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Tuberculous and Nontuberculous Cervical Lymphadenitis: A Clinical Review

Objective:

To observe whether there are any differences in clinical characteristic between tuberculous and nontuberculous lymphadenitis and to evaluate the importance of fine needle aspiration cytology (FNAC) in the management of tuberculous cervical lymphadenitis.

Materials & Methods:

A prospective study was carried out among 100 patients of cervical lymphadenitis in ENT department of National Academy of Medical Sciences, Bir Hospital, Kathmandu. The study period was from 15 June 2009 to 15 June 2010.

Results:

There were 52 male and 48 female. The age ranged from 9 to 63 years. Posterior triangles were found to be the most common involved site. The incidences of constitutional symptoms, like malaise, anorexia, weight loss and fever were similar between the two groups. Thirty nine patients were diagnosed as tuberculous lymphadenitis by FNAC, 53 patients diagnosed as reactive lymphadenitis and no definitive diagnosis were made for 8 patients. The excisional biopsy reported 42 patients as tuberculous lymphadenitis, 56 were diagnosed as reactive lymphadenitis and two patients were diagnosed as Non Hodgkin's Lymphoma. In this study sensitivity and specificity of FNAC in the diagnosis of the tuberculous lymphadenitis were 85.71% and 94.82% respectively.

Conclusion:

Patients with tuberculous and non tuberculous lymphadenitis had similar clinical features and hence were difficult to differentiate clinically. FNAC is a highly specific tool in the diagnosis of tuberculous lymphadenitis.

Keywords:

Tubercular cervical lymphadenitis, fine needle aspiration cytology, biopsy, histopathological examination.

INTRODUCTION:

Tuberculosis is one of the leading causes of death in adults in Nepal. About 10,000 adults die of tuberculosis each year in Nepal. More than 50,000 new cases are reported every year in Nepal.¹ Tuberculous lymphadenitis continues to be a major health problem in our country. In patient with cervical lump, tuberculosis remains a common cause. Tuberculous cervical lymphadenitis is commonly encountered in clinical practice. It is one of the commonest manifestations of extrapulmonary tuberculosis.² Tuberculous lymphadenitis is the most common extrapulmonary form of tuberculosis and cervical lymph nodes are the most commonly affected group of nodes.³

Differentiation between tubercular and inflammatory causes of lymphadenitis is important, because the treatments are different. However, definitive diagnosis require either a time consuming mycobacterial cultures or an invasive excisional lymph node biopsy both of which can result in delay in the diagnosis and institute of appropriate therapy.⁴ In the present study, we tried to observe whether there are any differences in clinical characteristic between tuberculous and nontuberculous lymphadenitis and to evaluate the importance of FNAC in the management of tuberculous cervical lymphadenitis.

METHODS:

A prospective study was carried out among 100 patients of cervical lymphadenitis in ENT department of National Academy of Medical Sciences Bir Hospital, Kathmandu. The study period was from 15 June 2009 to 15 June 2010. History was taken and details ENT and systemic examination was done. All the patients were sent for the FNAC examination to the Pathology Department. Patients were divided in two groups as tuberculous lymphadenitis (group A) and nontubercular lymphadenitis (group B). The demographic characteristics such as age, sex, address, signs and symptoms such as fever, anorexia, weight loss, night sweats, and local pain, clinical findings, tenderness and number, site of nodes and results of hematological and cytological investigations were compared between the two groups. All these 100 patients were subjected for the excisional biopsy and their histopathological findings were noted and compared with the FNAC findings.

RESULTS:

There were 53 male and 47 were female. The age ranged from 9 to 63 years. There were no significant differences in sex and age distribution (Table-1). Posterior triangle were found to be the commonest involved site (43%) followed by upper deep cervical (18%), submandibular

(13%), supraclavicular (13%), lower deep cervical (11%) and preauricular (2%). The lymph nodes were unilateral in 77% cases and bilateral in 13% cases. The incidences of constitutional symptoms, like malaise, anorexia, weight loss, and fever were similar between the two groups as shown in Table-2. Hemoglobin, total white blood cell count, and differential count values were compared and found to be similar between the two groups. X-ray chest revealed parenchymatous lesion in 14% cases. The mantoux test was positive in 32 cases.

Thirty nine patients were diagnosed as tuberculous lymphadenitis by FNAC showed caseating necrosis and epitheloid granuloma, 53 patients diagnosed as reactive lymphadenitis and no definitive diagnosis were made for 8 patients (Table-3). The excision biopsy revealed 42 patients as tuberculous lymphadenitis with caseous necrosis and epitheloid granuloma and 56 were diagnosed as reactive lymphadenitis. Two patients were diagnosed as Non Hodgkin's Lymphoma. Out of the 39 patients, who were diagnosed tubercular lymphadenitis by FNAC, 36 patients showed caseating necrosis and epitheloid granuloma on the histopathological examination and remaining 3 patients showed reactive lymphadenitis. While 2 patients who were diagnosed as reactive lymphadenitis by FNAC were found to be tubercular on histopathological examination. Four patients, for whom no definitive diagnosis was made by FNAC, were diagnosed as tuberculous on histopathological examination. In this study, sensitivity and specificity of FNAC in the diagnosis of the tuberculosis were 85.71% and 94.82% respectively.

Table: 1. Age and Sex distribution

Age	Male	Female	Total
0-10 yrs	03	01	04
11-20 yrs	11	10	21
21-30 yrs	17	14	31
31-40yrs	09	11	20
41-50 yrs	08	07	15
51-60yrs	05	03	08
61-70 yrs	0	01	01
Total	53	47	100

DISCUSSION:

Cervical lymphadenitis has many etiological factors. In the regions where tuberculosis is endemic, tuberculous infection is a common cause. Male to female ratio is found to be minimal in both tubercular

Table 2. Clinical signs and symptoms of study patients with tuberculous and non tuberculous lymphadenitis

Sign or Symptoms	Group A	Group B
Pain (%)	38	42
Tenderness (%)	34	44
Fever (%)	0	7
Anorexia (%)	2	0
Weight loss (%)	2	0
Multiple Nodes (%)	67	56

Table 3. Results of fine needle aspiration cytology

Findings	Group A	Group B
Caseating necrosis+ epitheloid granuloma	39	
Reactive lymphadenitis		53
Non diagnostic		08
Total	39	61

and nontubercular lymphadenitis with no obvious preponderance as in other studies like Dandapat et al⁵, Bezabih et al⁶ and Pandit et al.⁷

The definitive diagnosis of tuberculous cervical lymphadenitis had traditionally been difficult. In literature and textbooks patients with tuberculous lymphadenitis were often described as having nodes that were painless and matted, in addition to constitutional symptoms of fever, malaise, weight loss and night sweats.⁸ There are also no significant difference in terms of local and constitutional profile. This study showed that the classical picture of "scrofula" is no longer seen now-a-days and can probably be explained by the earlier presentation of the disease.⁹

In our study, posterior triangle group of node was most commonly affected in tubercular lymphadenitis in comparison to nontubercular lymphadenitis. Similar result was reported by Prasad et al¹⁰, Baskota et al¹¹, Seth et al¹² and Dandapat et al.⁵ Similarly, mantoux test was positive in 24 and 8 patients of tubercular and nontubercular lymphadenitis. Among the 24 tubercular cases, 10 were children below 5 years. Thus mantoux test was positive in 10 out of total 15 children below five years. This showed that the mantoux test has significance in the diagnosis of tuberculosis in children below 5 years. Similar opinion was made in a study done by Gadre et al.¹³

Demonstration of mycobacteria by culture, ziehl- Neelsen stains or histopathological examination is necessary for the definitive diagnosis of tuberculosis. However, both the methods for the diagnosis are either time consuming or invasive and can result in delay in the diagnosis and are not costeffective.¹⁴ Excisional biopsy may leave an unsightly scar and pose a risk of sinus formation. FNAC has been shown to be sensitive, specific, cost-effective and less invasive.¹⁵ Our results support this fact, demonstrating a sensitivity and specificity 85.7% and 94.8% respectively. Thus, surgical excision may be avoided if the FNAC results show characteristic caseous necrosis and epitheloid granulomas. This would reduce the morbidity involved in the diagnosis of this condition. In a similar study done by Jha et al⁹, FNAC yielded a positive diagnosis in 52 out of the 56 patients. Chao et al¹⁶ showed that sensitivity and specificity of FNAC in the diagnosis of tubercular lymphadenitis is 88% and 96% respectively. Similar experience was observed in the studies carried out by Weiler et al¹⁴, Al- Mulhim et al¹⁷, Bezabih et al⁶ and Dandapat et al.⁵

The efficacy of FNAC has been found to be as efficient as biopsy particularly in cases of tubercular lymphadenitis. FNAC being a simple outpatient diagnostic procedure is well accepted by patients and has

practically no complaints.¹⁸ Similar opinion was made by Laus et al.¹⁹

CONCLUSION:

In cervical lymphadenitis, tuberculosis remains a common cause. Patients with tuberculous and non tuberculous lymphadenitis have similar clinical features and hence are difficult to differentiate clinically. FNAC is a highly specific tool in the diagnosis of tuberculous lymphadenitis. The surgical excision may be avoided if the FNAC results show the characteristic caesous necrosis and epitheloid granuloma.

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