Original Research Paper

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Pathology

A RETROSPECTIVE STUDY OF HISTOPATHOLOGICAL SPECTRUM OF LYMPH NODE BIOPSY.

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ABSTRACT

Aims: Lymphadenopathy is a common clinical problem and biopsies undertaken to determine the cause of nodal enlargement may be neoplastic or non neoplastic. The causes of neoplastic are mainly lymphohematogenous malignancies and metastases while that of non-neoplastic lymphadenopathy are varied.This study was undertaken to determine the histopathological spectrum of lymphadenectomies.

Materials and Methods: The present study is the Retrospective study, wherein 263 cases of histologically diagnosed peripheral lymph node biopsies in the Department of Pathology, madras medical college, Chennai from jan 2015 to dec 2016 were reviewed. Surgical resection specimens with lymphnode dissection were excluded from the study.

Results: Out of total 263 cases, NonNeoplastic lesions were more common comprising 54.4% (143 cases) which included 30.8% of granuloamatous lesion, 21% (55 cases) reactive lymphoid hyperplasia, and 2.6% (7 cases) of kimura disease .Neoplastic lesions were comprising 45.6% (120 cases) and included 15.6% (41 cases)of non-Hodgkin lymphoma, 11% (29 cases) of Hodgkin lymphoma and 19% (50 cases) of metastatic lesions.

Conclusion: In present study the most common cause of lymph node biopsy was tuberculous lymphadenitis followed by Non specific reactive hyperplasia. Among neoplastic lesions lymphoma accounted for maximum number of cases.

KEYWORDS : Lymph Node Biopsy, 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 (eg: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). 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. Visceral lymphadenopathy requires laparotomy or sophisticated imaging techniques for detection. Among the peripheral nodes, cervical, supraclavicular, axillary are preferentially biopsied than popliteal, inguinal or femoral as the former are more likely to yield definitive diagnosis, whereas the latter are often characterized by nonspecific reactive or chronic inflammatory and fibrotic changes[1] 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 peripheral lymph node biopsies. The present study will address all the types of lymph node diseases in the excised specimens of lymph node. They will be broadly categorised in to one of the four types: 1.Non specific reactive hyperplasia; 2.Granulomatous lymphadenopathy; 3.Lymphoid neoplasm; 4.Miscellaneous.

MATERIAL AND METHOD

The present study was a retrospective study. Total 263 cases of histologically diagnosed peripheral lymph node biopsies in the Department of Pathology, madras medical college, Chennai from jan 2015 to dec 2016 were reviewed. In each case, pathological reaction pattern was studied carefully and documented. The clinical information were noted from the histopathology request form.Inclusion criteria: 1.all peripheral lymphnode biopsy 2. All age group. Exclusion criteria: Surgical resection specimens with lymphnode dissection.

The specimens were fixed in 10% formalin for 24 hours .In Gross histopathological examination morphological features – The size of nodes,shape, colour, consistency, presence of necrosis and matting, appearance on cut section and appearance of capsule were noted. 5mm thick bits (at least 2) were submitted for processing, 4 – 5 micron thick sections were cut with a microtome and stained with Haematoxylin and Eosin stain. The diagnosis of lymph node lesions was made on the basis of clinical presentation, gross morphology and light microscopic features of H & E, immunohistochemistry (CD20, Cytokeratin) and special stain (PAS, ZN) were done whenever required. Immunophenotyping and cytogenetic studies were not performed.

RESULT AND ANALYSIS

In the present study Amongst 263 cases of lymph node biopsies analysed, non neoplastic cases were 54.4% and neoplastic cases were 45.6%. The present study included 30.8% (81 cases) of granulomatous lymphadenitis in which 24% (63 cases) were tuberculous lymphadenitis(image1,2 &3) and 6.8% (18 cases) of other granulomatous lymphadenopathy. 21% (55 cases) of Non specific reactive lymphoid hyperplasia, and 2.6% (7 cases) of kimura disease .Neoplastic lesions were comprising 45.6% (120 cases) which includes 15.6% (41 cases)of Non-Hodgkin lymphoma, 11% (29 cases) of Hodgkin lymphoma and 19% (50 cases) of metastatic lesions.

In present study the patients observed were of wide range in ages from 3 years to 78 years.

Maximum numbers (21%) of cases were seen in age group of 21-30 years. Minimum numbers (1.1%) of cases were seen in age group of more than 71 years. Among non neoplastic lesions there was male preponderance and male to female ratio was 1.8:1. and were common in the age group of 11-20 years and granulomatous lymphadenitis (81cases) and kimura disease (7 cases) were seen in the age group of 21-30 . Maximum numbers of neoplastic lesion (35 cases) were in age group of 51-60 years(table-1) and the distribution of different type of lymph node lesion is shown in figure:1

Table-1: Age Wise Distribution Of Lymph Node Biopsy

Age	Non Specific Reactive Hyperplasia	Granulomatous Lymphadenitis	Kimura Disease	Lymphoid Neoplasm	Metastatic Disease	Total	Percentage
<10	3	1	0	0	0	4	1.5
11-20	20	18	2	15	0	55	21

21-30	10	24	5	11	3	53	20.2
31-40	8	20	0	4	3	35	13.3
41-50	7	12	0	16	14	49	18.6
51-60	5	5	0	16	19	45	17.1
61-70	2	1	0	6	10	19	7.2
>71	0	0	0	2	1	3	1.1
Total	55	81	7	70	50	263	
Percentage	21	30.8	2.6	26.6	19	-	100

Out of 120 neoplastic cases 58.3% are primary neoplasm of lymph node and 41.7% were secondary neoplasm.

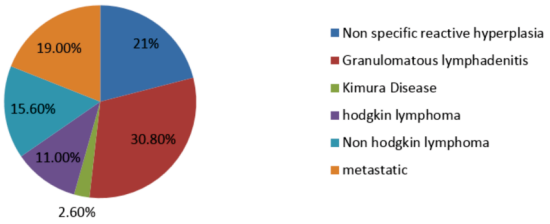

Figure:1 Distribution Of Different Type Of Lymphnode Lesion

Out of total 263 cases , primary neoplasm of lymph nodes were 70 cases and secondary neoplasm of lymph node were 50 cases in which most common was metastatic squamous cell carcinoma were seen in 42 cases(84%) followed by infiltrating ductal carcinoma of breast in 6 cases(12%) and adenocarcinoma in 2 cases(4%).

DISCUSSION:

Though FNAC (fine needle aspiration cytology) is used commonly for establishng the diagnosis, Excision biopsy of lymph node remains the gold standard for diagnosis[4-6].Males were more commonly affected in our study,cases with benign etiology were younger whereas malignant etiology were older.

In present study non-neoplastic lesions (54.4%) were much more common than neoplastic lesions (45.6%) and these results were consistent with Rao MN et al (56%) [10], Rahman Md A (70.2%) [8], and Vachhani A et al (75%) [9].

In our study, among the non neoplastic lesion,granulomatous lymphadenitis was the most common pattern constituting 30.8% of cases and the result were consistent with Kamat GC et al[7](58.19%), Tiwari et al[11] (47%) , Rajshri P. Damle et al [2](24.77%)whereas Non specific reactive lymphadenitis was 21% which is consistent with Roy A et al [12] (21.6%),Kamat GC et al[7](30.73%), Tiwari et al[11] (36%). In this study kimura disease were constitute about 2.6%, Peak age incidence was in third decade which is similar to the study of Abhay, et al[14]

Among neoplastic lesions (45.6%), 70 cases (26.6%) of lymphoma. Out of which 29 cases (11%) were Hodgkin's lymphoma and 41 cases (15.6%) were Non- Hodgkin's lymphoma. Remaining 19% were metastatic lesions. In a study conducted by Akinde et al[3] Mohan A et al [13], constituted 16.85% and 25.9% cases were lymphoma which were comparable with our study.

Malignancies have been the predominant cause of lymphadenitis in developed countries than developing countries like India because of racial and genetic factors. In the study of Roy A et al [12] cases of lymphoma which were very higher incidence than present study because of these studies included large number of cases and conducted in research centre or onco institute.

Metastatic malignancy were found in 50 cases (19%) of which 42 cases were metastatic squamous cell carcinoma , 6 cases were metastatic infiltrating breast carcinoma and 2 cases were metastatic adenocarcinoma and Majority of cases were seen in 51-60 years followed by 41-50years of age group. our findings were similar to results of Rajshri P. Damle et al[2](16.31%) andVachhani A et al (23%)[9]. Squamous cell metastasis is due to consumption of tobacco ,smoking leading to malignancy in aero-digestive tract. Metastasis of breast carcinoma in lymph node is due to change in lifestyle and cultural factors, late marriage, delayed child bearing and reduced breast feeding .

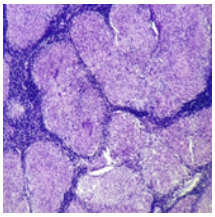

Image:1(10x H&E:showing multiple granuloma)

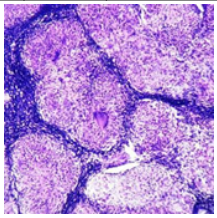

Image :2(10x H&E showing granuloma with langhans multi nucleated giant cell)

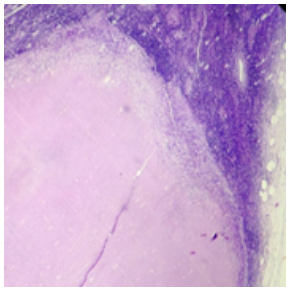

Image:3 (40x H&E showing caseous necrosis)

CONCLUSION:

The present study of 263 cases of lymphnode biopsies highlights the importance of lymphnode biopsy for establishing the cause of lymphadenopathy and its role in approprite clinical management. The diagnosis of granulomatous lymphadenitis was most common in our study followed by non specific reactive hyperplasia in non neoplastic lesions whereas in neoplastic lesions, lymphoma was most common than metastatic lesion in our study.

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