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Original Research Article

A clinical study of tuberculous cervical lymphadenopathy: surgeon's perspectives

Kiran Patel*

Department of Surgery, GMERS Medical College and Hospital, Valsad, Gujarat, India

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***Correspondence:**
Dr. Kiran Patel,
E-mail: Drkiran22@yahoo.com

ABSTRACT

Background: Cervical lymphadenopathy is common in this country. There are many causes of cervical lymphadenopathy like, malignancies, infections, autoimmune disorders, iatrogenic, and other miscellaneous conditions. There are more chances of wrong clinical diagnosis in case of lymphadenopathy than any other diseases. The present study was planned with the objective to study the clinical presentation of tuberculous cervical lymphadenopathy.
Methods: A prospective, cross-sectional study was undertaken with inclusion of all cases of cervical lymphadenopathy attending the department of general surgery. The patients with cervical lymphadenopathy irrespective of age, sex, caste, religion, socio-economic status, duration and severity of illness were included in this study. The patients with primary malignancy, patients with clinical features of suspected malignancy like obvious growth or ulcer in head and neck region and pregnant women were excluded from the study.
Results: Total 130 patients presented with cervical lymphadenopathy during the study duration. Infective etiology was the commonest (55, 42.31%) cause for the cervical lymphadenopathy followed by TB (50, 38.46%). The commonest age group affected by tuberculous cervical lymphadenopathy (TCL) was 20-35 years. The females (29, 58.00%) were more affected with TCL as compared to males (21, 42.00%). A majority of the patients (45, 90.00%) had unilateral TCL. Commonly involved lymph node group was level V (26, 52.00%). Other than excision biopsy (12 patients), no other type of surgery was needed in patients.
Conclusions: Though, anti-tuberculous chemotherapy is the mainstay of treatment for TCL, surgical treatment is more useful in selected cases. In this regard, early diagnosis and treatment are critical in lowering the overall prevalence. Therefore, it is important that surgeons are aware of tuberculosis in the head and neck region.

Keywords: Cervical lymphadenopathy, Cervical swelling, Surgical intervention, Tuberculous cervical lymphadenopathy

INTRODUCTION

Tuberculosis (TB) is an ancient disease as old as mankind.[1] TB is one of the most common cause of death particularly due to infectious agent worldwide in adults.[2] In 2014, around 9.6 million people developed TB and around 1.5 million died from the disease.[2] India have the highest burden of TB.[3] According to World Health Organization (WHO) TB statistics for India for 2016, the estimated incidence of TB was 2.79 million cases in India.[3] Tuberculosis may present with pulmonary as well as extra-pulmonary involvement. Extra-pulmonary TB constitutes around 15-20% of all cases of TB.[4] TB lymphadenopathy is seen in nearly 35% of extra-pulmonary cases of TB.[4] Among TB lymphadenopathy cases, cervical lymph nodes are the most common site of involvement with may range from 60% to 90%.[4] In the differential diagnosis of a cervical lymphadenopathy,

Tuberculous Cervical Lymphadenopathy (TCL) should be kept in mind especially in endemic countries like India.[5] TCL may present as a unilateral single or multiple painless lump, mostly found in the posterior cervical or supraclavicular region.[6,7] The patient with TCL may present with lymphadenopathy of various duration, typically of 1-2months, may varies from 3weeks to 8months.[8,9] There is a significant variation in the clinical signs and symptoms of lymphadenopathy. However, night sweats, weakness, cough and fever could be also seen in the patients other than TCL also.[10]

For, a surgeon enlarged lymph node is indication of an infection or malignancy.[11] Cervical lymphadenopathy is common in this country. There are many causes of cervical lymphadenopathy like malignancies, infections, autoimmune disorders, iatrogenic and other miscellaneous conditions.[12] There are more chances of wrong clinical diagnosis in case of lymphadenopathy than any other diseases. The certain diagnosis can be made on the bases of histopathological examination of lymph node's biopsies. Therefore, it is important that surgeons are aware of tuberculosis in the head and neck region and its varied manifestations and differential diagnosis. With this background, the present study was planned with the objective to study the clinical presentation of tuberculous cervical lymphadenopathy.

METHODS

A prospective, cross-sectional study was undertaken in ESIC General Hospital, Bapunagar, Ahmedabad, Gujarat between July 2010 to September 2012. The protocol was approved by the Institutional Ethics Committee. The study included all cases of cervical lymphadenopathy attending the department of general surgery. The patients with cervical lymphadenopathy irrespective of age, sex, caste, religion, socio-economic status, duration and severity of illness were included in this study. The patients with primary malignancy, patients with clinical features of suspected malignancy like obvious growth or ulcer in head and neck region and pregnant women were excluded from the study.

Patients was recruited in the study on pro-rata basis and all the patients participating in the study were explained clearly about the purpose and nature of the study in the language they can understand and written informed consent was taken before including them in the study. All the patients were subjected to proper history taking, detailed clinical examination and were prescribed initial conservative management with antimicrobials (tablet amoxicillin 500mg+clavulanic acid 125mg thrice daily for 5 days) and were followed-up after 2 weeks. If the swelling underwent resolution, then cases were excluded. If the swelling persisted then FNAC and USG of the cervical lymph nodes were carried out. If results were still inconclusive, biopsy and histopathological examination of the lymph node was done. Other investigations like chest X-ray, tuberculin test, sputum for AFB, blood investigation like ESR were also advised. Diagnosis of TB was confirmed if pus/aspirate from node shows ZN stain positive for AFB and/or granulomatous changes with Langhans giant cells. If FNAC report was inconclusive, excision biopsy was advised for confirmation. Patients diagnosed with cervical node TB were prescribed Anti-Tubercular Treatment (ATT) regiment as per the RNTCP guidelines. Patients with infective lymphadenopathy were prescribed antimicrobials and anti-inflammatory drugs. Patients with metastatic nodes on cytology underwent further investigation for the site of primary tumour and managed accordingly. For describing lymph nodes in the neck, author used the following system which was developed by Memorial Sloan- Kettering Hospital, New York and adopted by the American Academy of Otolaryngology Head and Neck Surgery.[14]

- 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.

The data were subjected to statistical analysis using SPSS software package. Data was expressed as absolute numbers with or without percentages, as means with standard deviation or as medians with ranges.

RESULTS

Total 130 patients presented with cervical lymphadenopathy during the study duration. Infective etiology was the commonest (55, 42.31%) cause for the cervical lymphadenopathy followed by TB (50, 38.46%) (Figure 1).

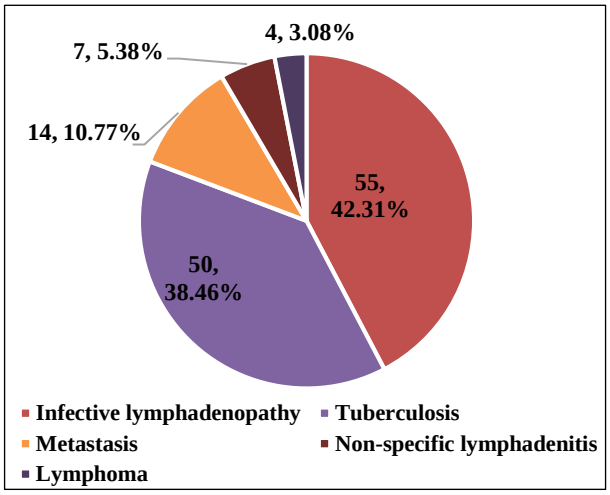

Figure 1: Type of cervical lymphadenopathy.

According to Table 1, the commonest age group affected by tuberculous cervical lymphadenopathy (TCL) was 20-35years (27, 54.00%) followed by 0-12years (10, 20.00%) and 13-19 years (8, 16.00%). The females (29, 58.00%) were more affected with TCL as compared to males (21, 42.00%) (Figure 2).

Table 1: Distribution of the patients with tuberculous cervical lymphadenopathy according to age.

Age groups (Years)	Frequency (%)
0-12	10 (20.00)
13-19	8 (16.00)
20-35	27 (54.00)
35-50	4 (8.00)
>50	1 (2.00)

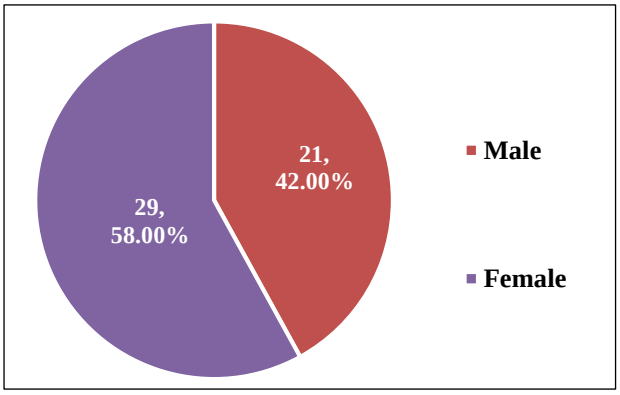

Figure 2: Distribution of the patients with tuberculous cervical lymphadenopathy according to gender.

Most of the patients (45, 90.00%) presented with complaint of the neck swelling. The patients were also present with other symptoms like, malaise (12, 24.00%), weight loss (12, 24.00%), fever (11, 22.00%), cough (7, 14.00%), discharging sinus (6, 12.00%) and hemoptysis (2, 4.00%) (Table 2).

Table 2: Symptomatology in patients with TCL.

Age groups (years)	Frequency (%)
Neck swelling	45 (90.00)
Malaise	12 (24.00)
Weight loss	12 (24.00)
Fever	11 (22.00)
Cough	7 (14.00)
Discharging sinus	6 (12.00)
Haemoptysis	2 (4.00)

A majority of the patients (45, 90.00%) had unilateral Tuberculous Cervical Lymphadenopathy (TCL), particularly more involvement of right side of cervical region (29, 58.00%). Commonly involved lymph node group was level V (26, 52.00%) followed by level III (12, 24.00%) and level VI (5, 10.00%) (Table 3). The ESR was raised in 45 (90.00%) patients and it was more than 30mm in the first hour in most of the cases. Associated chest lesions on radiography were evident only in 10 (20.00%) patients. Sputum for acid-fast bacilli was positive in 4 (8.00%) patients only. The size of the lymph node was reduced to less than 5mm within three months of starting full dose anti-tuberculous therapy (ATT) 32 (64.00%) patients. After six months 42 (84.00%) of them had reduction of size to less than 5mm. Other than excision biopsy (12 patients), no other type of surgery was needed in patients.

Table 3: Distribution of the patients with TCL according involvement to side and level of cervical region.

Side / Level			Frequency (%)
Side	Unilateral	Left	16 (32.00)
		Right	29 (58.00)
		Total	45 (90.00)
	Bilateral		5 (10.00)
Level	I		2 (4.00)
	II		2 (4.00)
	III		12 (24.00)
	IV		3 (6.00)
	V		26 (52.00)
	VI		5 (10.00)

DISCUSSION

Tubercular bacilli were discovered Robert Koch. Still today, tuberculosis (TB) is a major public health problem worldwide. TB is more prevalent in developing countries like India.[16] TB lymphadenopathy is the most common form of extrapulmonary TB. Cervical lymph nodes are the most common lymph nodes affected by TB.[17]

Total 130 patients presented with cervical lymphadenopathy during the study duration. Out of this total 130 patients, tuberculous cervical lymphadenopathy (TCL) was found in 50 (38.46%) patients. In a study done by Sharma SK et al, it was found that TB lymphadenopathy accounted for 35% of extra-pulmonary TB of which two-third have cervical lymph nodes.[18] Another study done by Sarda AK et al, reported very high incidence of TB lymphadenopathy (86%).[19] This could be due to good clinical screening of nodes. Other studies also reported similar incidence as of the present study-Jha BC et al, 63%, Castro DJ et al, 46% and Dandapat MC et al, 41.5%.[17,20,21]

The commonest age group affected by tuberculous cervical lymphadenopathy (TCL) was 20-35 years (27, 54.00%) followed by 0-12 years (10, 20.00%) and 13-19years (8, 16.00%). Jha BC et al, found the age of the patients ranged from 9months to 62years with the commonest age group affected was 11-20years (41.07%).[17] A study by Das B et al, showed that 15-24years was most commonly involved age group with 40% of cases.[22] Khajanchi M et al, in their study found

that TCL more commonly affects the young and middle aged adult group and its occurrence decreases as age advances.[23] But in another study done by Choudhury N et al, revealed the age of the patients ranged from 21years to 75years with a mean age of 40years.[24] Studies from Saudi Arabia and Nepal had their average age of patients with cervical lymphadenopathy between 36 and 39years.[25,26] The females (29, 58.00%) were more affected with TCL as compared to males (M:F ratio-1:1.38). Females more involvement in TCL was found in study done in Bangladesh by Kamal MS et al, Similar type of gender distribution for the TCL was found in different studies done by Jha BC et al in India (M:F ratio-1:1.3) and Tanwir F et al, in Pakistan (M:F ratio-1:5).[17,28] Inverse findings regarding gender distribution were also reported in studies done by Choudhury N et al, in UK (M:F ratio-1.75:1) and Magsi PB et al, in Pakistan (M:F ratio-1.33:1).[24,27,29]

A majority of the patients (45, 90.00%) had unilateral TCL, particularly more involvement of right side of cervical region. The unilateral neck swelling was also commonest (87.7%) finding in a study done by Kamal MS et al, Similar higher involvement was reported in the study done by Frontanilla JM et al, (85%) but much higher than Jha BC et al, (67.8%).[17,30]

Commonly involved lymph node group was level V (26, 52.00%) followed by level III (12, 24.00%) and level VI (5, 10.00%). The findings of involved lymph node groups in this study were consistent with the studies done by Magsi PB et al, (level V) and Chaudhary V et al, (level V).[27,29,31]

Anti-tuberculous chemotherapy is the mainstay in the management of TB lymphadenopathy.[4] The six months treatment may be sufficient for many patients but ultimate outcome is difficult to assess because of delayed response of medications in extra-pulmonary TB.[4] In the present study, the size of the lymph node was reduced to less than 5mm within three months of starting full dose anti-tuberculous therapy (ATT) 32 (64.00%) patients.

After six months 42 (84.00%) of them had reduction of size to less than 5mm. Other than excision biopsy (12 patients), no other type of surgery was needed in patients. In a study by Mohapatra PR et al, half of the patients (50.8%, 33) needed some form of surgical interventions.[4] Jha BC et al, successfully treated 56 patients with short course chemotherapy for six months where surgical management has played very minimal role.[17] But, surgery can increase the cure rate with excellent cosmetic result and a low complication rate.[4]

A major limitation of this study was small sample size, the study with bigger sample size is needed to generalize the findings of the present study. Another limitation of the study was not performing culture for mycobacterium due to lack of facilities. However, author depended mainly on clinical clues and other available investigations including FNAC.

CONCLUSION

Tuberculous cervical lymphadenitis usually presents with unilateral, multiple, neck swelling in young adults. Though, anti-tuberculous chemotherapy is the mainstay of treatment for TCL, surgical treatment is more useful in selected cases. In this regard, early diagnosis and treatment are critical in lowering the overall prevalence. Therefore, it is important that surgeons are aware of tuberculosis in the head and neck region. If the surgeons maintain a high index of suspicion, an early diagnosis can be made with the help of simple investigations and subsequently patients can be successfully managed without delay.

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

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