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Original Research Article

HISTOMORPHOLOGICAL ANALYSIS OF LYMPH NODE LESIONS

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ABSTRACT

This study is a retrospective analysis of 93 cases of lymph node biopsy, over a span of one year carried out in Department of Pathology, Ballari Medical College and Research Centre (BMCRC), Ballari, Karnataka. 73.1% cases were non-neoplastic and 26.8% cases were neoplastic lesions. Reactive hyperplasia was the most common cause of lymphadenopathy, occurring in all age groups involving the cervical group of lymph nodes followed by granulomatous lymphadenitis. Neoplastic lesions are most commonly seen in older age group. Persistent lymphadenopathy in all age group should undergo lymph node biopsy, to rule out malignancy and lymphoma which helps in early diagnosis.

Keywords: Lymphadenopathy, Reactive hyperplasia, Lymphoma, Metastasis.

INTRODUCTION

The study of lymph node biopsy aids in interpretation of pathological events, occurring in a lymph node ranging from reactive process to metastasis. Lymphadenopathy occurs in all age groups, and it is the common clinical presentation of regional or systemic disease. The etiology of lymphadenopathy can be classified into non-neoplastic and neoplastic. The non-neoplastic lesions occur as a result of infections, autoimmune related and drug induced or may represent reactions to variety of antigens. The neoplastic lesion of lymphonode includes lymphohematogenous and metastatic cancers.

The causes of lymphadenopathy can be analyzed on the basis of clinical findings and fine needle aspiration cytology. But the limitation of aspiration cytology is diagnosing grey zone lesions such as hematolymphoid malignancy. Lymph node biopsy and histopathological analysis are considered as gold standard for diagnosis of metastasis and further typing of lymphomas.[1,2,3]

Aim of the study

To analyze the histopathology patterns of lymph node lesions.

MATERIALS AND METHODS

This study is a retrospective analysis of 93 cases of lymphnode biopsy, over a span of one year carried out in Department of Pathology, BMCRC-Ballari. Patients of all age group who underwent lymph node biopsy were considered for the study. Further poorly preserved/ crush artifact tissue and inadequate samples were excluded from the study. The specimens were fixed in 10% formalin, gross findings such as necrosis, matting of lymph nodes were noted. Paraffin blocks and tissue sections were made as per standard protocols, Hematoxylin and Eosin (H&E) staining was done and slides were examined.

RESULTS

93 Lymph node biopsy specimens were analyzed in the study and were categorized into non-neoplastic and neoplastic lesions. Majority of cases were in the

age group of 21-30 years (Table 1). Cervical group of lymph nodes gave the highest diagnostic yield followed by axillary group of lymph nodes. [Figure 1]

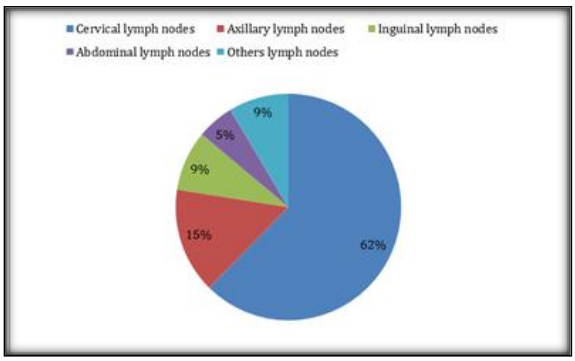

Figure 1: Site of Lymph node biopsies

Out of 93 cases, male patients were 51(54.8%) cases, and female patients were 42(45.1%), with male to female ratio of1.2:1. Non-neoplastic lesions were the most common lesions accounting for 73.1% of total cases, and reactive hyperplasia was the most common lesion accounting for 49.4% and was observed predominantly in the age group of 21-30 years, followed by granulomatous lymphadenitis accounting for 19.3%, with maximum number of cases occurring in the age group of 31-40 years. Two patients were diagnosed as Kikuchi Lymphadenitis between the age group of 21-40 years. One case of Kimura disease was observed in patients at the age of 36 years, and Castleman disease was seen in 43 year old patient.

Neoplastic lesions accounted for 26.8%, metastatic deposits were seen in 15% of cases with most common age group being between 51-60 years, followed by 21-30years. Out of 14 cases – eight cases were squamous cell carcinoma, four cases were infiltrating ductal carcinoma deposits, and other two cases were adenocarcinoma deposits. Among eleven cases of lymphoma, Non-Hodgkin's Lymphoma accounted for 8.6% with peak incidence of age being 41-50 years and further typing was done by IHC. Hodgkin's Lymphoma accounted for 3.2% of which two cases were observed in the age group of 41-50 years.

Table 1: Age wise distribution of lymph node lesions

Diagnosis	<10	11-20	21-30	31-40	41-50	51-60	61-70	>70	Total
Reactive Hyperplasia	5	3	23	4	5	2	3	1	46
Granulomatous Lymphadenitis	-	3	5	8	-	2	-	-	18
Kikuchi Lymphadenitis	-	-	1	1	-	-	-	-	2
Kimura disease	-	-	-	1	-	-	-	-	1
Castleman disease	-	-	-	-	1	-	-	-	1
Hodgkin's Lymphoma	-	-	-	-	2	1	-	-	3
Non-Hodgkin's Lymphoma	-	-	-	2	3	-	2	1	8
Metastatic disease	-	-	4	1	1	4	2	2	14
Total	5	6	33	17	12	9	7	4	93

DISCUSSION

The present study discuss about the histomorphological pattern of lymph node lesions in 93 cases over a period of one year. Majority of patients were male, with male to female ratio of 1.2:1, including patients of all age groups. These findings were consistent with studies done by Deka J et al,[4] and Rani et al.[5] Cervical group of lymph nodes was the most common site for lymphadenopathy followed by axillary lymph node (15.05%), because cervical lymphnode drains most frequently from inflamed region of the body. Studies done by Deka J et al,[4] Damle et al,[6] and Shiledar et al,[7] had similar findings.

Non- neoplastic lesions accounted for 73.1% and neoplastic lesions for 26.8%, these findings were consistent with studies done by Vacchani et al8 and Damle et al.[6] Reactive hyperplasia was the most common pattern in non-neoplastic lesions in all age groups, these findings were consistent with studies done by Moore SW et al,[12] and Damle et al,[6] and Deka J et al,[4] as a result of infections there is higher rates of reactive hyperplasia. In our study granulomatous lymphadenitis was second most non-neoplastic lesion to occur, but studies done by Rahman et al,[10] Shivamurthy et al,[13] found granulomatous lymphadenitis as predominant lesion. Among neoplastic lesion metastatic carcinoma was the commonest malignant lymphadenopathy followed by Non-Hodgkins lymphoma , these findings are consistent with other studies,[6,7,10,11] but studies done by Deka J et al,[4] and Bibi S et al,[9] showed Non-Hodgkin's Lymphoma as common neoplastic lesion followed by metastatic disease. [Table 2]

Table 2: Comparison of Neoplastic lymph node lesions with other studies

Diagnosis	Deka J et al,[4]	Damle et al,[6]	Shiledar et al,[7]	Bibi S et al ,[9]	Rahman et al,[10]	Potti et al,[11]	Present study
Hodgkin's Lymphoma	3.5%	1.2%	1%	3%	5.7%	9%	3.2 %
Non-Hodgkin's Lymphoma	11.7%	2.4%	3.9%	24.5%	11.5%	19%	8.6 %
Metastatic disease	7.1%	16.3%	22.1%	6.13%	12.5%	20%	15.05 %

Metastatic squamous cell carcinoma was the most common to occur in the age group of 51-60 years, followed by metastatic deposit of infiltrating ductal carcinoma. The increase in number of cases of squamous cell carcinoma could be due to consumption of tobacco in various forms and poor life style habits.

CONCLUSION

The most common causes of lymphadenopathy are reactive hyperplasia, occurring in all age groups involving the cervical group of lymph nodes. Neoplastic lesions are most commonly seen in older age group. Persistent lymphadenopathy in all age group should undergo lymph node biopsy, to rule out malignancy and lymphoma which helps in early diagnosis.

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