



EPIDEMIOLOGY OF TUBERCULOUS CERVICAL LYMPHADENOPATHY IN A TERTIARY CARE HOSPITAL OF NORTHERN GUJARAT

Pulmonary Medicine

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ABSTRACT

Background – Tuberculosis is quite common in developing countries like India. Tuberculous lymphadenopathy is the most common extra-pulmonary manifestation which frequently involves cervical lymph nodes. **Objective** – To study the epidemiology of tuberculous cervical lymphadenopathy in tertiary care hospital of northern Gujarat. **Material Methods**- This hospital based prospective study was conducted on 91 confirmed patients of tuberculous cervical lymphadenopathy to determine the distribution of patients on the basis of age group, sex, income group, size of lymph node on initial presentation and history of contact with confirmed cases of tuberculosis. **Results** – The most common age group to be affected was 15-29 years. 48 cases were females and 43 cases were males. 63 patients were from low income group and 57 patients presented with initial lymph node size of 1-2cm. 72 cases had definite history of contact with tuberculosis patients. **Conclusion**- In this study we found out that the tuberculous cervical lymphadenopathy was more common in young adults. Females were affected more commonly than males. Majority of the patients under study belonged to lower income group. The size of lymph node was 1-2cm in majority of patients upon presentation. History of contact with confirmed case of TB was quite common in these patients.

KEYWORDS

Tuberculosis, cervical lymphadenopathy, epidemiology

INTRODUCTION

Tuberculosis (TB) is a communicable disease which leads to ill health and is a major cause of death in India and worldwide¹. According to WHO Global TB report 2022 the incidence of TB in India was 21.4 lakh in the year 2021¹. India is included amongst the high TB burden countries by WHO¹. Tuberculosis may present with pulmonary as well as extra-pulmonary manifestations². Extra-pulmonary TB accounts for 15-20% cases of TB². Extra-pulmonary TB occurs frequently in patients with HIV infection having CD4 counts <300cells/μl (usually below 100 cells/μl)⁷. Lymph node tuberculosis is the most common type of extra-pulmonary TB in India³. Amongst them, cervical lymph nodes are most frequently involved³. Tuberculous cervical lymphadenopathy (TCL) may present as unilateral single or multiple painless mass in the neck or cervical region⁴. Other symptoms like fever, night sweats, weakness, cough and loss of appetite could also be seen in patients of tuberculous lymphadenopathy. The other causes of cervical lymphadenopathy include viral infection, metastasis from other primary sites, non-specific lymphadenitis, lymphoma, collagen vascular disorder, sarcoidosis etc⁴. Thus correct diagnosis of the cause of cervical lymphadenopathy is very important as their treatment protocols are different. A complete history with clinical examination, staining for acid fast bacilli, ultrasonography (USG), fine needle cytology, biopsy and CBNAAT may be required for obtaining early diagnosis⁵. The gold-standard investigation for the diagnosis of a cervical lymphadenopathy is open biopsy with histopathological examination of the removed tissue. Fine-needle aspiration cytology is being used as a first line of investigation in the diagnosis of head and neck swellings, as it is simple, economical and less invasive as compared to biopsy⁶. When FNAC is unsuccessful or sufficient information cannot be obtained from FNAC, open biopsy may be done⁷.

MATERIAL AND METHODS

This hospital based prospective and observational study was conducted in the Department of Chest and TB, GMERS Medical College and hospital, Himatnagar for a period of 2 years from March 2021 to March 2023.

Selection Of Cases – All confirmed cases of tuberculous cervical lymphadenopathy attending the Out Patient Department (OPD) of Department of Pulmonary Medicine, GMERS Medical college and hospital fulfilling the inclusion and exclusion criteria were selected

The patients were divided into 3 groups based on their monthly income for determination of socioeconomic status

Low income group- <Rs3000/month Middle income group-Rs3000-6000/month Higher income group - >Rs6000/month

Inclusion Criteria

Patients presenting with cervical lymphadenopathy and positive for TB on FNAC/CBNAAT/Biopsy irrespective of age, sex, caste, religion, socioeconomic status, size of lymph nodes were included in the study

Exclusion Criteria

1. Swelling proven to be other than lymph node (eg. Thyroid, salivary gland) on clinical examination
2. Patients with cervical lymphadenopathy but FNAC/ CBNAAT/ Biopsy negative for tuberculosis
3. Patients with diagnosed primary malignancy
4. Patients with clinical features of suspected malignancy like ulcer of growth in head and neck region
5. Pregnant women

METHODOLOGY

The patients who presented to the OPD with cervical lymphadenopathy were subjected to detailed history taking and clinical examination. The patients were given initial conservative management with antibiotics (Tab. Amoxicillin 500mg + Clavulanic acid 125mg thrice daily for 5 days) and were followed up after 2 weeks. Those cases in which the swelling resolved were excluded from the study. The cases in which swelling persisted were made to undergo FNAC and USG of the lymph node. If result was inconclusive on FNAC, CBNAAT and/or Biopsy and histopathological examination of the lymph node was done. Few other investigations like Chest X-Ray, Sputum for AFB and ESR were also advised. Diagnosis of TB was confirmed if pus/aspirate from node showed ZN stain positive for AFB and/or granulomatous changes with caseating necrosis. If FNAC report was inconclusive, excision biopsy with HPE was advised for confirmation. Patients diagnosed with cervical lymph node TB were prescribed Anti-Tubercular Treatment (ATT) regimen as per the NTEP guidelines.

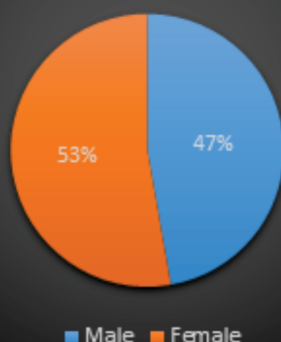
RESULTS

The study was conducted on 91 patients who presented to the OPD with cervical lymphadenopathy and were confirmed to be of tuberculous etiology. We studied the distribution of tuberculous cervical lymphadenopathy based on age, sex, size of lymph node and socioeconomic status.

According to table 1, 15-29 was the most common age group affected with TCL, followed by 30-44, 0-14, 45-59, ≥60.

Table 1- Distribution Of Patients Based On Their Age Group

Age group(Years)	No. of patients(%)
0-14	14(15.38%)
15-29	41(45.05%)
30-44	20(21.97%)
45-59	9(9.89%)
≥60	7(7.69%)

Figure 1- Distribution of patients based on gender

According to figure 1, 43 cases were male(47.25%) and 48 cases were female(52.75%), thus females were more commonly affected with TCL than males.

The most common size of cervical node on initial presentation was 1-2cm(57,62.63%) followed by 2-3cm(22,24.17%) and >3cm(12,13.18%)

Majority of the patients were from low income group(63,69.23%), followed by middle income group(18,19.78%) and higher income group(10,10.98%)

The history of contact with TB patients was found in 72 cases(79.12%) whereas in 19 cases(20.87%) there was no such definite history.

DISCUSSION

Tuberculosis is a potentially serious public health problem worldwide. It is more common in developing countries like India. With improvement in socioeconomic conditions and the effective use of various government programmes, there has been decline in the incidence of pulmonary tuberculosis in India. According to the WHO global TB report 2022, India's TB incidence for the year 2021 was 210 per 100000 population. When compared to the baseline data from 2015 (Incidence was 256 per 100000 population), there has been 18% decline in the incidence of tuberculosis. But with the advent of immunodeficiency disorders like AIDS, extra pulmonary TB creates a new challenge for the clinicians. Tubercular lymphadenopathy is the most common form of extrapulmonary TB which commonly affects the cervical lymph nodes. Sharma et al.⁸ mentioned in their study that lymph node TB forms 35 % of extra-pulmonary TB out of which two third have cervical nodes.

We chose 91 patients fulfilling inclusion and exclusion criterias for the study

Our study showed that 15-29 year age group was the most common group to be involved. Khajanchi et al³ mentioned in their study that cervical lymphadenopathy more commonly affects the young and middle aged adult group. The study done by Gupta et al¹⁵ showed that the most common age group to be involved with TB lymphadenitis was 20-30 years. Another study done by Jha et al¹⁰ showed that the peak age of incidence was 11-20 years. The study done by Das B et al⁹, showed that 15-24years was most common age group to be involved

In our study, females(48,52.75%) were more affected with tuberculous

lymphadenopathy than males(43,47.25%) and the male to female ratio was 1:1.11. Similar results were also found in the studies conducted by Das et al.(1:1.1), Jha et al(1:1.3), Dandapat et al(1:1.2), and Subrahmanyam et al(1:1.3)^{9,10,11,12} Dandapat et al in their study mentioned that this may be due to low nutritional status in females and also because females are more conscious of their appearance than males. The reverse of this was also reported regarding gender distribution of TCL patients in studies done by Choudhury N et al (M:F ratio 1.75:1) and Magsi PB et al (M:F ratio 1.33:1)^{16,17}

72 Cases(79.12%) had a definite history of contact with TB patient, whereas 19 cases(20.87) did not have any such history. Khajanchi et al³ in their study found that history of contact with a patient of TB had a significant association with the diagnosis of TB cervical lymphadenopathy.

Majority of cases(63,69.23%) were from lower income group which was similar to the results of the study done by Jha et al.

Fine needle aspiration cytology(FNAC) is a simple, reliable and economical and less invasive test as compared to biopsy. Thus it is used as a preferred first line investigations in cases of cervical lymphadenopathy. FNAC can be performed in the OPD itself and has almost no complications. It reduces the need of invasive investigations like biopsy in such patients.

CONCLUSION

The incidence of TCL is quite high in India. TCL most commonly presents as a unilateral neck swelling. It commonly affects young and middle age group individuals. It frequently affects females more than males. It is more common in the lower socioeconomic class individuals. The diagnosis of TCL can be made with simple investigations like FNAC which can be performed in the OPD itself and the treatment can be started without any delay.

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