



STUDY OF HISTOPATHOLOGICAL SPECTRUM OF LYMPH NODE BIOPSY IN PATIENTS IN THE AGE GROUP 11-70 YEARS IN A TERTIARY CARE CENTRE.

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ABSTRACT

Introduction: Lymphadenopathy is one of the commonest presentations of patients in out patient department of any hospital. It is a common manifestation of a large variety of disorders, both benign and malignant. Histopathological examination of the lymph node biopsies is a gold standard test to confirm the diagnosis and also for detailed subtyping of lymphomas. We designed this study in our population for histopathological evaluation of lymph nodes that might be helpful for clinical management of these lesions.

Method: The present study was a prospective type of study. Total 89 numbers of patients from September 2016 till March 2017 were recruited. All excised lymph node specimens received in the Department of Pathology Gauhati Medical college and hospital constituted the study material. The specimens were subjected to detailed histopathological examination.

In each case, pathological reaction pattern was studied carefully and documented.

Results: Out of total 89 cases, 33 cases were of granulomatous lymphadenitis, 28 cases were of non specific reactive hyperplasia, 4 cases were Hodgkin's lymphoma, 8 cases were non Hodgkin's lymphoma, 13 cases were of metastatic lymph node and 1 each case of Kikuchi Fujimoto's disease, Castleman disease and Rosai Dorfman disease. Cervical lymph nodes were most commonly biopsied group of lymph nodes in our study.

Conclusion: In present study the most common cause of lymph node biopsy was granulomatous lymphadenitis followed by non-specific reactive hyperplasia. Among neoplastic lesions metastatic lymph node disease accounted for maximum number of cases.

KEYWORDS : Lymph node biopsy; Lymph node; Lymphadenitis, Lymphadenopathy

INTRODUCTION

Lymphadenopathy is a common clinical problem and biopsies are usually undertaken to determine the cause of nodal enlargement, which may be neoplastic or non-neoplastic. The neoplastic disorders are mainly lymphohematogenous malignancies and metastases while the causes of non-neoplastic lymphadenopathy are more varied such as infections (bacterial, viral, fungal), drug reactions (including certain vaccines), lipid storage disorders and a wide variety of miscellaneous non-neoplastic lymphoproliferative disorders such as Castleman disease, Rosai Dorfman disease, Kimura disease, Kikuchi Fujimoto disease and systemic lupus erythematosus (SLE).¹ Clinically, lymphadenopathy may be peripheral or visceral.

Peripheral lymphadenopathies are easily detected by routine physical examination and are often biopsied as they are easily accessible for lymphadenectomy, which is a minor surgical procedure. Among the peripheral nodes, those in the upper part of the body (cervical, supraclavicular, axillary) are preferentially biopsied than lower limb nodes (popliteal, inguinal or femoral) as the former are more likely to yield definitive diagnosis, whereas the latter are often characterized by non-specific reactive or chronic inflammatory and fibrotic changes.^{2,3} However, there is a paucity of information on the spectrum of diseases affecting lymph nodes from this region. Hence this study was undertaken with the aim of evaluating the spectrum of histopathological diagnosis of lymph node biopsies. Currently Immunohistochemical analysis constitutes an integral work up for lymphomas because it improves the accuracy of classification. Therefore, few basic IHC panels are also performed in selected cases.

MATERIALS AND METHOD

The study is conducted in the department of pathology, Gauhati medical college and hospital from July 2016 to April 2017. Total 89 cases of peripheral lymph node biopsy in the age group 11-70 years were included in our study. The detailed clinical history including age, gender and results of relevant investigations is collected/abstracted from the patients' case files. Biopsy specimens are received in the Pathology Department in 10% formalin. In every case the standard protocol for surgical grossing of resected specimens is followed. After a detailed specimen description, multiple sections will be taken from the lymph nodes. After conventional processing, paraffin sections of 5µm thickness is stained by haematoxylin and eosin (H and E) for histopathological study. In addition, 4µm sections will be cut from a paraffin block of the tissue and taken on a glass slide coated with adhesive for immunohistochemistry (IHC).

RESULT AND ANALYSIS

Out of 89 cases analysed in our study, non-neoplastic cases were 64 (71.91%) and neoplastic cases were 25 (28.09%). Among the 89 cases, 33 cases were granulomatous lymphadenitis (37.08%), 28 cases were non-specific reactive hyperplasia (31.47%), 12 cases were lymphoid malignancy (13.48%), 13 cases of metastatic lymphadenopathy (14.60%) and 3 cases of non-neoplastic lymphoproliferative disorders (3.37%) which includes one each case of Kikuchi Fujimoto's disease, Castleman's disease and Rosai Dorfman's disease.

In our study the study group was in the age group 11-70 years. Maximum numbers of cases were found in the age group 31-40 years (31.47%) and minimum numbers of cases were found in the age group 51-60 years (10.11%). Maximum numbers of granulomatous lymphadenitis (42.42%) and non-specific reactive hyperplasia (35.71%) were seen in the age group 31-40. Maximum numbers of lymphoid neoplasm were seen in the age group 41-50 years (33.33%).

AGE GROUP	GRANULOMATOUS LYMPHADENITIS	NON SPECIFIC REACTIVE HYPERPLASIA	LYMPHOID NEOPLASIA	METASTATIC LYMPH NODE	OTHERS	TOTAL	%
11-20	8	5	1	0	1	15	16.85
21-30	4	4	2	0	1	11	12.35
31-40	14	10	3	0	1	28	31.47
41-50	4	6	4	2	0	16	17.98
51-60	1	2	2	4	0	9	10.11
61-70	2	1	0	7	0	10	11.24
TOTAL	33	28	12	13	3	89	-
%	37.08	31.47	13.48	14.60	3.37	-	100

TABLE 1: SHOWING AGE WISE DISTRIBUTION OF LYMPH NODE PATHOLOGY

In our study, overall females are mostly affected (M:F=1:1.34). Females are mostly affected in Granulomatous lymphadenopathy, non-specific reactive hyperplasia and metastatic lymphadenopathy with M:F ratio being 1:1.53, 1:1.80 and 1:1.6 respectively. Whereas males are affected more in lymphoid neoplasm with M:F ratio being 2:1.

Lymph node pathology	Gender		
	Male	Female	Ratio
Granulomatous lymphadenitis	13	20	1:1.53
Non specific reactive hyperplasia	10	18	1:1.80
Lymphoid neoplasm	8	4	2:1
Metastatic lymphadenopathy	5	8	1:1.6
Others	2	1	2:1
total	38	51	1:1.34

Table 2 showing Lymphnode Pathology according to gender

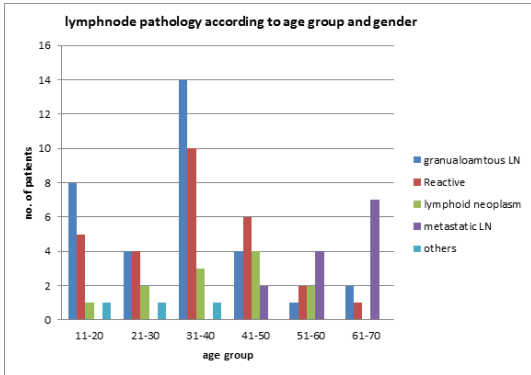


Fig1. Showing lymphnode pathology according to different age group.

In our study cervical lymphnode was most commonly biopsied (52%) whereas least common was inguinal lymphnode (10%).

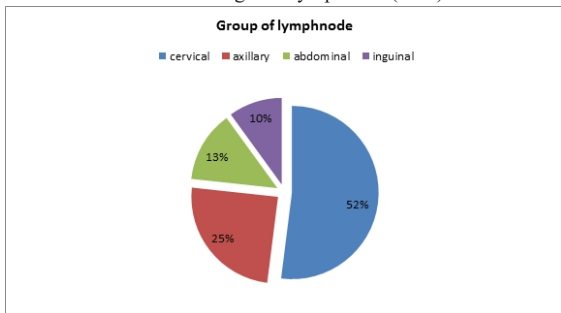


Fig2. showing frequency of different lymphnode included in our study

DISCUSSION:-

In our study cervical lymphnode biopsy constituted 52 % of cases . Studies done by rahman et al⁷, khan et al⁵ and vidyadhara p rani et al⁶ support our study. Similar to our study, they also Found that cervical lymphnode is most commonly biopsied followed by axillary lymphnode. In our study there is female preponderance (M:F=1:1.34). but studies done by vidyadhara rani p et al⁶ and khan et al⁵ show male preponderance .This may be due to geographical variation .

In the present study non neoplastic lesion constituted 71.91% and neoplastic lesion constitutes 28.09% of all biopsy cases. This is supported by almost all the studies done around the world e.g Henry et al⁷, Sibanda et al⁸, Rao et al⁹, Tiwari et al¹⁰, Kamat et al¹¹ and Vacchani et al¹². In our study Granulomatous lymphadenitis(37.08%) is the most common cause of lymphnode enlargement. Studies done by vidyadhara rani p et al⁶(31.9%),khan et al⁵(33.3%),Umer et al¹²(55.4) kamat et al¹¹ (58.19%) and Tiwari et al¹⁰(47%)also show similar results. The variation in percentage might be due to geographic variation, age, number of patients included in study and immunological status of the patients.

Studies done in the USA by henry et al⁷(63%),in Russia by chumakov et al¹⁴(64.9%)and in South Africa by moore et al¹⁵(47.8%) show non specific reactive hyperplasia as the most common cause of lymphnode enlargement. In the present study it is the second most common cause accounting 31.47% of all cases. The higher case of granulomatous

lymphadenitis may be due to higher prevalence of tuberculosis in india .

In our study, among the neoplastic cases of lymphnode enlargement due to metastasis accounts for 14.60% and lymphoid neoplasm accounts for 13.48% of all cases. This is supported by the studies of sibanda et al⁸, Akinde et al,¹⁶ Tiwari et al¹⁰ vacchani et al¹², yeutsu et al¹⁷ and kamat et al¹¹. All these studies confirm that metastasis is more common cause of lymphadenopathy than lymphoid neoplasm. In the present study, out of 13 cases of metastatic lymphnode ,8 were metastatic squamous cell carcinoma, 3 were metastatic adenocarcinoma and 2 were case of metastatic infiltrating duct carcinoma.

Lymphoid neoplasm are accounted for 13.48% in our study. In a study by Moore et al¹⁵, 8.5% of cases were lymphoma. In a study by Amr et al¹⁸, 35% of cases were lymphomas.

Vidyadhara rani p et al found 27.6% cases of lymphoid malignancy of all biopsy cases. On contrary to our study, studies by kamat et al¹¹(3.67%) and tiwari et al¹⁰(2%), show very small no. of lymphoid neoplasm which may be due to geographical variation. Out of 12 lymphoid neoplasm case, more were of non Hodgkin lymphoma (8 cases) than hodgkins lymphoma (4 cases). This is similar to studies done by Roy et al¹⁹.

Other causes of lymphadenopathy found in our study include kikuchi fujimoto disease, castleman disease and rosai- dorfman disease which are also the least common cause of lymphadenopathy in our study. This is also supported by the various rare case report .

Early kikuchi fujimoto disease lacking overt necrosis can be misdiagnosed as malignant lymphoma, due to presence of abundant immunoblast. Features of kikuchi fujimoto disease that may help prevent its misdiagnosis as malignant lymphoma include incomplete architectural effacement with patent sinuses, presence of numerous reactive histiocytes and relatively low mitotic rates.

Conclusion:-

Out of 89 cases of biopsy non neoplastic cases were 71.91% and neoplastic cases were 28.09%. most common cause of lymphnode enlargement is granulomatous lymphadenitis(37.08%) and least common cause are kikuchi fujimoto, castleman and rosai dorfman disease (1.1% each).

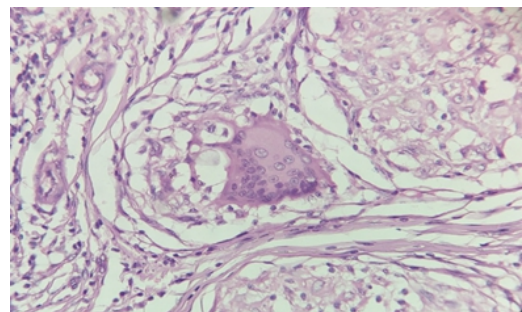


Fig 3: granulomatous lymphadenitis showing langhans giant cell

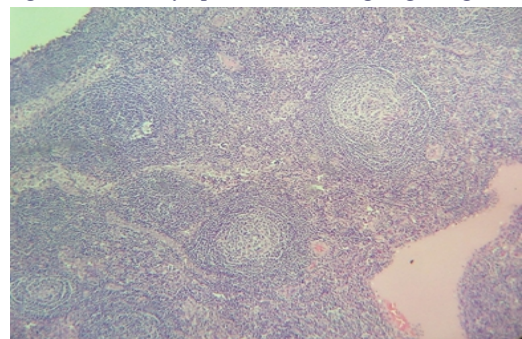


fig 4: Castleman disease, Small lymphocyte encircled follicles with concentric "onion skin" layers and marked inter-follicular vascular proliferation

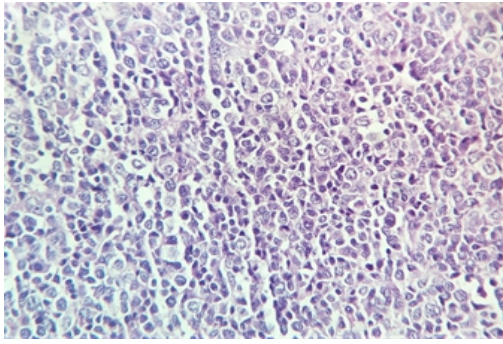


Fig 5: low power view of a NHL case

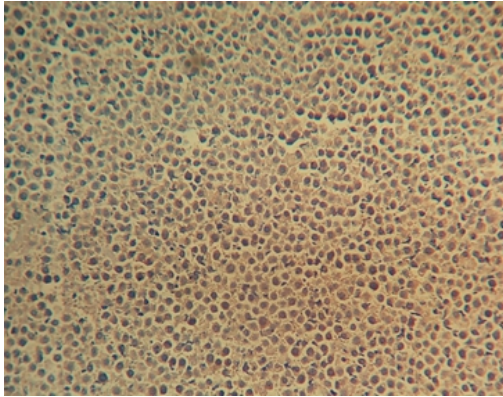


Fig 6 :cd 20 positivity in the NHL case

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