

Clinico-pathological evaluation of cervical lymphadenopathy

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Abstract

Introduction

Cervical lymph nodes are peripheral lymphoid organs distributed in the neck. The term lymphadenopathy refers to nodes that are palpable and abnormal in size, consistency or numbers. Diagnosis of cervical lymphadenopathy can vary from neoplasm to various kinds of infection. Accurate diagnosis of the cause of lymphadenopathy can sometimes be challenging and can lead to delay in diagnosis causing delayed treatment and subsequent health issues.

Methods: A prospective observational study was carried out on 78 patients of cervical lymphadenopathy who presented in the surgical outpatient department of KIST Medical College. Detailed history, physical examination and necessary investigations including fine needle aspiration cytology were done in all patients

Results: Most patients were between 21 to 40 years of age. The commonest cause for cervical lymphadenopathy was reactive lymphadenitis (53.84%) followed by Tuberculosis (34.61%). Secondary metastasis was seen in 7 patients (8.97%). In tubercular lymphadenitis, the anterior triangle group was the most commonly involved group of cervical lymph nodes (74 %), followed by the posterior triangle and supraclavicular equally (11.11%).

Conclusions: Reactive Lymphadenopathy is the commonest cause of cervical lymphadenopathy. However, variable diagnosis can be possible from non-neoplastic to neoplastic condition.

Keywords: Cervical lymphadenopathy; Fine-Needle Aspiration Cytology; Reactive lymphadenopathy.

Introduction

Lymph nodes are situated in various parts of the body like neck, axilla, inguinal region and inside the abdomen. These lymph nodes carry lymph which plays a role in infection or immune system.¹ Lymphadenopathy refers to lymph nodes that are abnormal in size, consistency or number. Clinically, lymphadenopathy can be classified as “generalized” if lymph nodes are enlarged in two or more noncontiguous areas or “localized” if only one area is involved. Lymphadenopathy can be classified as acute and chronic too. In acute conditions, usually to infection,

the affected lymph nodes are enlarged and tender, and there may be a varying degree of general constitutional disturbance of patients with pyrexia, anorexia and general malaise. In chronic conditions, lymph nodes are painless and non-tender, which may be due to tubercular or malignancy. Hence, a detailed history regarding the age and duration and severity of symptoms combined with an assessment of the character and location of the lymph nodes along with necessary investigation with a pathological diagnosis with fine needle aspiration cytology (FNAC) or biopsy will help in the management of the condition. In the neck, lymph nodes are arranged in groups like

submental, submandibular, anterior chain, posterior chain and supraclavicular.

Cervical lymphadenopathy is one of the commonest problems seen in the Surgery outpatient department. Accurate diagnosis of the cause of lymphadenopathy can sometimes be challenging and can lead to delay in diagnosis causing delayed treatment and subsequent health issues. This study was done to evaluate the cervical lymphadenopathy with demographic variables with the cytopathological diagnosis.

Methods

This was a prospective observational study conducted in the Department of General Surgery at KIST Medical College for a period of one year from March 2017 to March 2018 after taking approval from the hospital ethical committee. The study included seventy-eight patients presenting with enlarged cervical lymph nodes. Written informed consent was taken and data was collected regarding age, sex, clinical features and history of contact with tuberculosis. A detailed local examination of cervical lymph node was carried out followed by complete blood count, chest X-ray and fine needle aspiration cytology (FNAC). Excision biopsy was performed in fifteen cases where FNAC was inconclusive.

All patients over the age of 15 who presented with a palpable cervical lymph node were included in the study. Patients under the age of 15 or where FNAC or excisional biopsy could not be performed were excluded from the study. The diagnosis of the condition was made solely on the report of FNAC or histopathology. Data analysis was carried out using the Statistical Package for Social Science (SPSS, version 17) for Windows. Categorical variables were presented as the absolute number with a percentage.

Results

A total of seventy-eight patients were studied. There was an equal number of male and female patients, 39 in number with a male to female ratio of 1:1. The problem of cervical lymphadenopathy was seen most commonly in the age group of 21- 40 years. Table 1.

Anterior cervical was the most commonly affected group of lymph nodes in 48 (61.5%) patients followed by posterior cervical in 13(16.6 %) patients. FNAC was done in all 78 patients. In the majority of the patients (42, 53.8%) cytology showed reactive hyperplasia. Cytological features of tuberculosis were seen in 27 (34.6%) patients. In 7 (8.9%) patients metastasis was detected and in 2(2.5%)

patients had lymphoma. Table 2. Reactive lymphadenitis was common in the age group of 21-40 years followed by tuberculosis lymphadenitis. Table 3.

Table1: Age and sex distribution of patients with cervical lymphadenopathy

Age (years)	Male	Female	Total
< 20	9	5	14
21-40	16	19	35
41-60	9	11	20
61-80	4	4	8
> 80	1	0	1
Total	39	39	78

Table 2: Site distribution of cervical lymphadenopathy according to pathology

Site	Reactive	Tubercular	Lymphoma	Secondary	Total
Submental and submandibular	6	1	0	0	7
Anterior triangle	23	20	2	3	48
Posterior triangle	10	3	0	0	13
Pre-auricular	2	0	0	0	2
Occipital	1	0	0	0	1
Supra-clavicular	0	3	0	4	7
Total	42	27	2	7	78

Table 3: Age-wise distribution of the pattern of pathological findings.

Age (in years)	Reactive	Tubercular	Lymphoma	Secondary/ Metastasis	Total
< 20	12	2	0	0	14
21-40	18	16	1	0	35
41-60	9	6	1	4	20
61-80	3	3	0	2	8
>80	0	0	0	1	1
Total	42	27	2	7	78

Discussion

Lymph nodes are lymphoid organs found in various parts of the body considered to take part in immune defense.¹ Among 800 lymph nodes in the body, 300 of them are located in the neck.² Cervical lymphadenopathy, defined as nodes in the neck measuring more than 1 cm in diameter³, is one of the commonest problems seen in the Surgery Out-patient Department (OPD)

There was an equal number of male and female patients, 39 in number, hence, equal male and female ratio of 1:1 however; the incidence among males and females is variable as shown in various studies. In the study done by Narender NR females are affected more than males⁴ which is similar to the findings of the study done by Yogesh M⁵, and Upender Sharma⁶. However study done by Prasadarao Desari,⁷ Vamshi Krishna Gorle⁸ and V Pandey⁹ showed slightly male preponderance.

In our study, the problem of cervical lymphadenopathy was seen most commonly in the age group 21- 40 years. Most studies have revealed similar incidence in young like the study done by Narender NR (21-30 years, 32.6%)⁴, Prasadarao Dasari (20- 30 years,21.67%)⁷, Vamshi Krishna Gorle (21-30 years,36%)⁸. These results are comparable to study done by Wilson GR et al .¹⁰

Fine Needle Aspiration Cytology(FNAC) was done in all 78 cases. FNAC is a safe and cost-effective procedure to diagnose the cause of cervical lymphadenopathy.¹¹ In the majority of the patients (42, 53.8%) cytology showed reactive hyperplasia, followed by tuberculosis in 27 patients(34.6%). Our study is in contrast to the finding of other studies where tuberculosis was the main cause. In a prospective clinicopathological study of cervical lymphadenopathy, tuberculosis lymphadenopathy (n=25,54.3%) was the most common etiology followed by nonspecific chronic lymphadenopathy (n=16,34.7%) followed by some relatively rare cases and unusual presentation Schwannoma, pleomorphic adenoma, Kikuchi disease, non-Hodgkin's lymphoma and secondaries from carcinoma tongue (n=1,2.1%).⁴ This is similar to the finding of the study done by Prasadarao et al (37.33%)⁵, Vamshi Krishna Gorle and Padmanabh Inamdar (51 %)⁶, Paikrao M (48.29%)⁷ where tuberculosis is the most common cause of cervical lymphadenopathy followed by Reactive lymphadenopathy. V Pandey et al in their prospective study found that the majority of the cases had non-neoplastic causes.⁹ In our study, reactive lymphadenitis and tuberculosis were common in the age group of 21-40

years. This may be related to infection and tuberculosis prone zone. Vedi et al reported TB in 50% of cases similar to other studies.¹²⁻¹⁷

This study showed that anterior cervical is the most commonly affected group of lymph nodes in 48 (61.5%) patients, followed by posterior cervical in 13 patients (16.6 %). Vamshi Krishna Gorle reported that in tubercular lymphadenitis, the posterior triangle group was the most commonly involved group of cervical lymph nodes (31.3%), followed by the upper jugular group (21.5%).⁶

Conclusion

Reactive Lymphadenopathy is the commonest cause of cervical lymphadenopathy. However, variable diagnosis can be possible from non-neoplastic to neoplastic condition..

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