SPECTRUM OF PATHOLOGIC LESIONS IN LYMPH NODE BIOPSIES- A RETROSPECTIVE STUDY

Amit Kumar Tiwari[1], Amit Kumar Bhardwaj[2], Tapas Ranjan Behera[3], Maikal Kujur[4], Amar Bahadur Singh[5]

[1]Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.
[2]Demonstrator, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.
[3]Junior Resident, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.
[4]Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.
[5]Assistant Professor, Department of Pathology, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh, India.

ABSTRACT

BACKGROUND

The aim of this study is to analyse histopathologic spectrum of various neoplastic and nonneoplastic diseases affecting cervical, axillary, inguinal, mesenteric and submandibular lymph nodes.

MATERIALS AND METHODS

The retrospective study conducted from March 2003 to August 2014 in Chhattisgarh Institute of Medical Sciences, India. The study included 140 cases of lymph node biopsies received in the Pathology Department.

RESULTS

Out of 140 lymph node biopsies received, 51 (36.42%) were from cervical region, 12 cases (8.57%) from axillary region, 28 from mesenteric region, 9 were from inguinal region, 8 from submandibular region and 32 from unknown region collected from all age groups. Most common condition involving the lymph node was found to be tuberculosis (41) followed by Hodgkin lymphoma (18) and granulomatous lesion other than tuberculosis (17) followed by reactive hyperplasia. Lymphoma other than Hodgkin and chronic nonspecific lymphadenitis had equal incidence (each presented by 13 cases). Metastasis and sinus histiocytosis were seen in the descending order of frequency.

CONCLUSION

Lymph node involvement by nonneoplastic diseases (granulomatous and nonspecific) (58+39) is much more common than the neoplastic diseases (43), tuberculosis (41) being the predominant.

KEYWORDS

Biopsy, Lymph Nodes, Neoplastic, Nonneoplastic, Benign, Malignant.

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BACKGROUND

Human lymph node is one of the major anatomic components of the immune system. It can be due to any disease process associated with lymph nodes. Lymph node enlargement is one of the very common clinical symptom seen in outpatient department of any hospital. Lymphadenopathy can occur in almost all age group and at any site of the body. It is mostly commonly caused by benign disorders like local or generalised infections, but sometimes it may be due to neoplastic disorders.[1] Detailed clinical history, symptoms, signs, size of lymph nodes, presence of generalised lymphadenopathy and hepatosplenomegaly are important for classification and treatment.

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Corresponding Author:
Dr. Amit Kumar Tiwari,
Assistant Professor, Department of Pathology,
Chhattisgarh Institute of Medical Sciences,
Bilaspur, Chhattisgarh, India.
E-mail: dramittiwari01@gmail.com
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AIMS AND OBJECTIVES

The aim of this study is to analyse histopathologic spectrum of various neoplastic and nonneoplastic diseases affecting cervical, axillary, inguinal, mesenteric and submandibular region lymph node collected over a period of 11 years from the tertiary care hospital in Chhattisgarh, India.

MATERIALS AND METHODS

All lymph node biopsies received in 10% formalin in the Department of Pathology during the period of the study. Paraffin embedded sections were stained with haematoxylin and eosin, then reviewed under light microscope. All biopsies were divided into 2 broad categories; neoplastic and nonneoplastic and were grouped according to the site of node, sex and age of the patient.

RESULTS

In the study, out of 140 lymph node biopsies received, 51 (36.42%) were from cervical region, 12 cases (8.57%) from axillary region, 28 from mesenteric region, 9 were from inguinal region, 8 from submandibular region and 32 from unknown region with affecting all age groups (Table 4, Chart

1). Most common condition involving the lymph node was found to be tuberculosis (41) followed by Hodgkin lymphoma (HL) (18) and granulomatous lesion other than tuberculosis (17) followed by reactive hyperplasia (Table 6, Chart 3). NHL and chronic nonspecific lymphadenitis had equal incidence (each presented by 13 cases) (Table 1, Table 3). Metastasis and sinus histiocytosis were seen in the descending order of frequency. Male-to-female ratio was 1.2:1. The youngest patient was found to be 1-year-old male and oldest patient was 84-year-old male with tuberculosis and NHL respectively (Table 5, Chart 2). Thirteen cases of Non-Hodgkin's lymphoma affecting 7-year-old to 82-year-old with a male-to-female ratio of 9:4 and 18 cases of Hodgkin lymphoma affecting 4 and 70-year-old with male-to-female ratio of 11:7 were diagnosed (Table 3). Twelve cases of metastasis in the lymph nodes were found, most of them were adenocarcinoma type. Tuberculous lymphadenitis was diagnosed by the presence of caseating epithelioid granulomas, which is diagnostic of tuberculosis. Non-Hodgkin lymphoma was classified according to WHO classification of lymphoid neoplasms. HL cases were classified according to Rappaport classification.

DISCUSSION

Palpable lymph node is an important diagnostic manifestation of the underlying disease condition. Fine needle aspiration cytology is commonly used to establish diagnosis, but biopsy of the lymph node remains the "gold standard" for lymphadenopathy.[2,3,4] In our study, males were more commonly affected as compared to females, which is similar in observation to another study.[5] Maximum number of lymph node biopsies were from cervical group of lymph nodes. Study done by Khan et al[5] and Rahman et al[6] also support similar finding. Several studies reported that tuberculosis is one of the commonest cause of lymph node enlargement in adults in India.[7,8,9] Present study also supports this finding. Recently, HIV infection has emerged as a cofactor for tuberculosis emergence.[10] Nonspecific lymph node disorders were second most common lesion seen in our study, which is different from the study done by Lee et al[11] in the United States. Study conducted by Shaikh et al[12] supports the present study finding.

Neoplastic conditions affecting lymph nodes were mainly lymphoma followed by metastasis cases. The incidence in our study is slightly higher (30.71%) than the findings of Al-Ghaithy et al[13] (22.5%). Variation in the percentage might be due to ethnical causes and patient population included in the study. Our study showed more cases of Hodgkin's lymphoma than non-Hodgkin's lymphoma, which is in contrary to the study done by Roy et al[14] and Hartge et al.[15]

CONCLUSION

From this study, we concluded that lymphadenopathy is a common clinical problem affecting all age group and both sexes. Biopsy plays an important role for accurate diagnosis. Among the cases requiring biopsy for the diagnosis, the commonest cause of lymphadenopathy is tuberculosis and atypical lymphoma is the least common cause of lymphadenopathy.

Histological Diagnosis	No.	(%)	M	F
Sinus Histiocytosis	11	28.20%	9 (23.07%)	2 (5.12%)
Reactive Hyperplasia	15	38.46%	10 (25.64%)	5 (12.8%)
Chronic Nonspecific Lymphadenitis	13	33.33%	8 (20.51%)	5 (12.8%)
Total	**39**		**27 (69.23%)**	**12 (30.76%)**

Table 1. Age and Sex Distribution of Nonspecific Lymph Node Disorder

Histological Diagnosis	No.	(%)	M	F
Tuberculosis	41	(70.68%)	14 (24.13%)	27 (46.55%)
Other granulomatous lesion	17	(29.31%)	3 (5.17%)	14 (24.10%)
Total	**58**		**17 (29.31%)**	**41 (70.68%)**

Table 2. Age and Sex Distribution of Granulomatous Lymph Node Disorder

Histological Diagnosis	No.	(%)	M	F
Hodgkin lymphoma	18	41.86%	10 (23.25%)	8 (18.60%)
Non-Hodgkin lymphoma	13	30.22%	9 (20.93%)	4 (9.30%)
Metastatic	12	27.90%	5 (11.62%)	7 (16.27%)
Total	**43**		**23 (53.48%)**	**20 (46.51%)**

Table 3. Age and Sex Distribution of Neoplastic Lymph Node Disorder

Lymph Node Site	No.	%
Cervical	51	36.42%
Axillary	12	8.57%
Inguinal	9	6.42%
Mesenteric	28	20%
Submandibular	8	5.71%
Unknown	32	22.85%
Total	**140**	

Table 4. Site of Lymph Node Biopsies of Patients

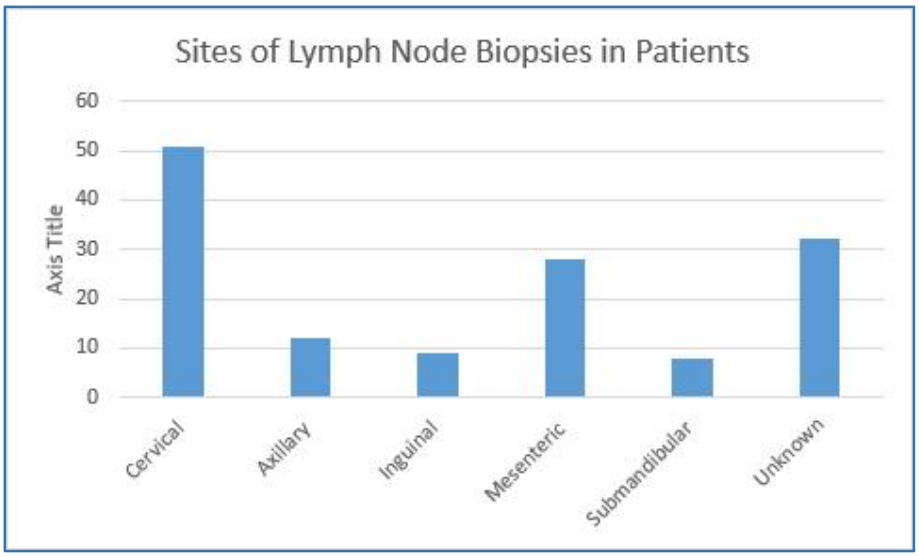

Chart 1. Distribution of Sites of Lymph Node Biopsies

Age (Years)	Hodgkin's Lymphoma		Non-Hodgkin's Lymphoma		Reactive Hyperplasia		Tuberculosis Disease	
	M	F	M	F	M	F	M	F
<10	2	2	1		5	2	6	1
10-19		2	3	1	2		2	5
20-29	4	1	1	1	2	2	2	10
30-39	3					1	2	6
40-49	1	1					1	2
50-59		1	1	1			1	2
60-69								1
≥70	1		3	1	1			
Total	**11**	**7**	**9**	**4**	**10**	**5**	**14**	**27**

Table 5. Age Distribution of Patients with Common Lymph Nodes Pathology

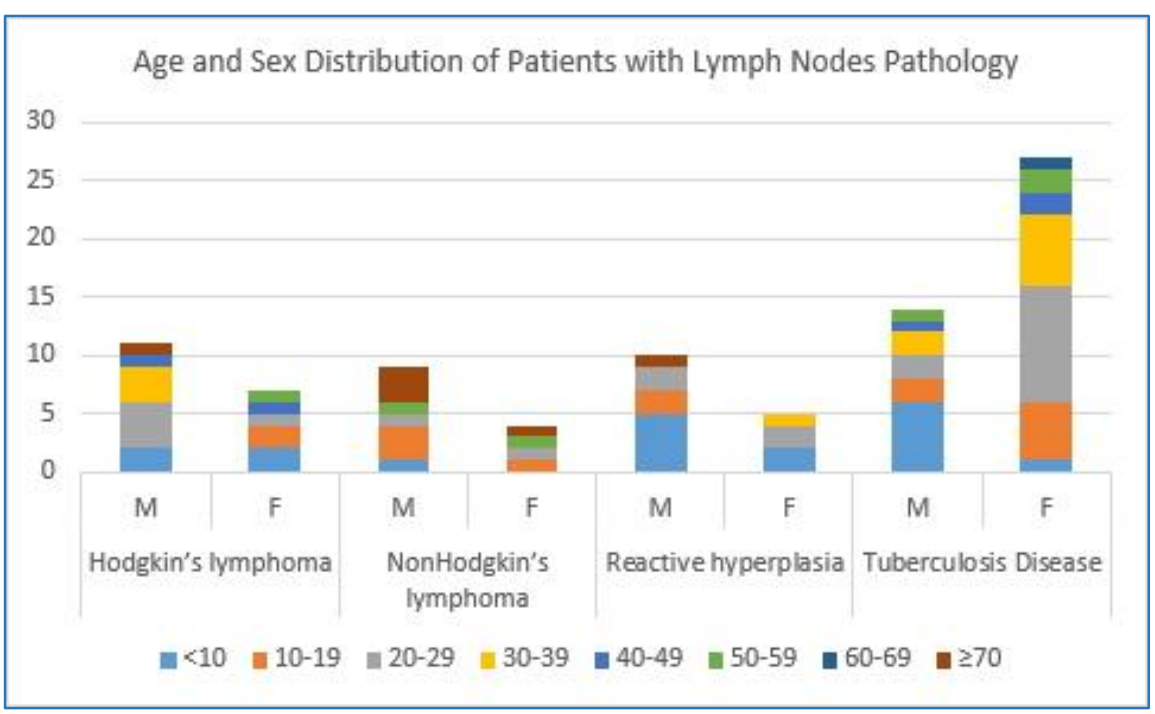

Chart 2. Age Distribution of Patients with Common Lymph Nodes Pathology

Histological Type	Number	Percentage
Nonspecific lymph node disorder	39	27.85%
Tuberculosis	41	29.28%
Other granulomatous lesion	17	12.14%
Lymphoma	31	22.14%
Metastasis	12	8.57%
Total	**140**	**100.00%**

Table 6. Overall Distribution of Cases on Basis of Number and Percentage

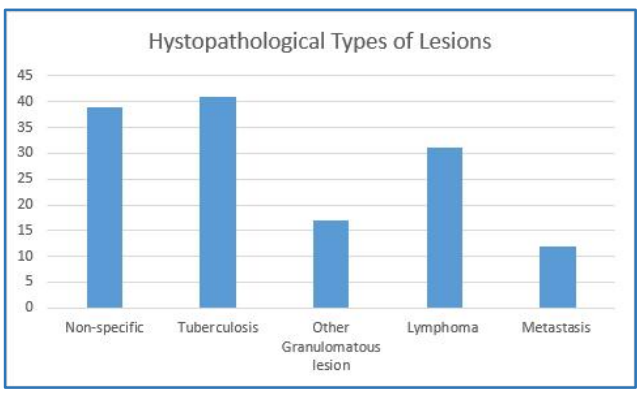

Chart 3. Distribution of Histopathological Types of the Lesions

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