

Original Article

Evaluation of Lymph Node Biopsies in a Peripheral Tertiary Hospital

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Abstract

Background: Lymphadenopathy is a common clinical condition in Bangladesh and histopathological examination is important for diagnosis. **Objectives:** The aim of this study was to detect pattern of benign and malignant conditions of lymphadenopathy. **Methods:** This study was done in the department of Pathology, Khwaja Yunus Ali Medical College & Hospital (KYAMCH), a rural tertiary hospital in Bangladesh. A total of 420 lymph node biopsies from January 2013 to December 2015 were included. **Results:** Among these, 208 (49.5%) were metastatic carcinoma, followed by non-specific lymphadenitis 116 (27.6%), non-hodgkin lymphoma 48 (11.4%) and tuberculosis 35 (8.3%). The mean age \pm SD of patients was 44.82 \pm 15.42 years. Incidence of malignancy was quite higher in compare to previous studies. **Conclusion:** In case of any suspicious lymphadenopathy, histopathology should be done for diagnosis and also to exclude malignancy that will help to reduce patients' morbidity and mortality.

Key words: Biopsy, Histopathology, Lymph node, Malignancy.

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Introduction

Lymph nodes, the most widely distributed and easily accessible lymphoid tissue, are frequently examined for diagnostic purposes. They are encapsulated structures that contain well-organized B-cell and T-cell zones, which are richly invested with phagocytes and antigen-presenting cells. The activation of resident immune cells leads to morphologic changes in lymph nodes¹. Lymphadenopathy means disease of lymph nodes and defined as abnormality in the size and character due to disease process². It is usually used with enlarged or swollen lymph nodes. The physicians decide whether the lymphadenopathy is a finding or require further study including biopsy³. Lymphadenopathy occurs in many diseases including malignancies, infections, autoimmune disorder, some unusual conditions etc². Nodes which enlarge in response to local infection usually expand rapidly and are painful, whereas those

due to haematological disease are more frequently painless⁴. The aim of this study was to analyse histopathological findings of lymph node affected by various diseases.

Materials and Methods

The study consists of 420 surgical specimens of lymph nodes from patients of different age and sex. This was a retrospective study conducted for a period of three years from January, 2013 to December, 2015 in the Department of Pathology, Khwaja Yunus Ali Medical College Hospital (KYAMCH), Enayetpur, Sirajgonj. Only lymph node and as a part of main specimens such as breast, stomach, colon etc. removed from the body were included in this study. After collection, the container labelled with the date, patient's profile etc. A correctly completed request form must accompany each specimen.

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The specimens were processed for microscopic examinations by grossing, proper sectioning, fixation, paraffin blocking, microtome cutting and Haematoxylin & Eosin (H&E) staining. Patient's age, sex and histopathological findings etc. were taken as variables. The data were analysed using software statistical program for social sciences (SPSS).

Results

During these periods, four hundred and twenty (420) specimens were analysed. The results are shown in the following tables and figures. The mean age of patients was 44.82±15.42 years which are shown in table I.

Table-I: Age distribution of the patients (n=420)

Age	Sex		Total	% of Total	Mean age (M±SD)
	Male	Female			
0-20 yrs	32	11	32	7.6%	44.82±15.42
21-40 yrs	137	85	137	32.6%	
41-60 yrs	192	94	192	45.7%	
61-80 yrs	58	15	58	13.8%	
81 and above	1	0	1	.2%	
Total	215	205	420	100.0%	

Among the 420 cases, male cases were 215 (51.2%) and female cases were 205 (48.8%) with M: F of 1.04:1; shown in figure 1.

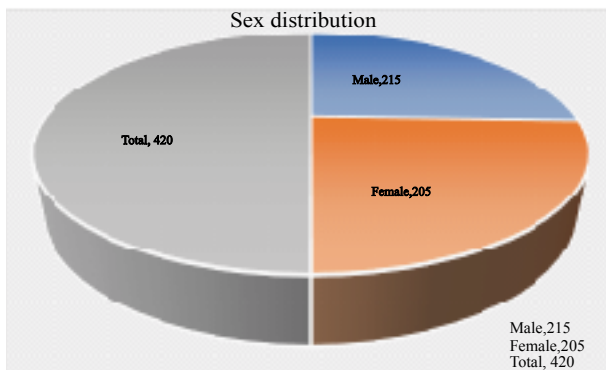


Figure-1: Sex distribution of the patients.

The significant diagnostic findings were showed that, 208 (49.5%) were metastatic carcinoma, followed by non-specific lymphadenitis 116 (27.6%) and non-hodgkin lymphoma 48 (11.4%). Shown in Table II.

Table-II: Diagnostic findings of lymph node specimens (n=420)

Diagnosis	Sex		Total	% of Total
	Male	Female		
Non Hodgkin lymphoma	38	10	48	11.4%
Hodgkin Lymphoma	8	3	11	2.6%
Non-specific lymphadenitis	45	71	116	27.6%
Tuberculosis	15	20	35	8.3%
Metastatic ca	108	100	208	49.5%
Others	1	1	2	0.5%
Total	215	205	420	100.0%

The most common age group was 41- 60 years where disease involvement was 192 (45.7%). In another finding, out of 48 non-hodgkin lymphoma, 25 (52.08%) cases were in 41-60 years' age group and out of 35 TB cases 22 (62.85%) cases were belonging to 21-40 years' age group. As shown in Table III.

Table-III: Distribution of diseases in respect to age group (n=420)

Age	Diagnosis						Total	% of Total
	NHL	HL	NSF	TB	Met ca	Others		
0-20 yrs	3	2	18	6	3	0	32	7.6%
21-40 yrs	12	5	41	22	56	1	137	32.6%
41-60 yrs	25	2	44	6	114	1	192	45.7%
61-80 yrs	7	2	13	1	35	0	58	13.8%
81 and above	1	0	0	0	0	0	1	0.2%
Total	48	11	116	35	208	2	420	100.0%

The most common site of involvement was cervical lymph node 137 (32.6%) followed by axillary 128 (30.5%) and omental & mesenteric lymph nodes 84 (20%). As shown in Table IV.

Table- IV: Distribution of diseases in different sites of lymph node (n=420)

Site	Diagnosis						Total	% of Total
	NHL	HL	NSF	TB	Met ca	Others		
Cervical LN	32	6	30	22	45	2	137	32.6%
SCLN	4	1	2	2	24	0	33	7.9%
AxillaryLN	5	1	41	9	72	0	128	30.5%
Omental & Mesenteric LN	1	0	29	1	53	0	84	20.0%
Inguinal LN	6	2	7	0	8	0	23	5.5%
Other LN	0	1	7	1	6	0	15	3.6%
Total	48	11	116	35	208	2	420	100.0%

On the other hand, among the total 208 metastatic cases, 79 (38.0%) cases were adenocarcinoma, followed by ductal carcinoma 64 (30.8%) and undifferentiated carcinoma 36 (17.3%) as shown in figure 2.

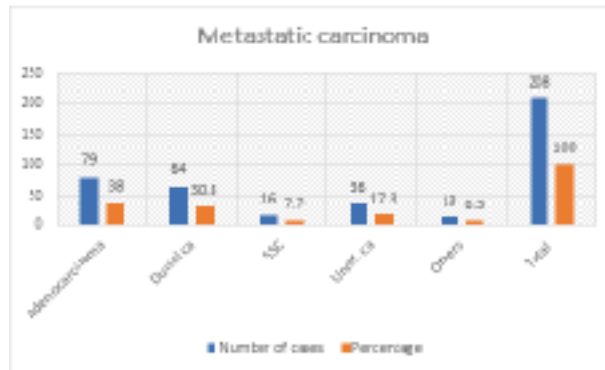


Figure-2: Metastatic lesions of lymph nodes.

Discussion

Lymphadenopathy occurs due to non-specific cause and other various diseases including primary & secondary malignant conditions. This study showed that malignant lesion was more common in lymph node specimens. One of the previous studies of Mousumi Ahmed et al showed that out of total 537 cases, 248 (46.18%) cases were non-specific lymphadenitis, tuberculous lymphadenitis was 178 (33.15%), 49 (9.12%) cases were metastatic carcinoma, NHL were 27 (5.03%) and HL were 21 (3.91%)⁵. Our present study showed higher incidence of malignancy than non-neoplastic conditions. Non-specific lymphadenitis were 116 (27.6%), tuberculous lymphadenitis were 35 (8.6%) and 208 (49.5%) cases were metastatic carcinoma etc. Chhabra S, Mohan H and Bal A studied in India showed, out of 370 lymph node biopsies 120 (32.4%) cases were neoplastic and 250 (67.20%) cases were non-neoplastic. The most common site involved was the neck comprising 69.2% followed by axilla (19.6%) and inguinal region (9.2%). In case of non-neoplastic lymphadenopathy, 164 (65.6%) cases were non-specific findings and TB was in 85 (34%) cases⁶. Prevalence of malignancy in this study was almost similar with other studies noted.

Another study of Olu-Eddo AN, et. al. in Nigeria showed that out of 427 lymph node study, 238 (55.7%) cases were male and 189 (44.3%) cases were female. The most common site of lymphadenopathy was cervical comprising 58.5%. The major diagnostic findings showed TB were 114 (26.7%) and metastatic lesions were 113 (26.5%). The other findings were NHL and HL comprising 69 (16.2%), 43 (10.1%) respectively

& Non-specific lymphadenitis comprising 81 (19.0%)⁷. The commonest age group, metastatic diseases, NHL, HL and non-specific findings were quite similar to our study. The prevalence of all kind of malignancies is higher and lower for TB. A study of Darnal HK et al in Malaysia showed that the commonest findings of lymph node biopsies in adults was malignancy (47%) followed by non-specific lymphadenitis (20%) and granulomatous inflammation (9%) while in children non-specific lymphadenitis comprising 46% followed by granulomatous inflammation (21%) and malignancy (14%)⁸. The present study revealed almost similar findings for benign lesion but higher incidence of malignancy (63.57%). One of the study in Zimbabwe reported out of 2194 lymph node biopsy, non-specific lymphadenitis (33%) were the commonest findings followed by TB (26.7%) and metastasis (12.4%)⁹. Our study was quite similar only for non-specific lymphadenitis and other findings were much differ than their previous study. Our observation revealed metastasis and TB findings were 49.5% and 8.3% respectively. Another study in Nepal showed, out of 100 lymph node biopsies, TB was the commonest lesion (42%) followed by non-specific lymphadenitis (23%), metastatic diseases (10%) and NHL (2%)¹⁰. This study also varies in other findings except non-specific lymphadenitis. Our report showed higher prevalence in malignancies (63.57%) and lower in TB (8.3%).

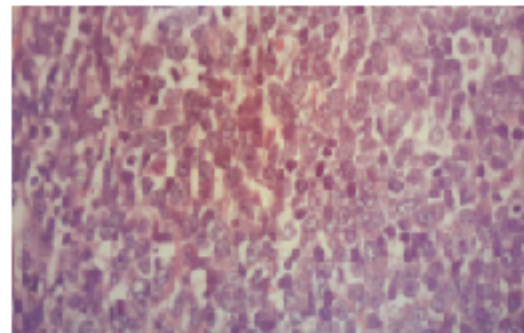


Figure-3: Non-Hodgkin Lymphoma of lymph node.

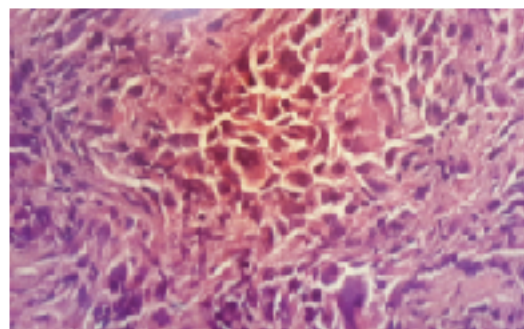


Figure-4: Metastatic deposits in lymph node.

Conclusion

This study reflects that lymph node examination revealed both specific and non-specific causes of lymphadenopathies as well as malignant conditions both primary & secondary carcinoma. Also showed that prevalence of malignancy was increasing day by day. So, any abnormal lymph node enlargement should be evaluated for specific diagnosis and early management of the patients.

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