FREQUENCY OF TUBERCULOSIS IN CERVICAL LYMPHADENOPATHY

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ABSTRACT

Objective: *To determine the proportion of tuberculosis in patients presenting with cervical lymphadenopathy.*

Methodology: *This descriptive study was carried out from June 2007 to May 2010 in the Ear, Nose and Throat department, District Headquarters Hospital (DHQ) Lakki Marwat. Patients with enlarged cervical lymph nodes for more than six weeks duration, of either sex and of any age were approached for inclusion into the study. Out of 110, 20 were excluded as the cause was found to be acute inflammation in the throat. Ninety patients were included in the study. After a detailed history and clinical examination, excisional biopsy of the lymph nodes was performed in all these patients.*

Results: *Of 90 patients, 62 (68.9%) were males and the majority of patients had ages from 12-40 years. Tuberculous cervical lymphadenopathy was diagnosed in 67(74.5%) patients, reactive hyperplasia in 10 (11.1%), metastasis to cervical lymph nodes in 6 (6.7%), lymphoma in 4 (4.4%) and Kikuchie's lymphadenitis in 3 (3.3 %) cases. About 72 (80%) of the patients had involvement of multiple lymph nodes while 18 (20%) had single swelling. Sixty three (70%) of the patients had matted lymph nodes whereas discrete lymph nodes were found in only 18 (20%) cases.*

Conclusion: *Tuberculosis is the commonest cause of cervical lymphadenopathy, with the majority of these patients having multiple lymph node involvement. Disease is more common in the younger age group and the group of lymph nodes most frequently affected is posterior cervical group.*

Key Words: *Cervical lymphadenopathy, Tuberculosis, Excisional biopsy.*

This article may be cited as: Ismail M, Muhammad M. Frequency of tuberculosis in cervical lymphadenopathy. J Postgrad Med Inst 2013; 27(3):342-6.

INTRODUCTION

Chronic cervical lymph node enlargement signifies an underlying disease, frequently posing a diagnostic dilemma to the physician. Western studies about the cervical lymphadenopathy are not directly relevant because what is a rarity in the West is a common problem in our country[1,2]. Despite the decline of pulmonary tuberculosis in western world, the incidence of tuberculous lymphadenitis has remained the same in Pakistan[3].

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Date Received: September 05, 2012
Date Revised: April 28, 2013
Date Accepted: May 10, 2013

Lymphadenitis is the most common extrapulmonary manifestation of tuberculosis[4]. It remains a diagnostic and therapeutic challenge because it mimics other pathologic processes like lymphoma and metastases from head and neck malignant tumours. The most common presentation of tuberculous lymphadenitis is neck swelling, followed by fever, cold abscess, non-healing ulcer, discharging sinus and weight loss.[5]

A complete history and physical examination, staining for acid-fast bacilli (AFB), fine needle aspiration cytology (FNAC) and excisional biopsy enable early diagnosis[6]. To confirm the histopathological diagnosis, an excision biopsy should be performed on the palpable and largest and most firm

node, with the node fully excised and the capsule intact[7].

The objective of this study was to determine the proportion of tuberculosis in patients presenting with cervical lymph node enlargement.

METHODOLOGY

This descriptive study was undertaken at the Ear, Nose and Throat (ENT) department, District Headquarter Hospital Lakki Marwat from June 2007 to May 2010. Patients with enlarged cervical lymph nodes for more than six weeks duration, of either sex and of any age were approached for inclusion into the study. Out of 110, 20 were excluded as the cause was found to be acute inflammation in the throat. Ninety patients were included in the study. Written informed consent for recruitment into the study was obtained from all patients.

Detailed history and physical examination were performed as part of routine clinical care. Lymph nodes were examined for site, size, number, whether matted or discrete, presence of tenderness, consistency, and their relation to underlying structures. Relevant investigations were carried out in all cases including screening for Hepatitis B and Hepatitis C infection, complete blood picture, erythrocyte sedimentation rate (ESR) and chest x-ray. Excision biopsy was performed.

In case of cold abscess, the biopsy was taken from the wall of the lymph node. A diagnosis of tuberculosis was confirmed by demonstration of epitheloid granulomas with caseation necrosis on histopathological examination. Statistical analysis was done using SPSS version 12.

RESULTS

Out of 110, 90 patients were included in the study, of which 62 (68.9%) males and more than 50% of the patients were aged between 12-40 years. Mean age was 35.2+16.6 years. Family history of tuberculosis was positive in 25 (27.8%) cases and a BCG vaccination scar was found in 58 (64.45%) patients (Table 1). Excision biopsy was done in all study cases. ESR was raised in 54 (60%) patients with tuberculous cervical lymphadenopathy. X-ray chest with positive lesions was found in only 20 (22.2%) patients.

Tuberculous cervical lymphadenopthy was the most common histological dianosis in 67 (74.5%) patients followed by reactive hyperplasia in 10 (11.1%) patients [Table 2]. The posterior triangle was the most common site of lymphadenopathy in 45 (50%) patients, followed by upper deep cervical in 28 (31.1%) and submandibular region in 8 (8.9%) patients.

A single lymph node group was involved in 54 (60%) patients and more than 2 lymph node groups were involved in 11 (12.2%) patients. In 61 (67.8%) cases, there were matted lymph nodes, whereas 16 (17.8%) of the patients were having discrete lymph nodes. Cold abscess were present in 10 (11.1%) cases (Table 2).

Table 1: Demographic details of the patents (n=90)

Characteristics	Number of Patients (%)	Mean/Ratio
Gender		
Male	62 (68.9)	Male to female ratio = 2.44: 1
Female	28 (31.1)	
Age ranges (in years)		
10 – 20 years	24(26.7)	Mean age = 35.2 $\pm$ 16.6
21 – 30 years	30 (33.3)	
31 – 40 years	20 (22.2)	
41 – 50 years	8 (8.9)	
51 – 60 years	5 (5.5)	
61 – 70 years	3 (3.4)	
History findings		
BCG vaccination	58 (64.5)	-
History of TB in family	25 (27.8)	

Table 2: Aetiology and characteristics of lymphadenopathy (n=90)

Diagnosis	Number of patients (%)
Tuberculous cervical lymphadenopathy	67 (74.5)
Reactive hyperplasia	10 (11.1)
Metastasis to cervical lymph nodes	6 (6.7)
Lymphoma	4 (4.4)
Kikuchie's lymphadenitis	3 (3.3)
Region involved	
Posterior triangle	45 (50.0)
Upper deep cervical	28 (31.1)
Submandibular	8 (8.9)
Supra-clavicular	5 (4.6)
Submental	2 (2.2)
Lower deep cervical	2 (2.2)
Number of lymph node groups*	
Single	54 (60.0)
2	25 (27.8)
> 2	11 (12.2)
Lymph node Characteristics	
Discrete	61 (67.8)
Matted	16 (17.8)
Cold abscess	10 (11.1)
Discharging sinus	3 (3.3)

* One Sample t-Test, critical t = 3.176.

DISCUSSION

Tuberculosis is an important public health problem and it is commonest infectious disease affecting the lymphoid tissue of the body[8]. Cervical lymphadenitis is the most common head and neck manifestation of mycobacterial infections. It may be the manifestation of a systemic tuberculous disease or a distinct clinical entity localized to neck[5], and is a frequent form of extrapulmonary tuberculosis. Cervical lymphadenopathy is a manifestation of a spectrum of diseases ranging from benign to malignant[8], thereby requiring invasive diagnostics procedure for proper diagnosis.

In our study 74.5% patients were having cervical lymph node tuberculosis diagnosed on excisional biopsy. This is consistent with a study in which among 147 clinically suspected cases, 107 (72.8%) were confirmed as tuberculous lymphadenitis by fine-needle aspiration (FNA) cytology and acid-fast bacillus (AFB) smear examination.[10] One local study[11] reported that 70% of patients had tuberculous infection diagnosed on the basis of either FNAC or excisional biopsy while another study[12] reported an incidence of tuberculosis to be 57.2%.Choudaryet al.[13] reported that all of the tuberculous patients they studied, 58% had cervical adenitis at presentation. Another study showed an incidence of tuberculous lymphadenitis to be 36%, although tuberculosis had been the major cause of lymphadenopathy in their study as well but values reported were less than those of our study. This disparity may be due to differences in patient selection and local referral pattern[14]. Our study also found very similar findings to a study conducted in Kathmandu[15].

The ratio of male to female is 2.4:1 with the majority of the patients between 12-40 years. Similar findings were also reported in a local study[16]. In one study the commonest age group affected was 11 - 20 years and constitutional symptoms were not present in most of the patients[17]. Whilst more female involvement was reported in a study from India[18], male preponderance is also reported in other studies [19, 20]. These differences in results may be due to several factors including treatment seeking behavior, social and cultural background and financial status of patients.

Tuberculous lymphadenitis has a broad spectrum of presentation; from solitary to multiple lymph node site involvement, which may be matted or discrete and may involve any group or may present as a cold abscess or discharging sinus. This spectrum was observed in this study as well as other stud-

ies[21, 22]. Most of the patients in our study had matted lymph nodes and this was also seen in another study[23]. In our study posterior cervical lymph nodes were most commonly involved (50%), followed by submandibular lymph nodes (31%), and this finding is also supported by a study from Kathmandu,in which posterior cervical lymph nodes were affected in 42% cases followed by upper deep cervical 16% and submandibular lymph nodes in 15% cases.[15] In a local study out of 200 cases, 150 (75%) patients had involvement of posterior group of cervical lymph nodes, whilst submandibular lymph nodes were the 2nd most common affected site in the neck.[16] These findings were contrary to those of Dandapat et al in which the most common group affected was upper deep jugular followed by jugulodigastric node[24].

In our study single group of lymph nodes was involved in 60% of patients, 2 groups in 27.3% and >2 groups in 12.7% of patients. Family history of tuberculosis was positive in 27.8% cases; BCG vaccination was done in 64.45% cases. These facts are also supported by another study[17].

CONCLUSION

Tuberculosis is still the commonest cause of cervical lymph node enlargement in our setting in Pakistan, usually involving multiple lymph nodes. Disease is relatively more common in the young to middle aged. Lymph node excision biopsy is a well-established diagnostic procedure practiced worldwide and is the mainstay of diagnosis in many centers especially in periphery where fine needle aspiration cytology (FNAC) is not yet established as a routine diagnostic procedure. Excision biopsy is the diagnostic procedure of choice but it is imperative that this does not result in diagnostic delay.

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CONTRIBUTORS

MI conceived the idea, planned and wrote the manuscript of the study. MM helped in the write-up of the manuscript and necessary revisions. All the authors contributed significantly to the research that resulted in the submitted manuscript.