



## CYTOLOGICAL SPECTRUM OF LYMPH NODE LESIONS ON FNAC IN A TERTIARY CARE HOSPITAL: A RETROSPECTIVE STUDY OF 530 CASES

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### ABSTRACT

**Introduction:** Lymphadenopathy is one of the most commonly encountered clinical problem with etiologies varying from non-neoplastic to neoplastic conditions like inflammation, infection, primary or metastatic tumors. **Materials and methods:** This study was carried out in Department of Pathology at a Tertiary Care Centre from Nov. 2017 to Oct. 2018 to study the various cytomorphological features of neoplastic and nonneoplastic lesions of lymph nodes by FNAC in patients presenting with lymphadenopathy. **Results:** A total of 530 aspirates were obtained out of which 295 were males and 235 females. The age of the patients varied from 1 year to 81 years with a mean age of 41.5 years. A male to female ratio of 1.25:1 was noted. The most common group of lymph nodes aspirated were cervical (52.80%). A cytological diagnosis was made in 516 cases while no opinion was possible in 14 cases due to the inadequacy of the aspirates. Of the 516 cases, 199 cases (38.56%) were diagnosed as reactive hyperplasia, followed by 158 cases (30.62%) of tubercular lymphadenitis and 101 cases of metastatic malignancy i.e., 19.57%, 23 cases (4.46%) of acute suppurative lymphadenitis and 28 cases (5.43%) of nonHodgkin's lymphoma (NHL) and 5 cases (0.97%) of Hodgkin's lymphoma, 1 case (0.19%) of Rosai Dorfman's Disease and 1 case (0.19%) of cryptococcal lymphadenitis. **Conclusion:** The most common cause for enlarged lymph nodes were reactive lymphadenopathy followed by tuberculous lymphadenitis

### KEYWORDS

FNAC ,lymphadenopathy, tuberculosis.

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### Introduction

Lymphadenopathy is one of the most commonly encountered clinical problem with etiologies varying from non-neoplastic to neoplastic conditions like inflammation, infection, primary or metastatic tumors [1]. Lymph nodes are an important part of immune system which becomes enlarged in a wide spectrum of diseases including infections & malignancies. They react to a variety of microorganism & nonspecific stimuli by expansion of the follicles centres or interfollicular tissue. This results in enlargement of nodes. Enlarged lymph nodes were the first organs to be sampled by fine needle aspiration [2]. Fine needle aspiration cytology (FNAC) has an important diagnostic role in the evaluation of peripheral lymphadenopathy and also helps in deciding the appropriate management [3]. It is very simple, reliable, cost effective and safe alternative to excision biopsy [4]. Our study highlights the cytomorphological spectrum of lymph node lesions in tertiary care hospital.

### Material And Methods

This study was carried out in Department of Pathology at a Tertiary Care Centre to study the various cytomorphological features of neoplastic and nonneoplastic lesions of lymph nodes by FNAC in patients presenting with lymphadenopathy. This was a retrospective study conducted over a period of 1 year w.e.f 1st nov. 2017 to 31st oct. 2018 and a total of 530 cases of lymphadenopathy of all age groups and both genders with varied etiologies were considered. Study participants were subjected to standard FNA procedure after taking consent from the patient or guardian. After studying all the clinical data, the smears were examined under the microscope. Based on the cellularity, the smears were categorized as adequate for opinion and inadequate for opinion.

### Results

A total of 530 aspirates were obtained out of which 295 were males and 235 females. The age of the patients varied from 1 year to 81 years with a mean age of 41.5 years. The maximum incidences of cases were seen in the age range of 20-30 years. A male preponderance with a male to female ratio of 1.25:1 was noted.

Lymph nodes of varying sizes were subjected to FNAC. The smallest lymph node measured 0.5 cm and the largest measured 5 cm in

maximum dimensions. The most common group of lymph nodes aspirated were cervical (52.80%), submandibular and supraclavicular (14.30%) each, axillary (10%) and inguinal (7.6%) and generalized (1%). A cytological diagnosis was made in 516 cases while no opinion was possible in 14 cases due to the inadequacy of the aspirates. Of the 516 cases, 199 cases (38.56%) were diagnosed as reactive hyperplasia, followed by 158 cases (30.62%) of tubercular lymphadenitis and 101 cases of metastatic malignancy i.e., 19.57%, 23 cases (4.46%) of acute suppurative lymphadenitis and 28 cases (5.43%) of nonHodgkin's lymphoma (NHL) and 5 cases (0.97%) of Hodgkin's lymphoma, 1 case (0.19%) of Rosai Dorfman's Disease and 1 case (0.19%) of cryptococcal lymphadenitis. The majority of cases recorded were those of reactive hyperplasia (38.56%) in which 61.72% were from the cervical group of lymph nodes.

A total of 138 cases (26.74%) of tuberculosis were recorded in the study. Of these 36 cases (26.08%) were positive for acid-fast bacilli (AFB). Necrosis was seen in 48 cases (34.78%). Granulomas were seen in a total of 57 cases (41.30%). The background in these cases mainly comprised of a mixed population lymphoid cells.

**Table-1: Distribution of cases according to age & sex**

Age	Males	Females	Total
0-10	34	26	60
10-20	42	32	74
20-30	83	76	159
30-40	46	35	81
40-50	37	28	65
50-60	23	13	36
60-70	17	19	36
70-80	7	4	11
80-90	6	2	8
Total	295	235	530

**Table- 2: Cytological spectrum of non-neoplastic lesions in lymph nodes.**

Non-neoplastic Lesions	No. of Cases (%)
Reactive lymphadenitis	199(38.56%)

Tuberculous lymphadenitis	158(30.62%)
Suppurative lymphadenitis	23(4.46%)
Rosai-Dorfman's disease	1(0.19%)
Cryptococcal lymphadenitis	1(0.19%)
Total	382(74.03%)

**Table 3: Cytological spectrum of neoplastic lesions in lymph nodes.**

Neoplastic Lesions	No. of Cases (%)
Metastatic lesions	101(19.57%)
Non-Hodgkins lymphoma	28(5.43%)
Hodgkins lymphoma	5(0.97%)
Total	134(25.97%)

The metastases were most commonly of squamous cell carcinoma 64 cases (12.45%) , followed by adenocarcinoma in 32 cases(6.20%) . Other less common metastases were: poorly differentiated carcinoma 11 (2.13%), malignant melanoma 1 (0.19%), papillary carcinoma of thyroid 2 (0.38%), anaplastic carcinoma of thyroid 1 (0.06%), carcinoma of breast 1 (0.19%) and undifferentiated carcinoma 5 (0.97%).

### Discussion

In the present study, we present our experience with 530 FNAC cases of palpable lymph node swellings, whose diagnosis was based on cytomorphological findings. FNAC is a simple, safe, reliable, rapid, and inexpensive method of establishing the diagnosis of lesions and masses in various sites and organs[5].

In this study, maximum number of cases were recorded in age group of 20-30 years which was similar in studies done by others like Pavithra et al[8], Dukare et al, [9] and Pandav et al, [10] . As compared to other studies a slight male predominance was noted in the current study. These findings are comparable with studies conducted by Gupta et al. and Khajuria et al.[6,7].

Cervical lymph nodes were the most common group of lymph nodes involved (52.80%) . Similar findings were also observed by the work done by Pavithra et al. and Mohanty et al

In the current study, majority of the cases recorded were those of reactive hyperplasia (38.56%) amongst which most of them were from the cervical group of lymph nodes which is in accordance with the studies done by Narang et al., and Khajuria et al. Reactive hyperplasia is a common nonspecific form of lymphadenopathy due to a variety of causes ranging from bacterial, viral or nonspecific etiology.

Tuberculous lymphadenitis cases seen in our study were 30.62% cases comparable to study done by Patra et al. which had 37.8 % cases of tuberculous lymphadenitis .

In the current study, metastatic carcinoma was observed in 19.57 % of cases which is comparable to BT Patra AK et al and Dr. Akanksha Mishra et al.

In the present study, NHL and HL constituted 5.43% cases and 0.97% cases respectively which was comparable to study done by Sharma et al which showed 2.3% and 0.4% cases of NHL and HL respectively.

### Conclusio

To conclude our study, the most common cause for enlarged lymph nodes were reactive lymphadenopathy followed by tuberculous lymphadenitis and followed by malignant neoplasm, especially metastatic lesions most common being squamous cell carcinoma.

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