

Lymphadenopathy : Histopathological evaluation of 90 Cases in Chittagong

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Abstract

Lymphadenopathy is one of the common clinical presentation of patients suffering from different disease processes. Lymphnode enlargement may be due to reactive changes, tuberculosis, sarcoidosis, Hodgkin lymphoma, Non Hodgkin lymphoma, Metastatic deposits etc. Histopathological examination of the enlarged lymphnode is the gold standard method to ascertain the cause of the enlargement. The objective of our study was to explore the causes of lymphadenopathy in the population of Chittagong. The study was conducted in the department of Pathology, Chattagram Maa-O-Shishu Hospital Medical College, Chittagong during January 2012 to July 2014. A total of 90 (Ninety) lymphoid tissue specimens were received and Hematoxylin Eosin stained histopathological slides were prepared and microscopic examination was done. The most common morphologic changes of lymphadenopathy noted was reactive hyperplasia (36.66%) and other causes included were tuberculosis (27.77%), metastasis (20%), Non-Hodgkin lymphoma (7.77%), Hodgkin lymphoma (4.44%) and suppurative lymphadenitis (3.33%). Our observations are supported by some other national and international studies on lymphadenopathy.

Key words: Lymphadenopathy; Reactive hyperplasia; Lymphoma; Histopathology.

INTRODUCTION

Lymphnodes, in conjunction with the spleen, tonsils, adenoids and Peyer's patches, are highly organized centers of immune cells that filter antigen from the extracellular fluid. Nodes have considerable capacity for growth and change¹. The body has approximately 600 lymphnodes, but only those in the submandibular, axillary or inguinal regions may normally be palpable in healthy people. Lymphadenopathy means swelling of one or more lymphnodes. In general, lymphnodes greater than 1cm in diameter are considered to be abnormal². Lymphadenopathy may be generalized or localized. In generalized lymphadenopathy lymphnode enlargement is found in two or more non contiguous areas and only one area is involved in localized lymphadenopathy. Supraclavicular adenopathy is always abnormal and the chances of malignancy is high³. Lymphadenopathy may be due to acute bacterial or viral infections, chronic infections such as tuberculosis, cat scratch disease and neoplastic conditions such as Hodgkin lymphoma, Non Hodgkin lymphoma and metastasis. Some diseases with unknown etiology such as sarcoidosis may cause lymphadenopathy⁴. Tender lymphadenopathy most frequently is caused by infections, especially if there are associated erythema, warmth, induration or fluctuance. Occasionally malignancy can cause node tenderness because of hemorrhage into the node and subsequent stretching of the capsule⁵. Nodes that are soft, easily compressible and freely mobile frequently are benign. Hard nodes are found in cancers. Lymphomatous nodes are usually firm and rubbery. The aim of this observational study was to elucidate the pathologic causes of lymphnodal enlargement in different age group population in Chittagong.

MATERIALS AND METHODS

This observational study was conducted on 90 (Ninety) lymphoid tissue specimens collected in the department of pathology Chattagram Maa-O-Shishu Hospital Medical College (CMOSHMC) and also from a private hospital of Chittagong, during January 2012 to July 2014. Specimens were received in 10% formalin, grossly examined, paraffin blocks were prepared and stained with Hematoxylin and Eosin. Slides were examined by a panel of histopathologists. Patient's particulars and histopathological findings were recorded and statistical analysis was done.

RESULTS

A total of 90 cases of lymphadenopathy of both sexes and different age groups were enrolled in the study in order to perform the histomorphologic evaluation of the enlarged lymph nodes. Lymphoid tissue collected from different lymph node regions were as follows (Table 1) :-

Table 1 : Different regions of lymph nodes (n=90)

Lymph node region	Number of nodes	%
Cervical lymph nodes	38	42.12
Axillary lymph nodes	20	22.22
Mesenteric lymph nodes	17	18.18
Inguinal lymph nodes	07	7.77
Intestinal lymph nodes	2	2.22
Pelvic lymph nodes	1	1.11
Aortic lymph nodes	1	1.11
Supraclavicular lymph nodes	1	1.11
Submandibular lymph nodes	1	1.11
Tonsils	1	1.11
Pyloric lymph nodes	1	1.11

The different causes of lymphadenopathy observed by histopathological examination include reactive hyperplasia, tuberculosis, Non Hodgkin lymphoma, Hodgkin lymphoma, metastasis and suppurative inflammation of the nodes. The type of lesions and their frequency in 90 cases is shown in table 2.

Table 2 : Frequency of different causes of lymphadenopathy (n=90)

Histopathological diagnosis	Frequency of lesions (%)
Reactive hyperplasia	33(36.66%)
Tuberculosis	25(27.77%)
Metastasis	18(20%)
Non Hodgkin lymphoma	07(7.77%)
Hodgkin lymphoma	04(4.44%)
Suppurative lymphadenitis	3(3.33%)

Lymphadenopathy occurred in different ages and involved both sexes. Maximum age group belonged to 21 to 40 years with a mean age of 31.15 years with slight male predominance (56.66%). The age and sex distribution is shown in table 3.

Table 3 : Age and sex distribution of lymphadenopathy (n=90)

Age group	Frequency	Male	Female
<20 years	23(25.55%)		
21 to 40 years	29(32.22%)	51(56.66%)	39(43.34%)
41 to 60 years	22(24.44%)		
>.60 years	16(17.77%)		

In the study we also have noted the age distribution of tuberculous lymphadenopathy, where the maximum belonged to the 21 to 40 years age group. The age distribution of tuberculous lymphadenopathy is shown in table 4.

Table 4 : Age distribution of tuberculous lymphadenopathy (n=25)

Age group	Frequency of lesion
<20 years	8(32%)
21 to 40 years	10(40%)
41 to 60 years	07(28%)
>60 years	00

The study also revealed that metastatic lymphadenopathy occurred in older age groups.

DISCUSSION

Enlargement of peripheral lymph nodes is a common clinical presentation of a variety of pathologic conditions including reactive hyperplasia, infections, primary and secondary malignancy, autoimmune disorders and vaccination⁶. Our present study shows that reactive hyperplasia is the most common cause of lymphadenopathy (36.66%) and tuberculous lymphadenopathy is the second most common cause (27.77%). Other causes are secondary metastasis, Non Hodgkin lymphoma, Hodgkin lymphoma and suppuration. In the study reactive hyperplasia was the predominant cause (51%)⁷. Other lesions reported were tuberculous lymphadenopathy (15%), metastasis (15%) and lymphoma (19%). In another study they conducted in Delta Hospital limited, Dhaka, on 88 cases of lymphadenopathy, the predominant lesion was tuberculosis (31.8%), the second commonest cause was reactive hyperplasia (20.5%)⁶. Other lesions were Non Hodgkin lymphoma, Hodgkin lymphoma, metastatic carcinoma and sarcoidosis. In the present study a good number of mesenteric lymph nodes were included most of which were associated with gastrointestinal pathology and showed reactive changes. Otherwise tuberculosis would be the leading cause of lymphadenopathy. Regarding age distribution of tuberculous lymphadenopathy our study results slightly differs with their study⁶. The maximum age group of tuberculous lymphadenopathy belonged to 20 to 40 years age group (40%) in the present study whereas it is 24.49% in their study the maximum age group belonged to <20 years (28.57%)⁶. The difference is significant (<.05) and it is due to variation in age group and location of lymph nodes. In case of primary lymphoid malignancy the incidence of Non Hodgkin lymphoma is higher than that of Hodgkin lymphoma and is compatible with other study reports.

CONCLUSION

Though a limited number of cases (90) included in the study, yet on the basis of this study it can be concluded that reactive hyperplasia is the dominant and tuberculosis is the second most common morphologic changes of lymphnode enlargement. The study also supports the observation that the incidence of Non Hodgkin lymphoma is greater than that of Hodgkin lymphoma.

In case of Hodgkin and Non Hodgkin lymphoma immunohisto chemistry (IHC) should also be done for confirmation the diagnosis.

DISCLOSURE

All the authors declared no competing interest.

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