

A clinical review of presentation and diagnosis of cervical lymphadenopathy and its relationship neck tuberculosis: Retrospective study at a Teaching Hospital

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Abstract

Objective: To analyze the frequency and diagnosis of tuberculosis in cervical lymphadenopathy in a tertiary care hospital

Material and Methods: This descriptive study was carried out from July 2016 to July 2019 in the ENT and Head & Neck Surgery department, Kuwait Teaching Hospital Peshawar. Patients with enlarged cervical lymph nodes for more than four to six weeks duration and over 12-years of age were considered. FNAC, Chest X-ray, complete blood picture/erythrocyte sedimentation rate was performed in all patients while excisional biopsy was performed on patients in whom FNAC showed in-conclusive results. Sputum analysis was performed on patients whose FNAC and excisional biopsy showed cervical tuberculosis.

Results: 149 patients were studied, of which 96 (64.42%) were males and 53 (35.58%) were females age between 12 to 65 years old. Mean age was 35.2+16.6 years. 52 (34.89%) patients had single lymph node enlargement and bilateral multiple lymph nodes were involved in 33 (22.14%) patients. 46 (30.87%) had matted lymph node and infected lymph node were present in 18 (12.08%) patients. Family history of pulmonary tuberculosis were positive in 17 (10.06%) patients. 62 (41.61%) patients were from Kashmir, 55 (36.91%) were from KPK and from Punjab 32 (21.47%) cases. Constitutional symptoms were present in 43 (28.83%) cases.

Conclusion: Diagnosing tuberculosis lymphadenopathy requires a high index of suspicion. The disease is more common in young-middle age group. FNAC is easily available and a relatively uncomplicated way to diagnose tuberculous cervical lymphadenopathy however a negative result does not exclude the diagnosis. Excisional biopsy can be performed to establish a diagnosis. Patients who have TB of head and neck must be investigated to exclude pulmonary tuberculosis.

Keywords: Cervical lymphadenopathy, tuberculosis of head and neck, FNAC, excisional biopsy, pulmonary tuberculosis

Introduction:

Mycobacterium tuberculosis has been present in human populations since ancient times. It is prevalent in almost every part of the world. The World Health Organization (WHO) declared TB a global health emergency in 1992.¹ In Pakistan the diagnosed number of TB cases increased from 20,707 in 2001 to 267,912 in 2010 making Pakistan a high burden disease area.²

TB lymphadenitis is the most common form of extra pulmonary TB (EPTB).³ It remains a

diagnostic and therapeutic challenge because it mimics multiple pathologies like lymphoma and metastases. Epidemiology and diagnostic aspects of extra pulmonary TB (EPTB) vary according to the patients' geographic origin and the burden of TB and HIV infection.⁴ EPTB includes skin and soft tissue tuberculosis (which mainly involve cervical lymph node), bony tuberculosis, abdominal tuberculosis and intracranial tuberculosis.

The extra pulmonary manifestations of TB are

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Table 1: Demographic details of the patients (No=149)

Characteristics	Number of Patients (%)	Mean/Ratio
Gender		
Male	96 (64.4%)	
Female	53 (36%)	
Age Ranges		Mean age = 35.2 + 16.6
12 – 25 years	47 (31.5)	
26 – 50 years	59 (39.5)	
51 – 65 years	43 (28.8)	

Table 2: Characteristics of lymphadenopathy (No=149)

Diagnosis	Number of Patients (%)
Reactive hyperplasia	49 (32.88)
Tuberculous cervical lymphadenopathy	39 (26.17)
Metastasis to cervical lymph nodes	35(23.48)
Lymphoma	14(9.39)
Benign lesion	12(8.05)
Region involved	
Posterior triangle	57 (38.25)
Submandibular	42 (28.18)
Supra-clavicular	39 (26.17)
Supra clavicular	6 (4.02)
Submental node	5 (3.35)
Lymph node Characteristics	
Single lymph node	52(34.89)
Matted	46(30.87)
Bilateral lymph node	33(22.14)
Infected lymph node	18(12.08)

prevalent in 10-34% of non-HIV cases while it occurs in 50-70% of patients co-infected with HIV.⁵ The incidence of all forms of TB is decreasing globally however the rate is not similar in all regions. Tuberculous cervical lymphadenopathy and other infectious etiology are prevalent in countries like Nigeria and the tropical areas, where TB remains the predominant cause of chronic lymph node enlargement.⁶⁻⁸ In developed countries malignancies are documented as the major cause of lymph node enlargement.⁹ Several studies on cervical lymphadenopathy have been done in Pakistan with varying results however chronically enlarged cervical lymph nodes continue to pose a diagnostic dilemma to physicians and surgeons.

Material and Methods:

This descriptive study was carried out from July 2016 to July 2019 in the ENT and Head & Neck Surgery department, Kuwait Teaching Hospital, Peshawar. Following a detailed history and clinical examination, patients with 4-6 weeks history of enlarged cervical lymphnode, more than 12-years of age and in whom we did not find any obvious cause of lymphadenopathy were enrolled in the study. FNAC, chest X-ray, complete blood picture and erythrocyte sedimentation rate was performed in all patients while excisional biopsy was performed in patients whose FNAC showed in conclusive results. Sputum analysis was performed in all those patients whose FNAC and excisional biopsy showed cervical tuberculosis.

A diagnosis of tuberculosis was confirmed by demonstration of epitheloid giant cell and caseation necrosis on histopathological examination. Statistical analysis was done using SPSS version 17.

Results:

149-patients were included in the study, of which 96 (64.42%) were males and 53 (35.58%) were females age between 12 to 65 years old. Mean age was 35.2+16.6 years. (Table1). 52 (34.89%) patients had single lymph node enlargement and bilateral multiple lymph nodes were involved in 33 (22.14%) patients. 46 (30.87%) had matted lymph node and infected lymph node were present in 18 (12.08%) patients. Family history of pulmonary tuberculosis were positive in 17 (10.06%) patients. 62 (41.61%) patients were from Kashmir, 55 (36.91%) were from KPK and from Punjab 32 (21.47%) cases. Constitutional symptoms (fever, sweats, weight lose and cough) were present in 43 (28.83%) cases.

The posterior triangle was the most common site of lymphadenopathy with 57 (38.25%) patients, followed by submandibular region 42 (28.18%) patients. Upper deep cervical-lymphadenopathy in 39 (26.17%) patients; supraclavicular region was involved in 6 (4.02%) patients and 5 (3.35%) patients had involvement of sub mental lymph nodes. FNAC results

showed 31 (20.42%) patients had tuberculosis cervical lymphadenopathy. Reactive hyperplasia was found in 47 (31.54), metastasis to cervical lymph nodes in 39 (26.17), lymphoma in 14 (9.39%), benign lesion in 8 (5.36 %) and 14-patients showed inconclusive results. X-ray chest showed positive finding for tuberculosis in 15-patients. Excisional biopsy showed positive for tuberculosis in 8-patients. Sputum analysis was positive in 7-patients. ESR was raised in 42-patients.

Discussion:

Tuberculosis is an important public health problem and is the commonest infectious disease affecting the lymphoid tissue.¹⁰ Cervical lymphadenitis is the most common head and neck manifestation of mycobacterium infections. It could be the manifestation of systemic tuberculosis or a distinct clinical entity localized to neck.¹¹ Cervical lymphadenopathy is a manifestation of a spectrum of diseases ranging from benign to malignant,⁸ thus requiring invasive diagnostics tests for an accurate diagnosis.

In our study 39-patients were having cervical lymph node tuberculosis diagnosed, 31 were diagnosed on FNAC and 8 were diagnosed on excisional biopsy. This is consistent with a study which were conducted in Nigeria among 357-clinically suspected cases, 133 (39.6%) were confirmed as tuberculosis lymphadenitis by fine-needle aspiration (FNA).¹² One local study reported an incidence of tuberculosis to be 57.2%.¹³

Choudary reported that of all the tuberculosis patients, 58% had cervical adenitis at presentation.¹⁴ Another study showed an incidence of tuberculosis lymphadenitis to be 36%, however tuberculosis was the major cause of lymphadenopathy in their study as well. A study conducted in London showed the cervical tuberculosis ratio 9.45%, most of patients in this study were diagnosed by FNAC.¹⁵ This value is much lower than our study. This disparity may be due to the fact that UK is considered the least prevalent area for tuberculosis (WHO) and majority of positive cases for tuberculosis are immigrants.

In our study 31-patients diagnosed on FNAC and only 8-patients whom FNAC none conclusive diagnosed on excisional biopsy. London and Nigerian studies also used the same diagnostic tool.^{12,15} The ratio of male to female is 2.4:1 with the majority of the patients between 26-50 years. Similar findings were also reported in a local study.¹⁶ In one study the commonest age group affected was 11-20 years. Co existing pulmonary tuberculosis were present in 20% patients and associated symptoms like fever night sweats and weight loss were present in 29% patients.

Tuberculosis lymphadenitis has a broad spectrum of presentation; from solitary to multiple lymph node site involvement, which may be matted or discrete. They may involve any group or may present as a cold abscess or discharging sinus. This spectrum was also observed in this study. Most of the patients in our study had matted lymph nodes (30.87%). In our study single group of lymph nodes was involved in 34% of patients, bilateral lymph node involvement was present in 22% and 12% patients presented as infected lymph nodes. Family history of tuberculosis was positive in 11% cases. These facts are also supported by another study.³ In our study 39/149 patients were diagnosed with cervical lymph node TB and 17/39 patients were diagnosed with pulmonary TB.

Thickly populated areas, lack of awareness, late presentation, low socioeconomic status, non-compliance, drug resistance, administration of sub-standard drugs, inadequate and irregular drug supply are responsible for increased number of tuberculosis cases while in the western world, they are facing this dilemma due to immigrants from developing countries and immune deficiency syndrome.¹⁵

Conclusion:

In cervical lymphadenopathy tuberculosis is relatively more common in the younger population. To diagnose cervical tuberculosis requires a high index of suspicion. Fine needle aspiration cytology (FNAC) is an easy and uncomplicated way to diagnose TB. It's an internationally rec-

ognized tool for diagnosis cervical tuberculosis but a negative result doesn't exclude the diagnosis. Excisional biopsy can be tried in these cases to establish a diagnosis. Patients diagnosed with TB of head and neck should be investigated for pulmonary and systemic TB.

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Role and contribution of authors:

Dr. Farhan Salam, collected the data, references and did the initial writeup of the article.

Dr Ejaz Ahmad, collected the references and helped in introduction writing.

Dr Shahid Ullah Ahmad, collected the data and helped in discussion writing.

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