ORIGINAL ARTICLE

EXTRAPULMONARY CERVICAL TUBERCULOUS LYMPHADENOPATHY: MORE COMMON THAN WE THINK — A TERTIARY CARE HOSPITAL EXPERIENCE

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ABSTRACT

Background: TB can affect virtually any organ of the body and can be pulmonary or extrapulmonary. Extrapulmonary tuberculosis accounts for 20% of all TB cases with lymph nodes being the most common site of occurrence. The objective of this study was to determine the frequency of extrapulmonary tuberculosis in patients presenting with cervical lymphadenopathy.

Material & Methods: This was a descriptive study conducted at Department of Thoracic Surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences, Karachi, Pakistan from December 2012 to April 2015. All patients who presented with cervical lymphadenopathy which was not secondary to acute ear, nose, throat or dental infection or enlarged thyroid swellings/mass were included in the study. After informed consent, history, physical examination, ultrasonography of neck and FNAC were performed in all patients. Those patients in which FNAC failed to confirm the diagnosis, underwent lymph node biopsy

Results: A total of 491 patients, including 322(65.5%) females and 169(33.5%) males were studied. The mean age of patients was 33.8 years. All the patients complained of neck swelling followed by fever in 248(50.4%) and cough in 172(35.1%). Regarding the mode of diagnosis 310(63.2%) patients were diagnosed on FNAC, 112(22.8%) on excisional and 69(14%) on incisional biopsy. Among these 363(74.1%) patients were diagnosed with tuberculosis. Reactive hyperplasia was the next common diagnosis in 50(10.3%) patients.

Conclusion: Tuberculosis is the commonest cause of cervical lymphadenopathy in developing countries and should be investigated in every case of cervical lymphadenopathy with FNAC and/or biopsy.

KEY WORDS: Reactive hyperplasia; Lymphadenopathy; Extrapulmonary tuberculosis.

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INTRODUCTION

According to WHO, about nine million people contract tuberculosis annually and nearly two million are killed by the disease.[1] Pakistan currently ranks 5th amongst the countries with highest burden of tuberculosis (TB). It also has the 4th highest burden of Drug Resistant TB globally. The estimated annual incidence of TB is 342/100,000, and there are about 420,000 new cases annually.[2] The propagation of tuberculosis is directly proportional to the socio-economic and hygienic conditions of human populations; Pakistan, India and Bangladesh seem to be the worst affected with almost half of their population reported to be tuberculosis infected.[3]

TB can affect virtually any organ of the body and can be intrapulmonary or extrapulmonary. Extra pulmonary tuberculosis (EPTB) accounts for 20% of all TB cases with lymph nodes being the most common site of occurrence.[4] Tuberculous lymphadenitis presents as an enlarging, painless mass in a lymphatic area. The frequency of EPTB in patients with cervical lymphadenopathy is 78.63%.[5] Other common causes of cervical lymph node enlargement

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include reactive hyperplasia, lymphomas, sarcoidosis, and lymphadenopathy secondary to malignancy. The objective of this study was to determine the frequency of extrapulmonary tuberculosis in patients presenting with cervical lymphadenopathy.

MATERIAL AND METHODS

This prospective descriptive study was conducted at Department of Thoracic Surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences, Karachi, Pakistan from December 2012 to April 2015.

A total of 491 patients were included in the study. Patients of either gender, over the age of 12 years, who presented to the outpatient department with a neck swelling were enrolled in the study. Patients with enlargement of the thyroid gland, lymphadenopathy secondary to acute ear, nose, throat or dental infection were excluded from the study. We also excluded patients who presented with neck swelling but had already been diagnosed with tuberculosis and were on ATT treatment at the time. After obtaining informed consent, a thorough history and physical examination was performed. In all patients, ultrasound of the neck swelling was done to confirm that the swelling was a lymph node and to rule out vascular or thyroid related swelling. After confirmation, FNAC was performed in all patients. Those patients in whom the diagnosis was not confirmed with FNAC, biopsy of the lymph node was performed. Diagnosis of tuberculosis was confirmed on finding typical granulomas comprising of lymphocytes, Langhans type giant cells with or without caseation.

RESULTS

A total of 491 patients were enrolled in the study. Among these 169(33.5%) were males and 322(65.5%) females with a male to female ratio of 1:1.9. The mean age was 33.8 years with the age range of 14 to 80 years. (Fig. 1) All patients complained of neck swelling. Fever was the next common symptom reported in 248(50.4%) patients, followed by cough in 172(35.1%), fatigue in 139(28.5%), weight loss in 133(27.1%), anorexia in 97(19.7%), discharging sinus in 39(8.03%) and drenching night sweats in 59(12%) of the patients. (Table 1)

Regarding the mode of diagnosis 310(63.2%) patients were diagnosed on FNAC, 112(22.8%) on excisional biopsy and 69(14%) on incisional biopsy. Tuberculosis was the most common diagnosis with 363(74.1%) of the patients while reactive hyperplasia was the next common diagnosis in 50(10.3%) patients. Other diagnoses included lymphoma in 44(8.9%) patients, malignancy (primary or secondary) in 28(5.8%) patients and sarcoidosis in 6(1.2%) patients. (Fig. 2)

Table 1: Symptoms of patients with cervical lymphadenopathy (n=491).

Variable	Number	Percentage
Neck swelling	491	100%
Fever	248	50.4%
Cough	172	35.1%
Weight loss	133	27.1%
Anorexia	97	19.7%
Fatigue	139	28.5%
Discharging sinus in the neck	39	8.03%
Night sweats	59	12%

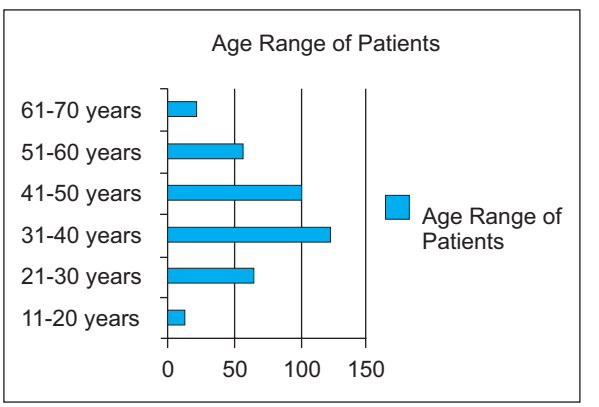

Figure 1: Age range of patients with cervical lymphadenopathy (n=491).

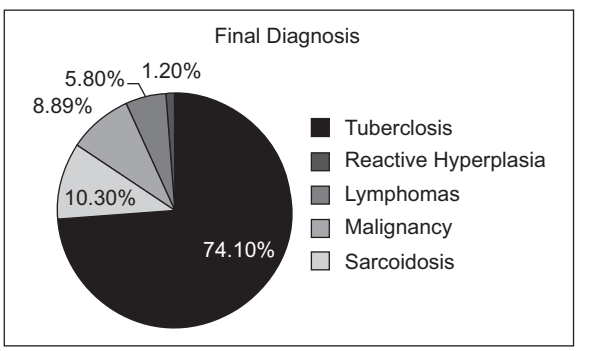

Figure 2: Final diagnosis of patients with cervical lymphadenopathy (n=491).

DISCUSSION

Tuberculosis, "Captain of all the men of death" as referred to by John Bunyan in 18th century is still the biggest health challenge of the modern world. Ex-

trapulmonary tuberculosis most commonly presents in the cervical region although axillary and inguinal sites have also been reported. According to some studies, however, the pleura is considered to be the commonest site for EPTB.[6,7] In a study by Rajaskaran et al[8] from India, tuberculosis was detected in 77.3% of the patients with cervical lymphadenopathy rendering it the most common diagnosis. This is in conjunction with the results of our study in which tuberculosis was the most common cause of cervical lymphadenopathy in 74.1% of patients.

TB can affect young and old alike but the mean age is reported to be between 30-40 years as suggested by studies from USA and South Africa.9,10 The mean age of our patients was 32 years. In a developing country like Pakistan, tuberculosis affects women more commonly than men. The reason for this female predominance could be explained by various socioeconomic factors like female illiteracy, female economic dependency and poor access to healthcare among the female population. In a study conducted by Fazal-i-Wahid et al[11] from Pakistan to demonstrate the association between TB and body mass index, the female to male ratio was 1.65:1. Our study revealed similar results with 65.5% of TB patients being females and male to female ratio 1: 1.9.

Patients with tuberculous cervical lymphadenitis are usually asymptomatic but may report fever, neck swelling, weight loss, cough and/or a discharing sinus in the neck. A study by Karim et al[12] from Bangladesh showed that fever was the most common symptom followed by cough. Patients in our study commonly reported neck swelling in all patients, fever in 50.4% and cough in 35.1% of patients.

Though there are many diagnostic modalities, the diagnosis of tuberculous lymphadenitis still faces many challenges. Diagnosing extrapulmonary TB is difficult, especially when clinical presentation is suggestive but bacteriological proof is lacking. The diagnosis confirmed by acid-fast bacilli (AFB) using conventional microscopy is simple and rapid but lacks sensitivity whereas culture is more sensitive and specific but takes several weeks to get the results.[13] FNAC is a quick, minimally invasive, and cost-effective technique for the diagnosis of granulomatous diseases.[14] In the developing countries where tuberculosis is common and other granulomatous diseases are rare, the presence of granulomatous features on FNAC is highly suggestive of tuberculosis. In our study, the yield of FNAC was 63% whereas in studies by Fazal-i-Wahid et al[11] and Panchal et al[15], yield of FNAC was reported at 86% and 46% respectively. Biopsy is the most invasive approach to diagnosis however, it has the highest yield and may produce a more rapid and favorable symptomatic response and has been recommended in cases involving multiple nodes.[16]

The classical picture of histopathology of the lymph nodes is a granulomatous lesion with caseous necrosis and numerous epitheloid cells, lymphocytes, plasma cells, and fibroblasts and Langerhans type of multinucleated giant cells.[16] The two histological features which specifically point towards the diagnosis of tuberculosis are variation in the size of the granulomata and the presence of caseation necrosis. The histological differential diagnosis is granulomatous lymphadenitis due to sarcoidosis, foreign body granuloma or fungal infection which should be ruled out via appropriate diagnostic techniques.

CONCLUSION

Tuberculosis is the commonest cause of cervical lymphadenopathy in the developing countries and should be investigated in every case of cervical lymphadenopathy with FNAC and/or biopsy.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

Conception & Design:	NHS, AAZ, JN, MF, US
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