

Lymph Node Biopsies: A Hospital Based Retrospective Study

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ABSTRACT

Introduction: Lymphadenopathy is a common clinical finding at the outpatient setting that may be caused by a vast array of disease processes.

Methods: A retrospective study to analyze the histopathological diagnosis of lymph node biopsies with respect to age, sex, and site was conducted. All the lymph nodes sent for histopathological examination from August 2003 to 2007 were included.

Results: Of all patients with enlarged lymph nodes, 49% were males (mean age: 34.52 years) and 51% were females (mean age: 38.1 years). The most common diagnosis was tubercular lymphadenitis (42%), followed by non-specific (reactive) lymphadenitis (23%), metastatic deposits (10%), non-specific granuloma (3%), NHL (2%), and lymphadenitis due to various other causes (7%). Thirteen percent of the biopsied lymph nodes were normal in morphology. Most common site of lymph node enlargement was neck (44%) followed by mesentery (19%) and axilla (16%). Most of the patients were in the age group of 21-30 years (20%).

Conclusions: The neck lymph nodes were the most commonly sent nodes for histopathological examination and tuberculosis was the most common diagnosis.

Key Words: cancer, cervix, endometrium, ovary, vagina, vulva

INTRODUCTION

Lymphadenopathy is defined as an abnormality in the size or character of lymph nodes caused by the invasion or propagation of either inflammatory cells or neoplastic cells into the node. It results from a vast array of disease

processes and among the serious illnesses that can present with lymphadenopathy, perhaps the most concerning to the patient and physician alike is the possibility of underlying malignancy.^{1,2}

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Lymphadenopathy is classically described as a node larger than 1 cm, although this varies by lymphatic region. Palpable supraclavicular, iliac, or popliteal nodes of any size and epitrochlear nodes larger than 5 mm are considered abnormal.^{3,4} There is no uniform nodal size at which one should become suspicious of a neoplastic etiology.^{5,6} Increasing size and persistence over time are of greater concern for malignancy than a specific level of nodal enlargement and many a time biopsy is required for final histopathological diagnosis.

METHODS

A retrospective study was conducted at Nepal Medical College Teaching Hospital between August 2003 and August 2007 including the cases of progressively enlarging and/or persistent lymph nodes that had been biopsied. Institutional approval was taken. The total number of cases was 100. Diagnosis made on the FNAC or other methods were excluded from the study. Biopsies from superficial lymph nodes (e.g. cervical, axillary and inguinal) as well as mesenteric lymph nodes and the ones sent as part of main specimen such as in surgery of bowel, gall bladder, breast were included. Results were interpreted with respect to age, sex and site of lymphadenopathy on the basis of histopathological diagnosis. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version-12 for windows.

RESULTS

Of all the patients (n = 100) who underwent lymph node biopsy, 49% were males (34.52 ± 22.39 years) and 51% were females (38.10 ± 18.36 years), male to female ratio being 0.96:1. Most of the patients were in the age group of 20-29 years (20%) followed by 10-19 years (18%) and more than 60 years (15%). Fourteen percent of the patients were in the age group of 40-49 years, 12% each in 30-39 and 50-59 years age group and only 9% in 0-9 years age group. Amongst males, maximum number of cases was in the age group of 20-29 years (26.5%) followed by 10-19 years age group (16.3%) while amongst females, maximum number of cases were in the age group of 40-49 years (21.6%) followed by 10-19 years age group (19.6%) (Figure 1, Table 1).

Table 1. Distribution of disease with respect to age

Age group	TB LA	Reactive (NS) LA	Mets	NHL	Granuloma (NS)	Others	Normal LNs	%
0-9	-	3	-	-	1	3	2	9
10-19	10	5	-	-	-	2	1	18
20-29	14	3	-	-	1	1	1	20
30-39	62		1	-	-	-	3	12
40-49	7	1	2	-	-	-	4	14
50-59	2	6	3			1	-	12
>60	3	3	4	2	-	1	2	15
Total	42	23	10	2	3	7	13	100

TB – Tuberculosis, LA – Lymphadenopathy, NS - Non-specific, Mets - Metastatic deposits, NHL - Non Hodgkin's Lymphoma, LNs - Lymphnodes

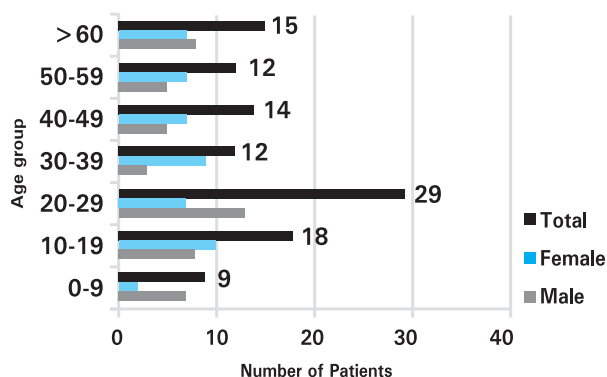


Figure 1. Age and sex distribution of the patients (n = 100)

Forty nine percent of the nodes were from the neck region, 19% from the mesentery, 16% from the axilla, and 7% from the inguinal region. Nine percent of the nodes were received as part of main specimen (perivisceral) of bowel, GB, breast and thyroid (Table 2).

Table 2. Distribution of disease with respect to site

Site of LAP	TB LA	Reactive (NS) LA	Mets	NHL	Granuloma (NS)	Others	Normal LNs	%
Neck	27	11	2	1	2	3	3	49
Mesentery	9	4	1	-	-	2	3	19
Axilla	5	5	1	1	1	1	2	16
Perivisceral	-	1	5	-	-	-	3	9
Inguinal	1	2	1	-	-	1	2	7
Total	42	23	10	2	3	7	13	100

LA – Lymphadenopathy, TB – Tuberculosis, NS - Non-specific, Mets - Metastatic deposits, NHL - Non Hodgkin's Lymphoma, LNs - Lymphnodes.

Forty two percent showed microscopic findings consistent with tubercular lymphadenitis, 23% showed findings of reactive lymphadenitis, and 13% showed morphology of normal lymph node. Findings of metastatic deposit were seen in 10% of the lymph nodes. Two cases each of NHL, dermatopathic lymphadenopathy, and fibrotic lymphadenopathy were reported. One case each of acute necrotizing lymphadenopathy, LN with extensive hemorrhagic areas, and LN with abscess and hemorrhage was also noted (Figure 2).

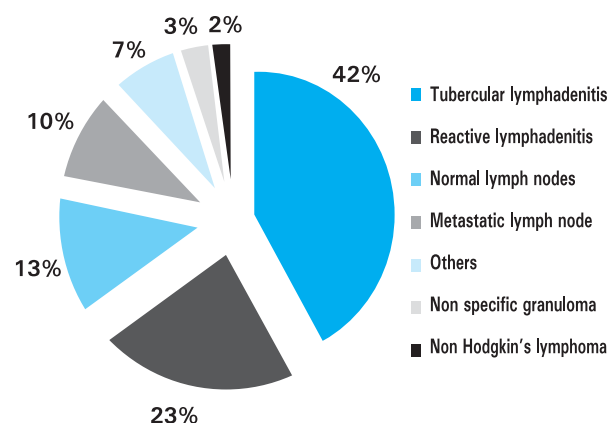


Figure 2. Histopathological diagnosis of lymph node biopsies

Histopathological diagnosis of tuberculosis was made in 42 cases (42%) of which twenty six cases were females (61.9%) and 16 cases (38.1%) were males, male to female ratio being 1:1.62. Mean age was 32.95 ± 16.130 . Most of the patients were in the age group of 20-29 years (33.3%) followed by 10-19 years (23.8%) and 40-49 years (16.7%). There were no cases of tuberculosis in the age group of 0-9 years (0%).

Neck was the most common site (64.7%), followed by mesentery (9%), axilla (5%) and inguinal region (1%). Regarding metastatic deposits in the lymph nodes, 90% were above the age of 40 years and 40% of these nodes were the ones sent along with gastrectomy specimen. There were two cases of NHL both of which were males above the age of 60 years. Amongst the three cases of granulomatous enlargement of lymph nodes, one showed histopathological findings consistent with atypical mycobacterial infection and the rest two showed findings suggestive of fungal granuloma.

DISCUSSION

Lymph node enlargement may occur because of proliferation of cells of the lymphocyte and monocyte-macrophage system usually in response to antigenic stimulus or infiltration by

inflammatory cells in infections involving lymph nodes (lymphadenitis), in situ proliferation of malignant lymphocytes or macrophages, infiltration of lymph nodes by metastatic malignant cells or infiltration of lymph nodes by metabolite laden macrophages in lipid storage diseases.⁷ Analysis of lymphadenopathy in primary care practice has shown that more than two-third of patients have non-specific causes or upper respiratory illnesses (viral or bacterial), and less than 1% have malignancy.⁸ In one study, 186 of 220 patients (84%) referred for evaluation of lymphadenopathy had a benign diagnosis. One hundred and twelve of 186 (63%) patients with benign lymphadenopathy had a non-specific or reactive etiology (no causative agent found) and the remainder had a specific cause.⁹ Similarly, in other series, the percentage of above findings ranged from 35.6% (614 of 1724 patients) to 65.6% (164 of 250 patients).^{7,10} In present study only 23% lymph node biopsies showed non-neoplastic non-infectious reactive lymphadenopathy while in the rest there were identifiable causes demonstrated. One study showed maximum number of patients in the age group of 10-30 years (55.2%) which is similar to our study though the percentage is low (38%).⁷

Tubercular lymphadenitis is still a common cause of cervical lymphadenopathy. The condition most commonly affects children and young adults, but can occur at any age.¹¹ The commonest diagnosis in the present study was tubercular lymphadenitis (42%), most of the patient being in the age group of 10-29 years. A study done by Danpat et al. revealed tuberculosis in 51% of cases.¹² Several other studies have also reported high incidence of tuberculosis in biopsied lymphnodes.^{7,13-18} The commonest site of lymphadenopathy is neck.^{7,13-16-19} In our study 49% were the neck lymph nodes (69% of all peripheral lymph nodes) of which 55.1% (n=27) cases were tuberculosis.

The fourth common diagnosis was metastatic lymph nodes in 10 cases. Ninety percent of the patients were above the age of 40 years which is comparable to other studies.^{14,17,20} Out of remaining ten, four lymph nodes were received along with the main specimen of carcinoma stomach, one with adenocarcinoma of gall bladder. Three lymph nodes were from neck, out of which one was from papillary carcinoma thyroid and the other two from unknown primary site.

CONCLUSIONS

Neck lymph nodes were the most commonly sent nodes for histopathological examination and tuberculosis was the most common diagnosis. Therefore persistent lymphadenopathy must not be overlooked but evaluated by biopsy. Moreover this study will be a cornerstone for prospective studies to be conducted in the future to establish the etiology and define the age and sex distribution.

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