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Original Research Article

Scrofula: a descriptive study on the clinical and diagnostic profile of patients with tuberculous lymphadenitis

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ABSTRACT

Background: Tuberculosis remains to be the major health burden primarily affecting the developing countries. The commonest is pulmonary tuberculosis. The aim of the study was to study about the clinical presentation of tuberculous cervical lymphadenopathy and to correlate clinical diagnosis with the histopathological findings, management, outcome, follow up and improvement.
Methods: A retrospective descriptive study involving 75 patients with cervical lymph node tuberculosis were followed up from the time of diagnosis till the completion of treatment.
Results: It is more common in young females (21-30 years). Constitutional symptoms absent in most of the patients. Mantoux and erythrocyte sedimentation rate (ESR) raised in most cases. Fine needle aspiration cytology (FNAC) showed granuloma in 90.6% cases. GeneXpert results showed *Mycobacterium tuberculosis* (MTB) detected rifampicin (Rif) resistance not detected in 65.3% and MTB detected Rif resistance detected in 6.1%. Most of the patients recovered daily chemotherapy regimen. Surgery was rarely needed.
Conclusions: TB is still the commonest cause of cervical lymph node enlargement in developing countries. FNAC is a rapid, cheap, simple, and effective method of diagnosis for cervical lymphadenopathy. Anti-tubercular drugs should be started in patients with FNAC/biopsy showing granuloma even if GeneXpert negative and all the patients must be followed up regularly.

Keywords: Tuberculosis, Cervical TB, Scrofula, GeneXpert

INTRODUCTION

Tuberculosis remains to be the major health burden primarily affecting the developing countries. India accounts for one fifth (21%) of the global burden of tuberculosis. Mycobacterial lymphadenitis has plagued humanity since ancient times. Peripheral lymph node involvement is the commonest form of extrapulmonary mycobacterial disease and the cervical region is the most frequently affected site.[1-3] It has been also called as "scrofula". In Europe, it was known as "Kings Evil," where the royal touch was believed to cure the disease until the 18th century.[4]

This study was conducted to study the age incidence, clinical presentations, histopathological findings of tuberculous cervical lymphadenitis and also to study the work up, management, follow up in tuberculous cervical lymphadenitis.

METHODS

It was a retrospective descriptive study conducted on 75 cases which presented to the department of respiratory medicine of Saveetha Medical College and Hospital, Chennai, India, over a period of 1 year (February 2022 to January 2023), with diagnosis of tuberculous cervical lymphadenitis.

The data for the study was collected from individual patients in the form of proforma. All the patients underwent either fine needle aspiration cytology (FNAC)/excision biopsy and were started on anti-tuberculous treatment and followed up till the completion of the treatment/resolution of the symptoms.

Thorough history taking including duration of swelling, any constitutional symptoms, contact history, any previous h/o treatment for tuberculosis, any h/o co morbidities were noted.

All the patients underwent complete examination of the cervical lymph node and respiratory system.

Investigations such as complete blood count, erythrocyte sedimentation rate (ESR), Mantoux test, sputum for acid-fast bacilli (AFB), ultrasonography (USG) neck and chest X-ray were done routinely.

All patients underwent FNAC/excision biopsy to confirm the diagnosis and samples were sent for Xpert MTB/RIF test.

The patients were concluded to have tubercular cervical lymphadenitis either clinically or histopathologically and started on ATT and were followed up till the completion of the treatment.

Exclusion criteria

Patients who were not willing to undergo investigations and surgery if required and patients having cervical lymphadenopathy due to causes other than tuberculosis.

Statistical analysis

The data was analysed by exporting into Microsoft excel-version 16.56. Descriptive analysis of demographic data, clinical parameters, and post-treatment outcome and complications were carried out.

Ethical considerations

The study was approved by ethical review committee of the institution. Names and any other identifying information were removed from the final analysis sheets.

RESULTS

Out of 75 study subjects 48 were females and 27 were males (Figure 1). The disease occurs mostly in the age group of 21-30 years (44%). No cases of TB lymphadenitis were reported in people above 61 years of age (Figure 2). Palpable swelling (100%) was the most common presenting feature followed by pain (48%) and loss of appetite (32.4%) (Table 1). Incidence was found to be more on the right side (53.3%) when compared to left (38.6%) and bilateral lymph node swellings (8%). Upper deep cervical (45.3%) was the most frequent lymph node enlarged in cervical groups of lymph nodes. Chest X-ray suggestive of TB was found in 6.6% patients only. HIV screening in all these cases was negative (Table 2).

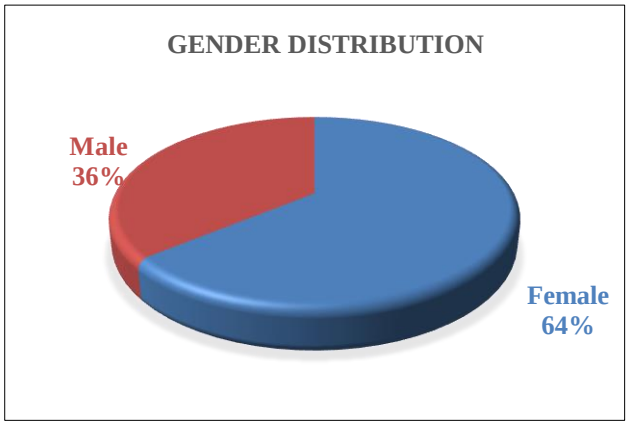

Figure 1: Gender distribution.

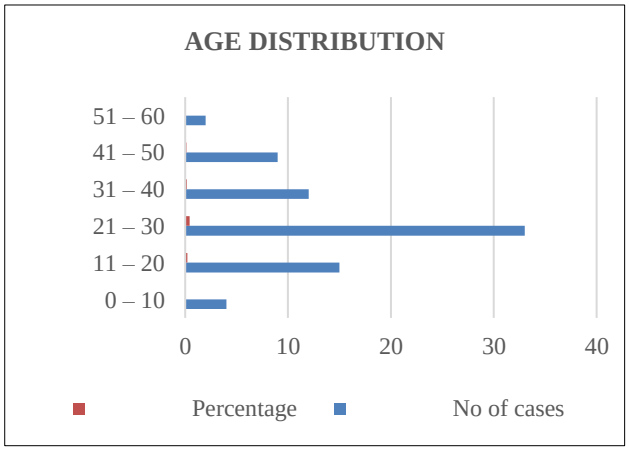

Figure 2: Age distribution.

FNAC or biopsy was performed in all the cases presented to the department with peripheral lymphadenopathy. Most common cytological pattern seen was epithelioid granuloma with caseous necrosis (90.6%). All fine needle aspiration/ biopsy samples were sent for GeneXpert out of which 49 (65.3%) were MTB detected (Figure 3). Of this, results in 46 patients were MTB detected, Rif resistance not detected and 3 patients showed MTB detected, Rif resistance detected. Based on these findings, the patients were started on anti-tubercular treatment. The patients diagnosed to have MDR-TB were started on treatment as per PMDT guidelines.

Adverse drug reactions to ATT was noted in 30.6% cases. Among the patients that reported adverse reactions, 17.3% reported GI disturbances, 9.3% reported with liver function derangement and 4% presented with polyarthralgia. Modified regimen of ATT was given in 8% of the people with adverse drug reactions. These patients were advised to follow in OPD regularly every month. Complete resolution of this enlargement was seen in these patients after the completion of treatment.

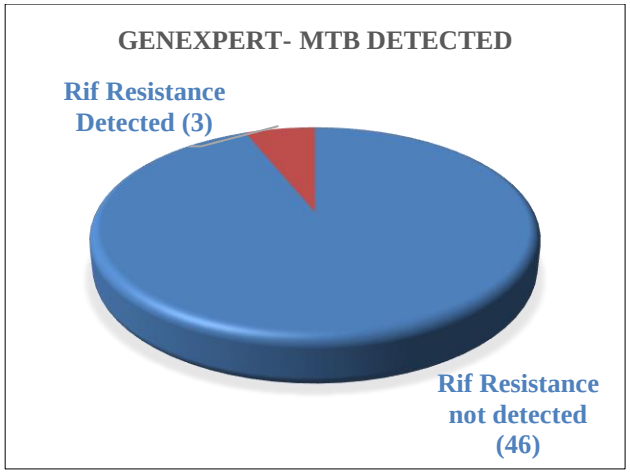

Figure 3: Genexpert- MTB detected.

Table 1: Clinical presentation of patients with TB lymphadenitis.

Symptoms	Number of cases	Percentage (%)
Swelling	75	100
Pain	36	48
Fever	14	18.6
Loss of weight	17	22.6
Cough	5	6.6
Sinus tract formation	1	1.3

Table 2: Investigations.

Investigations	Number of cases	Percentage (%)
Elevated ESR	59	78.6
Mantoux positivity	63	84
Positive CXR	5	6.6
Sputum AFB positive	8	10.6
FNAC/biopsy positive	68	90.6
FNAC/biopsy inconclusive	7	9.3
GeneXpert-MTB detected	49	65.3

DISCUSSION

Extrapulmonary tuberculosis is a major health problem globally. It makes diagnosis and treatment monitoring more difficult. The most prevalent type of extrapulmonary TB is peripheral lymphadenopathy.

Male to female ratio for peripheral lymphadenopathy in our study was 1:1.7 which was almost similar to a study done Fontanilla et al where they noted a male to female ratio of 1:1.4.[5]

In a study done by Bezabih et al, they found the peak incidence of tuberculous lymphadenitis in age group of 30–40 years.[6] In our study, the peak incidence was in age group of 21–30 years. Lymphadenitis has a peak age of onset of 20–40 years, despite once being thought of as a childhood disease.[7]

Chest X-ray showed features of tuberculosis in 6.6% of the cases which was less when compared to 16% and 14% respectively in the Jha et al and Maharjan et al study.[8,9] Priel et al found 28.8% of lymph node TB having the evidence of pulmonary TB.[10] Tuberculin test was performed in all cases and showed positivity of 84% and in study by Das et al, Mantoux was positive in 73% cases.[11] In this study 16% cases had history of contact for tuberculosis which was less compared to Das et al study which showed 52%.[11] The upper deep cervical group of lymph nodes were most frequently affected in the study population, accounting for 60% which is more when compared to the Maharjan et al study.[9] Posterior triangle and multiple nodes were least at 5.3% and 4% respectively. In Maharjan et al study, posterior triangle group of nodes are more commonly affected followed by the upper deep cervical group of nodes.[9]

In the present study, FNAC revealed caseating granuloma in 90.6% of cases compared to 69% in Muhammad et al and 82% in Salman et al study.[12,13] FNAC showed inconclusive evidence in 9.3% of the cases in the present series. According to the Salman et al, excision biopsy revealed caseating granuloma in 18% of the cases.[13]

65.3% of the samples that were sent for GeneXpert turned out to be MTB detected, out of which, 93.8% were MTB detected, Rif resistance not detected and 6.1% showed MTB detected, Rif resistance detected. A study done by Yu et al, found the sensitivity of Xpert MTB/RIF for LNTB was 79% and a meta-analysis by Denkinger et al, Xpert MTB/RIF sensitivity was 81.2%.[14,15]

About 30.6% cases reported for adverse drug reactions for ATT. Most common being GI disturbances in 17.3% cases followed by LFT derangement in 9.3% and polyarthritis in 4% cases. After confirmation of diagnosis, patients were put on Anti-tubercular drugs and were followed up. The cure rate was 100%. This result is similar to that of the study done by Jha et al and Maharjan et al.[8,9] All the cases were symptoms free at the end of 6-8 months.

Limitations

This is a single centre study with relatively small sample size. It will be easier to accurately depict the clinical and diagnostic profile patients with tuberculous lymphadenitis in our population by involving various centres with a high sample size.

CONCLUSION

The most prevalent form of extrapulmonary TB is lymph node TB. It is more common among young adults and affects females more than males. FNAC is an effective

mode to diagnose the TB lymphadenitis node in a resource-limited setting. As many cases of TB lymphadenitis did not reveal AFB smear positivity, a meticulous interpretation of different morphological patterns of TB lymphadenitis is essential for appropriate cytological diagnosis along with Xpert MTB/RIF testing. New molecular methods of DST have revolutionised the diagnosis of MDR-TB. Despite the fact that treating patients with MDR strains might be extremely difficult cure is often possible with early identification of resistance and use of a properly formulated regimen.

Combining the available clinical, radiological, and microbiological modalities for prompt diagnosis can help in avoiding misdiagnosis and delay in treatment, especially in extrapulmonary TB, thereby fulfilling the aim of National Tuberculosis Elimination Programme.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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