*ejpmr, 2024, 11(2), 547-549*

**SJIF Impact Factor 6.222**

**EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH**

www.ejpmr.com

Case Study

ISSN 2394-3211

EJPMR

# PRIMARY MULTIDRUG RESISTANCE TUBERCULOSIS OF LYMPH NODES IN PAEDIATRIC PATIENT

**Dr. Arjun Sharma*[1], Dr. Daljit Singh[2], Dr. Shagun and Dr. Shaheed Arman Khondekar[1]**

[1]Junior Resident, Department of Pulmonary Medicine, Govt. Medical College, Amritsar.
[2]Associate Professor, Department of Pulmonary Medicine, Govt. Medical College, Amritsar.

***Corresponding Author: Dr. Arjun Sharma**

Junior Resident, Department of Pulmonary Medicine, Govt. Medical College, Amritsar.

**Article Received on 25/12/2023** **Article Revised on 15/01/2024** **Article Accepted on 05/02/2024**

## ABSTRACT

Tuberculous lymphadenitis stands out as one of the most common forms of extrapulmonary tuberculosis (TB), constituting 35% of extrapulmonary TB cases. This condition is recognized as the localized expression of a systemic disease, emphasizing its representation in the broader context of tuberculosis. Mycobacterium tuberculosis typically enters the body through the respiratory tract and then disseminates via the bloodstream and lymphatic system. The initial lymphoid tissues encountered during the lymphatic spread from the lung parenchyma are the hilar and mediastinal lymph nodes. It may also spread to Cervical lymph nodes often presenting as painless, firm, and progressively enlarging lymph nodes in the neck. This case report delves into the rare occurrence of primary multidrug-resistant tuberculosis (MDR-TB) manifesting in the lymph nodes of pediatric patients. Highlighting a unique clinical presentation, diagnostic challenges, and treatment strategies, the study aims to contribute valuable insights into managing this formidable form of TB in the paediatric population. Through a comprehensive analysis of the case, we underscore the importance of early detection and tailored therapeutic interventions to improve outcomes in primary MDR-TB cases affecting lymph nodes in children.

**KEYWORDS:** Cervical lymph nodes, MDR-TB, Paediatric.

## INTRODUCTION

Cervical lymphadenitis is the most common head and neck manifestation of mycobacterial infections. The incidence of mycobacterial cervical lymphadenitis has increased. It may be the manifestation of a systemic tuberculous disease or a unique clinical entity localized to neck.[1]

It remains both diagnostic and therapeutic challenge because it mimics other pathologic processes and yields inconsistent physical and laboratory findings. Diagnosis is difficult often requiring biopsy. A thorough history and physical examination, staining for acid-fast bacilli, fine-needle aspiration and PCR are helpful in obtaining an early diagnosis.[2]

Histological examination (caseating epitheloid cell granulomas and giant cell formation) and microbiological examination (Ziehl-Neelsen staining and culture of native material) should be performed. Newer methods, such as amplification and detection of mycobacterial DNA, are rapid and sensitive tests helpful for diagnosis.[3]

Cartridge based nucleic acid amplification test (CB-NAAT, GeneXpert,) is an automated cartridge-based molecular technique which not only detects Mycobacterium Tuberculosis but also rifampicin resistance within two hours and has been endorsed by WHO as an initial diagnostic test in children suspected of having tuberculosis both in pulmonary and specific forms of extra pulmonary tuberculosis.[4]

## CASE REPORT

A 6 month old male presented with low grade fever since 3 weeks with post-auricular swelling at right side since 3 months gradually increasing in size, the swelling was firm, mobile, and tender measuring 3X4 cm, overlying skin is red and warm to touch, another swelling present below right ear. Initially pus like discharge was also seen below the right ear. FNAC smears from the right post-auricular swelling are cellular and show sheets of viable and degenerated polymorphs, lymphocytes and macrophages along with epithelioid cell granulomas in a necrotic background. ZN stain for AFB is negative. Diagnosis of Necrotizing granulomatous inflammation was made on FNAC. Microscopic examination of aspirated pus from the swelling shows the presence of epithelioid cell granuloma with presence of

inflammatory cells comprising of lymphocytes, neutrophils, few plasma cells along with few degenerated cells. Background shows presence of necrosis along with giant cells, no atypical cells in the smear examined. Appearances are suggestive of necrotizing granulomatous pathology likely to be tuberculosis. CBNAAT (GeneXpert) was done on FNAC sample on which Mycobacterium Tuberculosis with rifampicin resistance was detected. Patient's mother currently on treatment for MDR pulmonary tuberculosis. Patient was started on all oral longer MDR TB Regimen consisting of levofloxacin, linezolid, clofazimine, cycloserine with pyridoxine supplementation.

## DISCUSSION

Tubercular lymphadenitis (TBLN) remains the most frequent manifestation for extrapulmonary TB despite advancements in diagnostics and management over the years.[5]

Tubercular adenitis occurs in all age groups with equal frequency. It can occur in vaccinated children also. It may be a sole manifestation of tubercular infection. The cervical nodes are predominantly involved. There is no typical location of nodes in individual groups but multiplicity and matting of nodes are characteristic features of tubercular adenitis in children.[6]

Tuberculous lymphadenitis remains one of important targets for the differential diagnosis of lymphadenopathy. It is essential that a peripheral lymph node biopsy be performed and examined either histologically and/or microbiologically.[7]

There are two specific pathologic criteria for identifying tuberculosis lymphadenitis, caseation and granuloma formation. Caseation has been found to be more specific and sensitive.[8]

The role of Cartridge based Nucleic Acid Amplification test (CBNAAT) in the diagnosis of lymphnode TB which helps in reducing the mortality and morbidity by early identification and initiating treatment at the earliest. Also helps in identify the drug resistance among tubercular lymphnodes cases.[9]

Grouping of anti-TB drugs and steps for designing longer MDR-TB regimen
Group A- Include all three medicines
Levofloxacin Lfx or Moxifloxacin Mfx
Bedaquiline Bdq
Linezolid Lzd
Group B- Add one or both medicines
Clofazimine Cfz
Cycloserine Cs
Terizidone Trd
Group C- Add to complete the regimen and when medicines from Group A and B cannot be used
Ethambutol E
Delamanid Dlm
Pyrazinamide Z
Imipenem-cilastatin or Ipm-Cln
Meropenem Mpm
Amikacin Am (OR Streptomycin S)
Ethionamide Eto or
Prothionamide Pto
p-aminosalicylic acid PAS.[10]

## REFERENCES


1. Bayazit YA, Bayazit N, Namiduru M. Mycobacterial cervical lymphadenitis. ORL J Otorhinolaryngol Relat Spec, 2004; 66(5): 275-80. Doi: 10.1159/000081125. PMID: 15583442.
2. Mohapatra PR, Janmeja AK. Tuberculous lymphadenitis. J Assoc Physicians India, Aug., 2009; 57: 585-90. PMID: 20209720.
3. Canova CR, Kuhn M, Reinhart WH. Probleme bei der Diagnose und Therapie der Lymphknoten-tuberkulose bei HIV-negativen Patienten [Problems in the diagnosis and therapy of lymph node tuberculosis in HIV-negative patients]. Schweiz Med Wochenschr, Dec. 26, 1995; 125(51-52): 2511-7. German. PMID: 8571104.
4. Sahana KS, Prabhu AS, Saldanha PR. Usage of Cartridge Based Nucleic Acid Amplification Test (CB-NAAT/GeneXpert) test as diagnostic modality for pediatric tuberculosis; case series from Mangalore, South India. J Clin Tuberc Other Mycobact Dis., 2017 Dec 6; 11: 7-9. Doi: 10.1016/j.jctube.2017.12.002. Erratum in: J Clin Tuberc Other Mycobact Dis., Sep. 09, 2020; 21: 100177. PMID: 31720384; PMCID: PMC6830183.
5. Gupta A, Kunder S, Hazra D, Shenoy VP, Chawla K. Tubercular lymphadenitis in the 21st century: A 5-Year single-center retrospective study from South India. Int J Mycobacteriol, Apr-Jun, 2021; 10(2): 162-165. Doi: 10.4103/ijmy.ijmy_66_21. PMID: 34558468.
6. Seth V, Kabra SK, Jain Y, Semwal OP, Mukhopadhyaya S, Jensen RL. Tubercular lymphadenitis: clinical manifestations. Indian J Pediatr, Sep-Oct, 1995; 62(5): 565-70. Doi: 10.1007/BF02761878. PMID: 10829923.
7. Ueda T, Murayama T, Hasegawa Y, Bando K. [Tuberculous lymphadenitis: a clinical study of 23 cases]. Kekkaku, May. 2004; 79(5): 349-54. Japanese. PMID: 15211875.
8. Finfer M, Perchick A, Burstein DE. Fine needle aspiration biopsy diagnosis of tuberculous lymphadenitis in patients with and without the acquired immune deficiency syndrome. Acta Cytol, May-Jun, 1991; 35(3): 325-32. PMID: 1904179.
9. Chandrappa N, Rastogi A, Bhatnagar AK. Cartridge based nucleic acid amplification test is superior in diagnosing lymphnode tuberculosis. Indian J Tuberc, Jul, 2019; 66(3): 402-406. Doi: 10.1016/j.ijtb.2018.04.001. Epub 2018 May 17. PMID: 31439187.
10. WHO. WHO Consolidated Guidelines on Tuberculosis: Module 4 – Treatment [Internet].

2020.
(https://www.who.int/publications/i/item/9789240007048. Accessed on 16 March 2021)