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Original Research Article

Spectrum of Lymph Node Lesions on Fine Needle Aspiration Cytology: Study of 187 Cases at Tertiary Care Hospital

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ABSTRACT

Background: For assessment of various disorders, Fine needle aspiration cytology (FNAC) is a reliable, simple, cost effective method. Lymph node enlargement is seen in variety of reactive inflammatory to neoplastic conditions related to regional or systemic diseases.
Material and Method: This retrospective study was done at our institute in Department of Pathology from October 2013 to March 2015. The study includes 187 patients with lymphadenopathies at various sites. Fine needle aspiration cytology (FNAC) was done and smears were prepared and stained with Hematoxylin and eosin, May-Grunwald-Giemsa and Papanicolaou (PAP) stains. Other stains like Ziehl-Neelson (ZN), Periodic Acid Schiff (PAS), etc were done wherever required. The results were critically analyzed and correlated with their etiologies.
Result: In this study total 187 cases of lymphadenopathy were studied. The spectrum of various lymph node lesions on cytomorphological findings were; Acute non-specific lymphadenitis cases were 7 (3.74%), Chronic non-specific lymphadenitis cases were 10 (5.34%), Granulomatous lymphadenopathy cases were 7 (3.74%), Tuberculous lymphadenitis cases were 65 (34.75%)' Reactive lymphadenitis cases were 29 (15.50%), Metastasis to lymph node cases was 59 (31.55%), Lymphoma cases were 10 (5.34%). Unsatisfactory smears (9) were excluded from the study. The detailed clinical data, relevant investigations were taken for supporting the diagnosis.
Conclusion: Lymph node aspiration study is an important tool for diagnosis of various disorders and it also helps in primary screening procedure for number of clinical conditions and proper management of patient. It is a safe, simple, cost effective and reliable technique for establishing the diagnosis.

Key words: Aspiration cytology, lymphadenopathies, Cytomorphology.

INTRODUCTION

Lymphadenopathy is one of the most common clinical presentations of the patient. The etiology varies from an inflammatory to malignant conditions. Different patterns observe in fine needle aspiration cytology aspirates should be properly evaluated for making definite diagnosis or to give suspicious of particular disease condition. [1] FNAC is routinely performed as primary diagnostic work-up. It also helps in recurrent disease, staging in neoplastic conditions and to obtain material for ancillary studies. [2,3]

The present study was undertaken to find out spectrum of lymph node lesions evaluated on cytomorphological features with its clinical correlation.

MATERIALS AND METHODS

The study was conducted at Krishna Institute of Medical Sciences

University, Karad. The study design was retrospective, analytic type. Total of 187 cases of lymphadenopathy at various site were taken from October 2013 to March 2015 (18 months). The clinical protocol of each case was prepared. Informed written consent from the patient was taken. The FNAC was performed using sterile, disposable 22 gauge needle with 10 ml syringe. Alcohol fixed and air dry smears were prepared and stain with H&E, PAP, MGG. The special stain like ZN (20%), PAS, etc were done whenever required. Smears were analyzed by cytopathologist and lesions were categorized.

RESULTS

Table.1. Cytomorphological patterns of lymphadenopathy cases

Cytological diagnosis	No. of cases	%
Acute non-specific inflammation	7	3.74
Chronic non-specific inflammation	10	5.34
Granulomatous lymphadenopathy	7	3.74
Tuberculous lymphadenopathy	65	34.75
Reactive hyperplasia	29	15.50
Metastatic to lymph node	59	31.55
Lymphoid malignancy	10	5.34
Total	187	

Table.2.Age distribution of lymphoadenopathy cases

Age (Years)	Lymphadenopathy cases	%
<10	12	6.41
11-20	19	10.16
21-30	31	16.57
31-40	33	17.64
41-50	22	11.76
51-60	29	15.50
61-70	31	10.16
<70	10	5.34
Total	187	

In this study total 187 cases of lymphadenopathy were studied. The spectrum of various lymph node lesions on cytomorphological findings were (Table 1); Acute non-specific lymphadenitis cases were 7 (3.74%), Chronic non-specific lymphadenitis cases were 10 (5.34%), Granulomatous lymphadenopathy cases were 7 (3.74%), Tuberculous lymphadenitis cases were 65 (34.75%)' Reactive lymphadenitis cases were 29 (15.50%), Metastasis to lymph node cases was 59 (31.55%), Lymphoma cases were 10 (5.34%). Unsatisfactory smears (9) were excluded from the study. The detail clinical data, relevant investigations were taken for supporting the diagnosis. The histopathological correlation was done wherever lymph node biopsy was done.

Table.3. Sex wise distribution of lymphadenopathy cases

Male cases	Female cases	M:F Ratio
101	86	1.2:1

Table.4. Site wise distribution lymphadenopathy cases

Site	Lymphadenopathy cases	%
Cervical	164	87.70
Axillary	18	9.62
Inguinal	5	2.67

DISCUSSION

FNAC is widely used diagnostic method for the assessment of various non-neoplastic and neoplastic lymphoid lesions. FNAC is replacing excisional lymph node biopsy now a days. The clinical findings with cytomorphological features were correlated to give patterns of lymph node lesions, which will guide to clinicians in early diagnosis and treatment of the patients. In this study we have presented our experience of 187 cases of lymphadenopathies. In present study of lymphadenopathy the age range from 4 months to 78 years. In which maximum number of cases was in age group were between 31- 40 years of age (Table 2). In our study male to female ratio was 1.2:1 (Table.3). The cervical group of lymph node was most common involved in lymphadenopathy cases. (Table 4). Tuberculous lymphadenitis 65 cases (34.75%) was the most common cause of lymphadenopathy followed by metastatic lymphadenopathy 59 (31.55%). In Indian population tuberculous lymphadenopathy remains the most common cause for superficial lymphadenopathy, [4-6] while it is very low (1.6%) in developed countries. The tuberculous lesions were confirmed on various cytomorphological features. The ZN stain (20%) was done to demonstrate acid fast bacilli (AFB) in smears. Other relevant clinical data, laboratory investigations, radiological findings were taken for supporting diagnosis of tuberculous lymphadenitis. The other granulomatous lymphadenitis (7 cases,

3.74%) were categorized according to their etiology and separated from tuberculous lymphadenitis.

The cervical group of lymph node was most common involved in metastatic lesions. [7] Metastatic carcinoma was observed in 59 cases (31.55%) in our study. Reported cases by Ghari Magar et al [8] (18%), Patel MM et al [9] (27.06%) showed metastatic lymphadenopathy. We are having a radiotherapy and chemotherapy unit in our hospital for that reason probably the incidence of metastatic lymphadenopathy cases was more, as many cases were referred for treatment.

The lymphoid malignancies were noted in 10 cases (5.34%) on aspiration. These cases were confirmed on lymph node biopsies and relevant investigations.

Reactive hyperplasia related lymphadenopathy was noted in 29 cases (15.50%) in our study. The study by Khan A et al [10] showed 28%, Javel et al [11] 16.66% cases. Our patients were received medical treatment (mainly antibiotics) and they respond to it, still lymphadenopathy persist, repeat FNAC was performed.

The cases of acute non-specific lymphadenitis were 7 (3.74%) in our study. These cases were mostly showed suppurative inflammation which was other than tuberculous etiology.

The purpose of this study was to investigate pattern of lymphadenopathy among the patients presented to our tertiary care institute. This will be helpful for efficacy of fine needle aspiration cytology in diagnosis and better care of the patient.

CONCLUSION

Cytomorphological features of lymph node FNAC, used in conjunction with clinical details, laboratory investigations, imaging study will be very helpful for diagnosing various disorders. It will be cost effective, safe, and reliable method for early diagnosis and treatment of the patients.

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