

Original Research Article

## **Pattern of Cervical Tuberculous Lymphadenitis (CTL) among patients presenting at a tertiary care health centre**

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**Abstract:** Cervical Tubercular Lymphadenitis (CTL) may often mimic malignancy or other pathologic process and misdiagnosed which leads to an unnecessary delay in diagnosis. The aim of this study is to analyze the pattern of Cervical Tuberculous Lymphadenitis among patients presenting at a tertiary care health centre. Retrospective cohort of patients with confirmed diagnosis of CTL during formed the study population. Histologically proven cases of Cervical Tuberculous Lymphadenitis by either by Excision biopsy or FNAC were included in this study. Study tools were records of the patients such as information from MRD department and records from histopathological section. Data of 80 patients was analyzed in this study. Gender wise, 57 (71.3%) were females and remaining 23 (28.7%) were males. Majority (64, 80.0%) of cases presented with solid nodes. Most (74, 92.5%) of enlarged nodes were multiple. 83.75% of the nodes were unilateral. Level V and II cervical nodes were the most common regions affected either in isolation or as multiple nodes. Fever and loss of appetite was found in 87.8% and 71.25% subjects respectively. FNAC was done in 76 patients, of which 85.5% patients were found positive for TB. Chest X-rays were negative for most (78.7%) of the patients. Most (45, 56.3%) of the subjects received combined Medical & surgical treatment. Early diagnosis and treatment is important in reducing the prevalence of CTL. CTL usually presents with unilateral, multiple, matted neck swelling in young females. FNAC is a reliable tool for diagnosis.

**Keywords:** Tuberculosis, Mycobacterial Cervical lymphadenitis, India

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### **INTRODUCTION**

Robert Koch discovered the tubercular bacilli on 24 March 1882. Today, tuberculosis is still a major public health problem worldwide[1]. Tuberculosis, "Captain of all these men of death", as referred to by John Bunyan in the 18th century is still the biggest health challenge of the world. It is known that 1.5% of India's population is affected with tuberculosis[2].

Cervical tuberculous lymphadenopathy or "scrofula", which used to be treated in medieval times in England by the "King's touch" and issuance of a "gold coin", is still the most common cause of persistent cervical lymph node enlargement in the

developing countries[3]. Tuberculosis is more prevalent in low income countries like Bangladesh, India and Pakistan, as compared to high income countries[4].

Lymphadenitis is the commonest form of extrapulmonary tuberculosis and tuberculous lymphadenitis is among the commonest causes of peripheral lymphadenopathy in the developing world [5,6]. Cervical Tubercular Lymphadenitis (CTL) is known for its varied presentations. It may often mimic malignancy or other pathologic process and misdiagnosed which leads to an unnecessary delay in diagnosis. Better understanding of this topic would help us to make early diagnosis thus timely initiation of

treatment. Therefore this study was planned with an objective to analyze and ascertain the pattern of Cervical Tuberculous Lymphadenitis (CTL) among patients presenting at a tertiary care health centre.

**MATERIALS AND METHODS**

The present retrospective study was planned and executed by the Department of Pathology in collaboration with Department of ENT and Chest and TB, S. N. Medical College, Agra, Uttar Pradesh. Retrospective cohort of patients with confirmed diagnosis of CTL during 1<sup>st</sup> January 2012 to 31<sup>st</sup> December 2013 at this tertiary care health centre formed the study population. Histologically proven cases of Cervical Tuberculous Lymphadenitis by either by Excision biopsy (when FNAC was negative or doubtful and clinical suspicion was high for tuberculosis) or by FNAC were included in this study. Cases of abscess were diagnosed by incision and drainage of abscess with biopsy from wall of abscess. Confirmed cases of CTL were considered as the finally analyzable subjects. Histopathological diagnosis was mandatory for inclusion in the study. Finally a total of 80 cases were included in this study.

Study tools were records of the patients such as information from MRD department and records from histopathological section i.e. histopathological requisition forms and clinical case sheets. Routine investigations including ESR and Chest Radiographs were also analyzed. Lymph nodes were classified as per guidelines of American Academy of Otolaryngology Head and Neck Surgery: Level I, Sub-mental and Sub-mandibular lymph nodes; Level II, Cervical jugular chain nodes above the level of hyoid; Level III, Cervical jugular chain nodes from the level of hyoid to the level of Cricoid; Level IV, Cervical jugular chain nodes from the level of Cricoid to the supra-sternal

notch; Level V, Posterior triangle lymph nodes; Level VI, Central compartment nodes[7].

Diagnosed cases were managed as per standard guidelines. Along with medical treatment, surgical treatment was given in the form of excision of the large lymph nodes (>6cm) suspected not to respond by medical treatment only, incision and drainage of abscess and excision of sinus tract along with associated lymph nodes. All patients were followed up at least six months to one year (2 monthly for six months than 3 monthly for next six months) and progress was assessed by clinical examination. For the purpose of this study, ‘cure’ was defined as complete disappearance of lymph nodes or decrease in size of <1cm.

Permission of Institutional ethics committee (IEC) was sought before the commencement of the study. All the proforma were manually checked and edited for completeness and consistency and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). The results were expressed using appropriate statistical methods.

**RESULTS**

Data of 80 patients was analyzed in this study. Gender wise, 57 (71.3%) were females and remaining 23 (28.7%) were males. All the patients were negative for HIV. Majority (64, 80.0%) of cases presented with solid nodes. Most (74, 92.5%) of enlarged nodes were multiple. 83.75% of the nodes were unilateral. Level V and II cervical nodes were the most common regions affected either in isolation or as multiple nodes. Fever and loss of appetite was found in 87.8% and 71.25% subjects respectively. (Table 1)

**Table-1: Pattern of presentation of lymph nodes and systemic features among study subjects**

Variables	Number	Percentage
Mode of Presentation	Solid nodes	64 80.0%
	Abscess	13 16.25%
	Discharging sinus	3 3.75%
Number of enlarged lymph nodes	Single	6 7.5%
	Multiple	74 92.5%
Site of involvement	Unilateral	67 83.75%
	Bilateral	13 16.25%
Size of involved nodes	<3 cm	40 50.0%
	3-6 cm	29 36.25%
	>6 cm	31 13.75%
Level of involvement*	Level I	5 6.25%
	Level II	31 38.75%
	Level III	16 20.0%
	Level IV	14 17.5%
	Level V	42 52.5%
Systemic features*	Fever	75 87.8%
	Loss of weight	58 63.4%
	Night sweat	51 63.4%

	Loss of appetite	57	71.25%
*Multiple responses permitted			

FNAC was done in 76 patients, of which 85.5% patients were found positive for TB. Chest X-rays were negative for most (78.7%) of the patients.

Most (45, 56.3%) of the subjects received combined Medical & surgical treatment. (Table 2)

**Table-2: Diagnostic interventions and treatment modalities among study subjects**

Variables	Number	Percentage	
FNAC (n=76)	Positive for TB	65	85.5%
	Negative for TB	11	14.5%
Chest radiography	Negative for TB	63	78.7%
	Positive for TB	17	21.3%
ESR (mm/1st hour)	Mean	38.5	
	Highest	86	
	Lowest	6	
Treatment	Medical treatment only	35	43.7%
	Medical & surgical treatment	45	56.3%

**DISCUSSION**

Tuberculosis continues to be the biggest health problem in developing countries with enormous social and economic implications. Even in the developed countries, it is again posing a new health challenge due to the migration of people from developing areas with a high prevalence of tuberculosis and the increasing high incidence of HIV infection in these countries[3,8].

In this study we analyzed histologically proven 80 cases of cases of Cervical Tuberculous Lymphadenitis. Gender wise female patients outnumbered male counterparts (71.3% females and 28.7% males). Purohit MR *et al.* recorded similar findings in his study from Central India (Ujjain)[9]. The result of this study is in agreement with one other previous study[10]. Inconsistencies were found with the studies from Pakistan (male 57.14%, female 42.86%) and London (male 63.63%, female 36.36%)[11-12].

We observed in our study that majority (64, 80.0%) of cases presented with solid nodes. Most (74, 92.5%) of enlarged nodes were multiple. 83.75% of the nodes were unilateral. Jha BC *et al* found multiple lymph nodes in 57% cases, of which matted 71.9% and discrete 28.1%, which were coherent with our study[3]. In the contrary, another study from India found single, mobile lymph node 81.80% and only 0.69% lymph nodes showed matting. He observed 104 cases of tuberculous lymphadenitis and found no case with abscess or sinus formation[13]. Abscess and sinus formation were found little higher in our study compared to other studies probably due to delayed presentation as most of the patients come from rural areas.

In this study, level V and II cervical nodes were the most common regions affected either in

isolation or as multiple nodes. The findings of involved lymph node groups in this study were consistent with the studies done by Magsi PB *et al*[14].(level V followed by level I) and Chaudhary V *et al*[15].(level V followed by level II) but inconsistent with Jha BC *et al*[3]. (level II followed by level III) and Mogre DA (level II followed by level V)[10,13]. Dandapat *et al.* found upper deep jugular nodes to be most commonly affected[16].Another study from Khartoum by Kheiry and Ahmed observed that the most affected nodes were in the posterior triangle[17].

We observed that fever and loss of appetite was found in 87.8% and 71.25% subjects respectively. The observations of two studies are inconsistent with our findings where systemic symptoms were only 18% and 8% respectively[3,14]. However Choudhury N *et al* found systemic symptoms in 36.36% of patients.<sup>12</sup> Frontanilla JM *et al* found systemic symptoms more frequent in HIV-positive patients than HIV- negative patients(76% vs 12%)[18].

In our study FNAC was done in 76 patients, of which 85.5% patients were found positive for TB. Khan R *et al*[19] and Jha BC *et al*[3] found FNAC positive in 90% and 85.7% cases respectively which were also similar with this study (83.9%). Chest X-rays were negative for most (78.7%) of the patients. On chest radiograph, Jha BC *et al*[3] and Magsi PB *et al*[14] found associated lung lesion in 16% and 7.5% cases respectively which were higher than ours (3.1%). But Choudhury N *et al*[12]found associated lung lesion in 48.48% cases.

Before the advent of chemotherapy, surgical excision of all the lymph nodes was the mainstay of treatment for tuberculous lymphadenopathy[20]. In 1950s, when chemotherapy for tuberculosis was just

introduced, excision of all involved lymph nodes followed by anti-tuberculous chemotherapy for 12–24 months was found to be more effective treatment[21]. Most (45, 56.3%) of the subjects received combined Medical & surgical treatment. Jha BC *et al* treated 56 patients successfully with short course chemotherapy for six months where surgery was required rarely[3].

## CONCLUSION

Early diagnosis and treatment is important in reducing the prevalence of CTL. CTL usually presents with unilateral, multiple, matted neck swelling in young females. However, at times diagnosis of CTL can be challenging and delayed due to rarity of involvement. FNAC is a reliable tool for diagnosis. Anti-tuberculous chemotherapy remains the mainstay of treatment. Surgical treatment is useful in selected cases.

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