patient was asked to stop the ATT and all four drugs i.e. rifampicin, isoniazid, pyrazinamide and ethambutol were tested one by one on trial basis but no any skin reaction was observed hence standard course of ATT was started again.

Cervical lymph nodes became aggressive with severe tonsillitis as shown in figure 1 and patient had to attend emergency due to difficulty in breathing after that resonance in speaking was also started. Patients was again referred for examination of oral cavity ask for the suggestions to remove tonsils. However, surgeon observed bilateral heavy enlargement of tonsils and edema around pharyngeal wall with great vascularization hence refused the surgery. Therefore, physician added steroids with ATT and further observed on and off decrease/increase in size of nodes which kept the physician confused for a long time though treatment could not reveal appreciable results.

At the end patient was sent for repeated biopsy but hemoglobin of the patient was dropped to 5.8g/dl and biopsy could not have performed for further 4 days meanwhile hemoglobin was built up to 10g/dl by transfusion. Repeated biopsy revealed T-lymphoblastic lymphoma with positive for CD3, CD5, CD34 and TdT markers on immune/histochemical stains. Patient was sent to oncologist and continued with ATT and chemotherapy of patient was started after number of other confirmatory tests. Patient responded to chemotherapy well and swelling around the neck was greatly decreased until fourth course of chemotherapy. After fourth course patient was again complained difficulty in breathing which became severe with passage of time. Patient was shifted to intensive care unit (ICU) where doctors diagnosed severe pulmonary embolism and patient was demised after the misery of few more hours in ICU.

Patient was always confident and bright about being well. She never lost hope till last day but could not survive long and gone away from our hands like sand. Attendants on the other hand were totally dependent on physicians and always believe in team involved in the treatment

## Discussion

Cervical lymph node is most common clinical manifestation in TB outpatient and a reason of comprehension for patient as well as physician. As TB is primary discrepancy associated with cervical lymph node enlargement in high burden and developing countries therefore get attention for differential diagnosis.[9] Excision biopsy with histopathology is recommended for prompt diagnosis and treatment of lymph node TB10 as is done with this case. There are multiple causes of lymphadenopathy broadly classified in five groups in the literature as follows.[10,11]

- Infection: TB, Infectious mononucleosis, streptococcal infection, measles and pediculosis etc.
- Malignancy: acute lymphoblastic lymphoma, metastasis and pro-myelocytic leukemia.
- Autoimmune: Serum sickness, rheumatoid arthritis etc.
- Drugs Reaction: Atenolol, phenytoin and penicillins etc.
- Miscellaneous: Histocytosis, cystic fibrosis, sarcoidosis and hypothyroidism etc.

Diagnosis of cervical lymph node is compromised with suspicious of number of causes and absence of early and accurate diagnostic technique. Initially it is necessary to rule out TB before thinking any other etiology in counties like Pakistan. Although smear for acid fast bacilli is fast tool but lack sensitivity, similarly gold standard culture takes long time and histopathology suggestive of TB has batter sensitivity as shown in a previous study from similar settings which revealed sensitivities of all three methods as 16.7%, 89.7% and 93.6% respectively.[3] All the parameters were followed accordingly in this case also where histopathology report stated "Necrotizing granulomatous inflammation consistent with tuberculosis". Further report noted "Negative for Zeihl Neelsen staining does not rule out mycobacterial infection which is morphologically favored, Clinical correlation is recommended".

There are almost all clinical indications overlap in both cervical lymph node TB and lymphoma however studies have left few clues to differentiate lymphoma from TB which include age of patient age of patient between 40-50 years, no history of TB contact, indecisive findings in repeated fine needle aspiration cytology (FNAC), normal tuberculin skin test, worsening of lymph node after starting ATT.[12,13] On the other hand age of present case was only 21 years, she had history of TB contact however, FNAC and tuberculin skin test were not performed moreover regression in cervical lymph nodes occurred after starting ATT. On the other hand, cervical lymph nodes regression is considered obvious within 2-4 months after starting ATT even in case of susceptible TB.[14]

A study reported TB endemic and poor resource countries usually find TB on the basis of clinical and cytological indications and correctly advise ATT in the beginning which primarily shows improvement but results in failure due to mimics of other etiologies with TB. Histopathological and microbiological investigations are necessary although the patients with cervical lymph node rarely present other etiologies.[9] All these protocols were followed and patient was diagnosed as T-lymphoblastic lymphoma in second histopathology report but it was too late.

Main pit-fall in this specific case remained the delayed diagnosis of lymphoma due to systemic issues and slow response of ATT in even in general TB cases. Further occurrence of acute tonsillitis with aggression of cervical lymph nodes engaged the physician on other complications. All these factors create a lot of panic to the patient and resulted in almost diminished immunity. Patient lost resistance to fight with disease as well as with chemotherapy doses and passed away in young age. Vigilance of physician in rare etiologies is necessary to handle with such difficult and serious cases to avoid precious life losses.

## References

1. Deveci HS, Kule M, Kule ZA, Habesoglu TE. Diagnostic challenges in cervical tuberculous

lymphadenitis: A review. North Clin Istanb. 2016;3(2):150-55.

2. World Health Organization. Global tuberculosis report 2018. [updated 18 September 2018; Cited 15 February 2019] available from website: [https://apps.who.int/iris/bitstream/handle/10665/274453/9789241565646-eng.pdf].
3. Rahman M, Shahid SA, Ahmad S, Imran M. Role of fine needle aspiration cytology and histopathology in diagnosis of cervical lymph node tuberculosis. IOSR-JDMS. 2017;16(2):82-5.
4. Granulomatous disease od head and neck. [Updated 2018, cited 2018] Available from: [https://emedicine.medscape.com/article/854739-overview]
5. Reddy RC, Mathew M, Parameswaran A, Narasimhan R. A case of concomitant Hodgkin's lymphoma with tuberculosis. Lung India. 2014;31(1):59-62.
6. You MJ, Medeiros LJ, Hsi ED. T-lymphoblastic leukemia/lymphoma. Am J Clin Pathol. 2015;144(3):411-22.
7. Onciu M. Acute lymphoblastic leukemia. Hematol Oncol Clin North Am. 2009;23(4):655-74.
8. Rahman M, Shahid SA, Ahmad S, Sarwar MI, Munir MK, Rehman S, Riaz I. Role of Fine Needle Aspiration Cytology And Histopathology in Diagnosis of Cervical Lymph Node Tuberculosis. IOSR-JDMS. 2017;16(2):82-5.
9. Pandit S, Choudhury S, Das A, Das SK, Bhattacharya S. Cervical lymphadenopathy—pitfalls of blind antitubercular treatment. J Health Popul Nutr. 2014;32(1):155-9.
10. Thakkar K, Ghaisas SM, Singh M. Lymphadenopathy: Differentiation between tuberculosis and other non-tuberculosis causes like follicular lymphoma. Front Public Health. 2016;4:31. PMC4766275.
11. Ferrer R. Lymphadenopathy: differential diagnosis and evaluation. Am Fam Physician. 1998;58(6):1313-20.
12. Raviglione MC, O'Brien RJ. 18th ed. In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, editors., editors. Tuberculosis. In: Lymph Node TB (Tuberculous Lymphadenitis). New York: The McGraw-Hill Companies; 2012. [Google Scholar]
13. Longo D. 18th ed In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, editors. editors. Malignancies of lymphoid cells. In: Follicular Lymphoma. New York: The McGraw-Hill Companies; 2012. [Google Scholar]
14. Kandala V, Kalagani Y, Kondapalli NR, Kandala M. Directly observed treatment short course in immunocompetent patients of tuberculous cervical lymphadenopathy treated in revised national tuberculosis control programme. Lung India. 2012;29(2):109-13.