

## Clinical Spectrum in the Presentations of Tubercular Cervical Lymphadenopathy

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### Abstract:

**Background:** Tuberculosis (TB) is a major public health problem worldwide and Mycobacterium tuberculosis bacteria is the most common causative agent in India. Tubercular lymphadenopathy is the most common form of extrapulmonary TB and Cervical lymph nodes are the most commonly affected lymph nodes by TB. The analysis of lymph node enlargement in the neck region is not an easy task and the diagnosis of the condition is a problem because most of the diseases resemble each other. Hence, our aim is to diagnose the cases of TB cervical lymph nodes out of the spectrum of cervical lymphadenopathy, their various clinical presentations and different modalities of treatment.

**Materials and Methods:** A prospective study was conducted on 70 patients with cervical lymphadenopathy attending the department of General Surgery and ENT, Assam Medical College & Hospital from June 2020 to May 2021. All patients more than 18 years of age with cervical lymph node swelling were included in this study. Detailed history, clinical examination, basic investigations like routine blood, ESR, sputum for AFB and CBNAAT, Mantoux test, Chest X-rays were performed and FNAC being cheap, easy to perform and quick in getting results serve as the main diagnostic tool.

**Results:** Tuberculosis was found to be the most common cause of cervical lymphadenopathy (42, 60%) followed by reactive lymphadenitis (26, 37.2%) and secondaries (2, 2.8%). The commonest age group affected by TB cervical LAD was 28-37years. The males (22, 52%) were more affected with TB cervical LAD as compared to females (20, 48%) with M:F ratio 1.1:1. A majority of the patients (35,80%) had unilateral TB cervical LAD. Most commonly involved lymph nodes group found to be Level 5 lymph nodes (26, 62%). Other than excision biopsy (2 patients) no other type of surgery was needed.

**Conclusion:** Tuberculosis is an important cause of cervical lymphadenopathy. Though Anti-Tubercular chemotherapy is the mainstay of treatment, surgical treatment may be useful in selected cases like diagnostic excision to establish a diagnosis or in case of treatment failure in the management of drug resistant organisms. Therefore, early diagnosis and treatment are critical in lowering the overall morbidity and complications.

**Key Word:** Tuberculosis (TB), Lymphadenopathy (LAD), Fine Needle Aspiration Cytology (FNAC).

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### I. Introduction

Cervical lymphadenopathy is a common clinical observation in the head and neck regions as they are rich in lymphatics. The analysis of lymph node enlargement in the neck region is not an easy task and the diagnosis of the condition is a problem because most of the diseases resemble each other.<sup>1</sup> Thus, cervical lymphadenopathy is a diagnostic dilemma to the surgeons.

Tuberculosis (TB) is a major public health problem worldwide and Mycobacterium tuberculosis bacteria is the most common causative agent in India. In developing countries like India etiology of cervical lymphadenopathy still appears to be infective whereas in Western world the most common cause is malignancy.<sup>2</sup>

Tubercular lymphadenopathy (LAD) is the most common form of extrapulmonary TB and Cervical lymph nodes are the most common lymph node affected by TB<sup>3</sup>. The infection of lymph nodes by

mycobacterium occurs either through hematogenous dissemination following primary tuberculosis or as a local extension from tuberculous infection of tonsils or adenoids. Even after the advent of effective chemotherapy for tuberculosis, it still poses a considerable problem in diagnosis and treatment.

Neck consists nearly 2/3rd of the total lymph nodes of the body. The enlargement of these lymph nodes is quite significant as there so many etiological agents and is an index of spread of infection and malignancy. The size, character, site and growth rate of lymphadenopathy often provides direction for the diagnostic process.

Information from the clinical history and examinations are very much useful in the etiologic work-up for the diagnosis of lymphadenopathy as it avoids the need for extensive diagnostic testing. The various methods available for the analysis of cervical node enlargement are clinical evaluation, aspiration cytology, and open biopsy. Each method of diagnosis has its own merits and demerits.<sup>4</sup>

The objectives of this study are:

- To diagnose the cases of TB cervical lymphadenopathy out of the spectrum of cervical lymphadenopathy.
- To study the various clinical presentations of TB cervical lymphadenopathy.
- To study the different modalities of treatment given to the patients.

## **II. Material And Methods**

The present study was conducted prospectively on selected 70 patients at Assam Medical College & hospital, Dibrugarh, Assam.

**Type of study:** Hospital based observational study

**Study population:** All cases of inpatients and outpatients with cervical lymphadenopathy in the Department of General Surgery & Department of Otorhinolaryngology, Assam Medical College and Hospital, Dibrugarh.

**Duration of study:** One year from June 1st, 2020 to May 31st, 2021.

**Sample size:** A total of 70 patients presenting with cervical lymphadenopathy was taken during the study period fulfilling the inclusion and exclusion criteria.

### **INCLUSION CRITERIA:**

1. Patients more than 18 years of age with cervical lymph node enlargement.

### **EXCLUSION CRITERIA:**

1. Patients having bleeding diathesis.
2. Previously diagnosed cases of cervical lymphadenopathy.
3. Patients where FNAC / Biopsy of the lymph node could not be carried out.
4. Pregnant women.
5. Patients not ready to participate in the study.

### **Procedure methodology**

After written informed consent was obtained, a predesigned proforma was used for data collection which included detailed history taking and clinical examination of the patients and investigations including FNAC/Biopsy of the lymph node and relevant hematological and radiological investigations. Age, sex, duration of symptoms, constitutional symptoms, history of contact with tuberculosis patient and other relevant aspects were noted. Generalized systemic examination was performed, followed by detailed local examination.

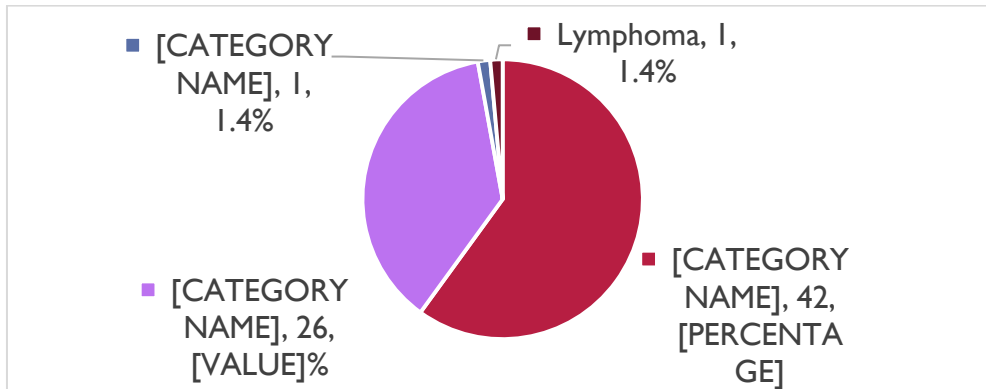
After establishing a provisional clinical diagnosis, further investigations were carried out to confirm the diagnosis. These included routine hematological investigations like Hemoglobin estimation, total and differential leukocyte count, ESR, Liver function test and blood sugar level and also HIV I & II test. X ray Chest, USG neck and FNAC were done in all patients. All cases were subjected for Fine Needle Aspiration Cytology (FNAC), inconclusive FNAC finding was confirmed by Excisional biopsy but not as a routine procedure. Other relevant investigations like Mantoux test, Sputum for AFB, CBNAAT were also be done whenever necessary to determine the correct diagnosis.

### **Statistical analysis:**

All the data were compiled and analysed on Microsoft excel. Statistical analysis was done using SPSS software version 16 (Statistical package for social science) and data were presented with the help of frequencies (%) and proportions.

**III. Result**

In our study, a total of 70 patients presented with cervical lymphadenopathy and out of this TB cervical lymphadenopathy was found in 42 (60%) patients, followed by Reactive Lymphadenopathy (26, 37.2%) and Secondaries (1, 1.4%) & Lymphoma (1, 1.4%) based on FNAC.



**Figure 1:** Different types of Cervical Lymphadenopathy based on FNAC

**1.AGE DISTRIBUTION:**

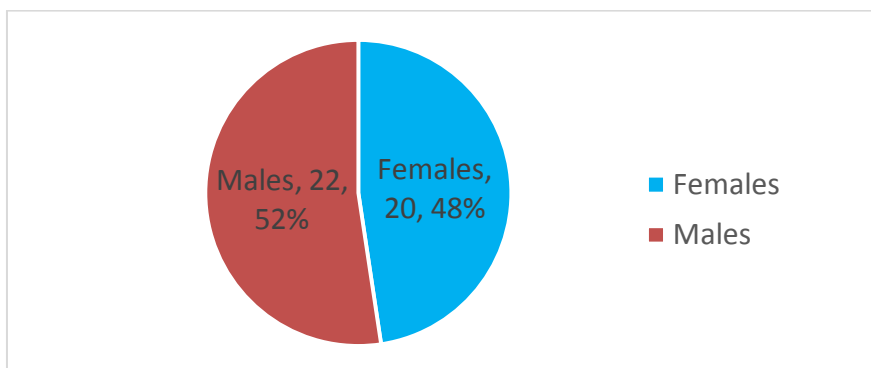
In our study the commonest age group affected by TB cervical lymphadenopathy was 28– 37 years (22, 52.4%) followed by 38 – 47 years (10, 23.8%) and 18 – 27 years (5, 11.9%).

Age groups (Years)	No. of patients	Percentage (%)
18 – 27	5	11.9
28 – 37	22	52.4
38 – 47	10	23.8
48 – 57	3	7.2
>57	2	4.7
<b>Total</b>	<b>42</b>	<b>100</b>

**Table 1 :** Age distribution of patients with TB cervical lymphadenopathy

**2.GENDER DISTRIBUTION:**

In our study, out of the 42 patients of TB cervical lymphadenopathy, 22 patients (52%) were males and 20 patients (48%) were females with M:F ratio 1.1:1.



**Figure 2 :** Gender distribution of TB cervical lymphadenopathy

**3. SITE DISTRIBUTION OF CERVICAL TUBERCULAR LYMPHADENOPATHY**

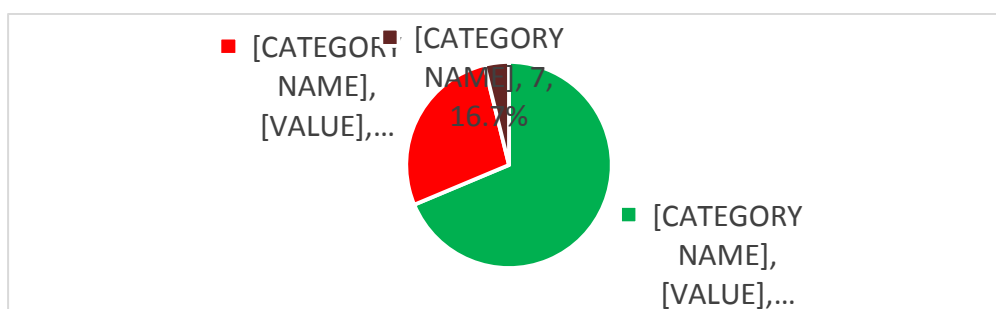
In our study of 42 patients of TB cervical lymph node, commonly involved lymph node group was level V (26, 62%) followed by level IV (8, 19%) level III & VI (3, & 7.1% each) and level I & II (1, 2.4% each).

Level	No. of patients	Percentage (%)
I	1	2.4
II	1	2.4
III	3	7.1
IV	8	19
V	26	62
VI	3	7.1
<b>Total</b>	<b>42</b>	<b>100</b>

**Table 2:** Distribution of TB lymph nodes according to the level of cervical region

#### 4. Laterality of the Lymph nodes

In our study out of 42 patients of TB cervical lymphadenopathy, 25 patients (59.5%) has swelling on the right side of neck, 10 patients (23.8%) has swelling on left side of neck & 7 patients (16.7%) have bilateral neck swelling.



**Figure 3 :** Distribution of TB lymph nodes on the side of neck

#### 5. CONSTITUTIONAL SYMPTOMS IN ADDITION TO NECK SWELLING:

In our study, majority of the patients presented with other symptoms like fever (32, 76.2%) , cough (21, 50%), malaise (20, 47.6%), pain (10, 28.5%) and sinus/ulcer ( 5, 11.9%).

Symptoms	No. of patients	Percentage (%)
Fever	32	76.2
Cough	21	50
Malaise	20	47.6
Weight loss	15	35.7
Sinus/ulcer	5	11.9
Pain	10	28.5

**Table 3:** Different symptoms in patients with TB cervical lymphadenopathy in addition to neck swelling

#### 6. HISTORY OF CONTACT WITH TUBERCULOSIS

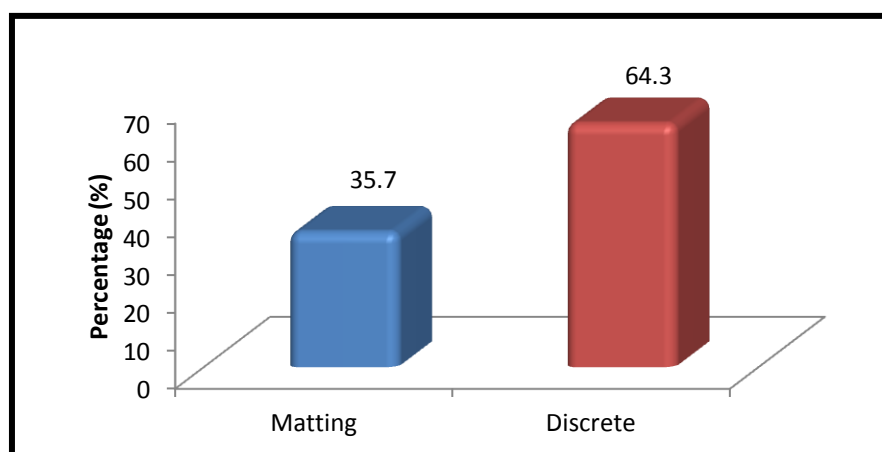
In our study, out of 42 patients of TB cervical lymphadenopathy, 6 patients (14.3%) had H/O contacts with TB patients.

H/O contacts with tuberculosis	No. of patients	Percentage (%)
Positive	6	14.3%
Negative	36	85.7%
<b>Total</b>	<b>42</b>	<b>100%</b>

**Table 4:** History of contacts with Tuberculosis patients

**7. DISCRETE/MATTED LYMPH NODES IN TB PATIENTS:**

In this study, we found that out of the total 42 tubercular lymphadenitis patients, 15 cases (35.7%) had matted lymph nodes while in 27 cases (64.3%) had discrete lymph nodes.



**Figure 4 :** Showing discrete or matted lymph nodes in TB patients.

**8. NUMBER OF LYMPH NODES AFFECTED:**

In this study, 71.3% (30 patients) of the cases have single lymph node involvement while 28.7% (12 patients) have multiple lymph nodes involvement.

No. of lymph nodes	No. of patients	Percentage (%)
Single	30	71.3%
Multiple	12	28.7%
Total	42	100%

**Table 5:** Number of lymph nodes affected in TB patients.

**9. TREATMENT**

In our study, majority of the patients (40, 95.2%) received Anti-Tubercular Therapy (ATT), only 2 patients (4.8%) had undergone excision of lymph nodes plus ATT. No other surgery done.

Treatment	No. of patients	Percentage (%)
ATT	40	95.2%
ATT + Excision	2	4.8%
Other surgery	0	0%

**Table 6 :** Different modalities treatment given to the patients

**IV. Discussion**

Lymph nodes are lymphoid organs found in various parts of the body considered to take part in immune defense. Cervical lymphadenopathy defined as nodes in the neck measuring more than 1 cm in diameter and it is one of the commonest problem seen in the Surgery Out Patient Department (OPD).

Total 70 patients presented with cervical lymphadenopathy during the study duration and out of this TB cervical lymphadenopathy was found in 42 (60%) patients. The commonest age group affected by TB cervical Lymphadenopathy was 28 – 37 years which is comparable to the study done by Motiwala MA et al<sup>5</sup>, Guruswamy CH et al<sup>6</sup>. The males (22, 52%) were more affected with TB cervical lymphadenopathy as compared to females (20,48%) with M:F ratio 1.1:1. This is similar to the study done by Prasadarao Desari<sup>7</sup>, V K Gorle<sup>8</sup> and V Pandya<sup>9</sup> which showed slightly male preponderance.

A majority of the patients (35, 83.3%) had unilateral TB cervical lymphadenopathy, particularly more involvement of the right side (25, 59.5%) of the cervical regions and also 71.3% (30 patients) of the cases have

single lymph node involvement. This is similar to the studies done by Mili MK et al<sup>10</sup>, Aswini Kumar Myneni et al<sup>11</sup>, Motiwala MA et al<sup>5</sup>, Guruswamy CH et al<sup>6</sup>. Commonly involved lymph node group was level V (26, 62%) i.e. Posterior group of lymph nodes followed by level IV (8, 19%) which is comparable to studies done by Mukherjee A et al<sup>12</sup>, Mithun Get al<sup>13</sup>. Out of the total 42 tubercular lymphadenitis patients, 15 cases (35.7%) had matted lymph nodes while in 27 cases (64.3%) had discrete lymph nodes. This is similar to the studies done by V Pandey et al<sup>9</sup>, V K Gorle et al<sup>8</sup>, Guruswamy CH et al<sup>6</sup>.

In addition to the TB cervical lymph node swelling, a majority of the patients presented with other symptoms like fever (32, 76.2%), cough (21, 50%), malaise (20, 47.6%), pain (10, 28.5%) and sinus/ulcer ( 5, 11.9%). . This is comparable to studies done by Motiwala MA et al<sup>5</sup>, Anchal Gupta et al<sup>14</sup>, Mukherjee A et al<sup>12</sup>. Anti-tuberculous chemotherapy is the mainstay in the management of TB cervical lymphadenopathy. Other than excision biopsy (2 patients) no other type of surgery was needed in our study.

## V. Conclusion

Cervical lymphadenopathy is a clinical manifestation of regional or some systemic disease as it can arise either from benign or malignant causes. It can serve as a clue to diagnosis some underlying disease. Most of the diseases are medically curable with limited role for surgery. Tuberculosis is an important cause of cervical lymphadenopathy. Though Anti-Tubercular chemotherapy is the mainstay of treatment, surgical treatment may be useful in selected cases like diagnostic excision to establish a diagnosis or in case of treatment failure in the management of drug resistant organisms. Therefore, early diagnosis and treatment are critical in lowering the overall morbidity and complications.

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