



Original Research Article

Pattern of Lymphadenopathy on Fine Needle Aspiration Cytology: A Study Done at District Hospital Srinagar (JLNM)

Authors

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Introduction

Lymphadenopathy is one of the most common clinical presentations of patients attending the outpatient department. The degree and pattern of morphological changes depend on the inciting stimulus and the intensity of the response. Thus, lymphadenopathy may be an incidental finding and/or primary or secondary manifestation of underlying diseases which may be neoplastic or non-neoplastic.^[1]

Fine needle aspiration cytology (FNAC) is a simple, safe, reliable, rapid and inexpensive method of establishing the diagnosis of lesions and masses in various sites and organs⁽²⁾. Lymph node aspiration is of great value for the diagnosis of lymphadenitis, lymphomas and metastatic carcinoma^(3,4). The value of FNA also lies in giving early direction of appropriate investigation of the lesion. Aspirates from lymph nodes are usually very cellular and their interpretation varies from clear diagnosis to firm request for histopathology. The knowledge of pattern of

lymphadenopathy in a given geographical area is essential for making a confident and definite diagnosis or suspecting a disease.

Aim

To study the non neoplastic and neoplastic lesions of enlarged lymph nodes by FNAC in patients presenting with lymphadenopathy at JLNM district hospital Rainawari Srinagar.

Materials and Methods

The present prospective observational study was conducted in department of pathology JLNM hospital Rainawari for a period of 20 months from Jan 2016 to Oct 2017. The study was conducted on 101 patients including all age groups and both sexes who underwent FNAC for palpable lymphadenopathy, either single or multiple at JLNM hospital in various departments (surgery, medicine, paediatrics, dermatology, orthopaedics and ENT).

A brief clinical history followed by physical examination was done and the findings were noted. FNAC was performed under aseptic precautions using 22-24 Gauge needles attached to 20cc syringes. The aspirated material was smeared on to the glass slides. The smears were then fixed in 95% ethyl alcohol and stained with Hematoxylin and Eosin stain. The May Grunwald Giemsa (MGG) stain was done on air dried smears. Zeil-Neelson staining was done whenever required. The cytological diagnosis for each case was based on cytomorphology and available clinical information.

Observation and Results

During the study period A total number of 101 cases were studied. Among them, 55(54.45%) patients were male and 46(45.54%) were female patients (fig 1), the male: female ratio was 1.19:1. Males showed preponderance of Reactive hyperplasia and, Lymphoma, metastatic carcinoma and tuberculous lymphadenitis showed equal preponderance in both sexes. The age of the patients ranged from 2 years to 68 years with mean age of 38 years. The peak incidence for non neoplastic lesions were seen between 11 to 30 years whereas peak age incidence for neoplastic lesion was seen in 31 to 50 years.(Table 1)

Out of 101 cases, 87 (86.13%) were non neoplastic whereas 14(13.86%) were neoplastic

malignant cases. Thus non neoplastic lesions were more common than neoplastic. Most common lesion on cytology was found to be reactive hyperplasia 74 cases (73.26%), followed by tuberculosis 12 cases (11.88%), Metastatic carcinoma was seen in 6 cases (5.94%), 8 Lymphoma cases (7.92%). Non Hodgkin lymphoma cases (5.94%) were more than Hodgkin lymphoma cases (1.98%) and granulomatous lymphadenitis was seen in 5(4.95%) of patients. (Fig 2).

In our study Cervical lymph nodes were enlarged in 60 of 101 cases (59.40%) followed by submandibular lymph nodes in 13 cases (12.87%), axillary in 12 cases (11.88%), supraclavicular lymph nodes in 6 cases (5.94%), inguinal in 5 cases (4.95%), submental in 3 cases(2.97%) and multiple nodes in 2 cases (1.98).(Table 2)

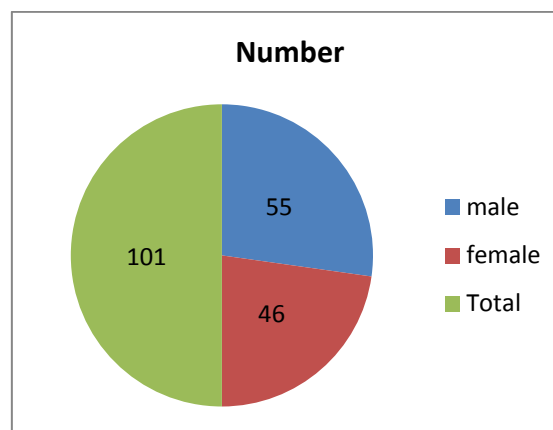


Fig 1 showing sex distribution of lymphadenopathy

Table 1 Age and Sex distribution of patients of lymphadenopathy (N=101)

Age group	Reactive hyperplasia		Tuberculosis		Granulomatous		Metastatic carcinoma		Lymphoma			
	M	F	M	F	M	F	M	F	M	F	M	F
<10	8	4	0	0	0	0	0	0	0	0	0	0
11-30	23	19	1	2	1	0	0	0	0	1	0	0
31-50	9	9	3	2	2	2	3	0	1	0	5	0
51-70	1	1	0	0	0	0	0	3	0	0	1	0
TOTAL	41	33	4	4	3	2	3	3	1	1	6	0
M:F ratio	[1.24]		[1]		[1.5]		[1]		[1]		[6]	

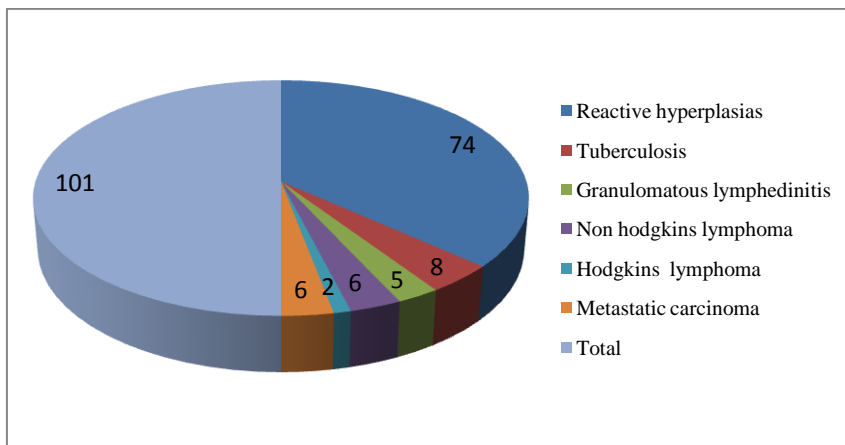


Fig 2 showing Cytologic diagnosis of cases of lymphadenopathy (N =101)

Table 2 Sites of lymph node involvement (n= 101).

Site	Number of cases	Percentage (%)
Cervical	60	59.40
Axillary	12	11.88
Supraclavicular	6	5.94
Inguinal	5	4.95
Submandibular	13	12.87
Submental	3	2.97
Generalized	2	1.98
Total	101	100

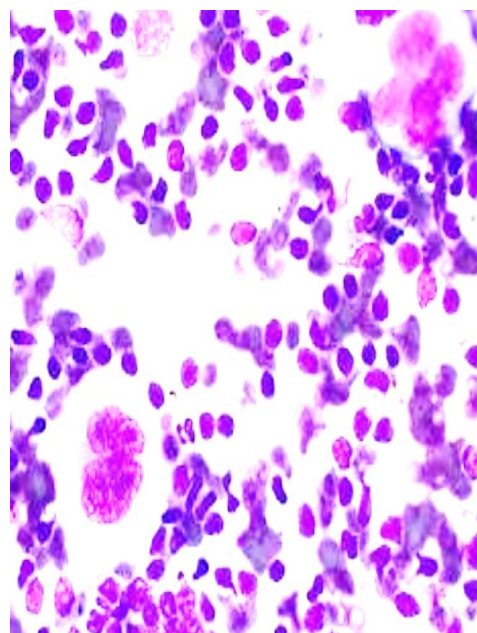


Fig 4 microphotograph showing RS cells in HL 400X MGG

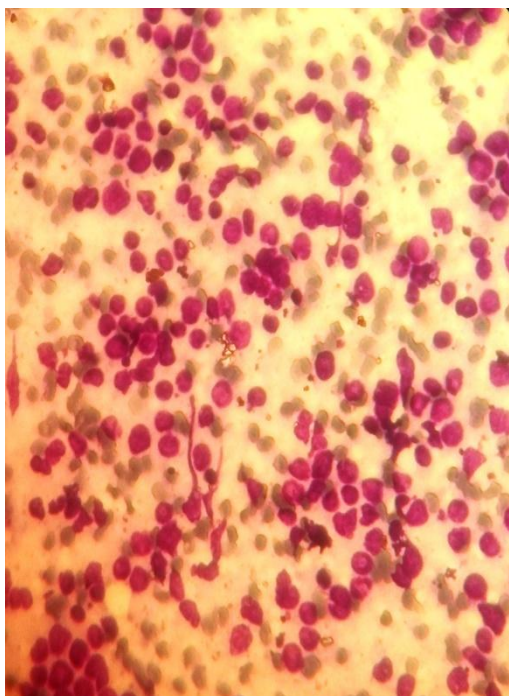


Fig 3 microphotograph showing large Lymphoid cells. NHL 400X Giemsa stain

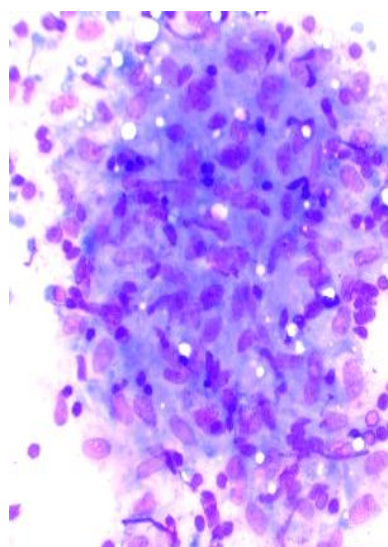


Fig 5 microphotograph showing Epithelioid granuloma 400X



Fig 6 showing acid fast bacilli ZN stain 1000X

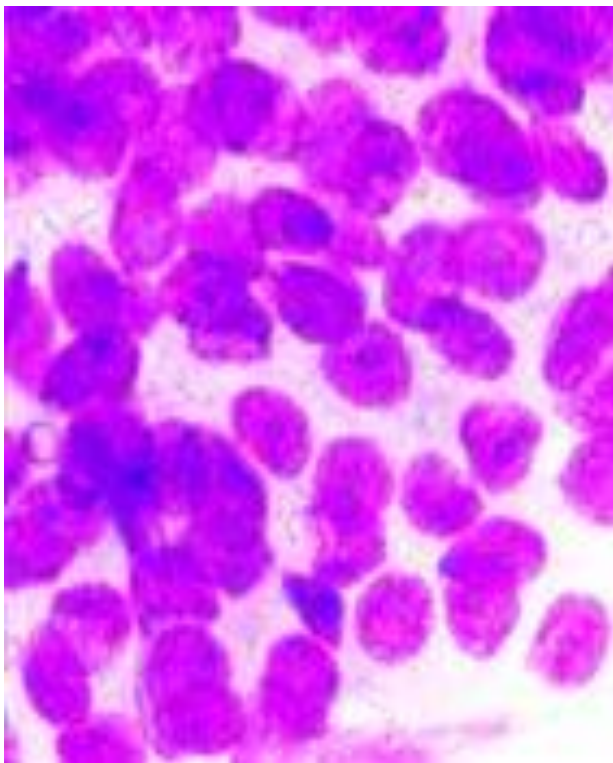


Fig 7 showing metastatic deposits.400X

Discussion

Lymphadenopathy is a commonly encountered clinical condition requiring prompt and accurate diagnosis so that a proper treatment protocol can be started as early as possible. FNAC is an important diagnostic tool to aid in the diagnosis of lymph node lesions. In developing countries where facilities for biopsy are not readily available, It is inexpensive, safe and quick and reduces the need for surgical biopsy. We have

presented our experience of 101 cases of lymphadenopathy over a period of 18 months at a district hospital (JLNM) Srinagar. This hospital caters mostly urban population. Out of 101 cases, 55 cases (54.45%) were males and 46 (45.94%) cases were females. Males showed preponderance of Reactive hyperplasia, Lymphoma. similar to studies done by Pavithra et al⁽⁵⁾, Fatima et al⁽⁶⁾ and Chand et al⁽⁷⁾. In our study metastatic carcinoma, and tuberculous lymphadenitis showed a same preponderance in both sexes but the number of cases were very less. In our study, the majority of the patients were in the age group 11–30 years. This correlated with the study done by Badge, et al where majority of the patients were in the age group 21–30 years^[8] and by Chandanwale et al., where maximum numbers of cases were seen in the age group of 21–40 years.^[9]

Majority of lymphadenopathies in this study were due to benign conditions (86.13%), Thus non neoplastic lesions were more common than neoplastic, which was in accordance with an earlier study, in which 86.4% of the lesions were benign^[10]. The results were also comparable to study done by Mohanty et al⁽¹¹⁾, and Adhikari P et al⁽¹²⁾ In the current study, Reactive lymphadenitis was the most common lesion and was reported in 73.26% cases. This result was comparable to other studies, where its incidence ranged from 18.9% to 62%^[7,10,11,12,13,14]. The second common diagnosis in the present study was Tubercular lymphadenitis and lymphomas accounting to 7.92% of cases each. Malignant lymphomas in our study constituting 7.92% of all the cases. Similar observations were seen in other studies^[6,7,13,15]. Non –Hodgkin's Lymphoma was reported in 6(5.94%) out of 8 lymphoma cases whereas 2(1.98%) cases of Hodgkin's lymphoma were reported. Lymph node aspirates in 5.94cases showed metastatic deposits predominantly squamous cell carcinoma. Similar results were obtained in the study conducted by Pavithra et al^[5]. The cervical lymph node 60 (59.40%) was the most common node to be involved by all types of lymphadenopathy followed by submandibular and

axillary nodes. Similar observations have been made in other studies^(3,16,17,18,19).

Conclusion

FNAC of lymph nodes is an excellent first-line investigation to determine the nature of lesion. It is quick, safe, minimally invasive, and reliable and is readily accepted by the patient. It is, simple, and inexpensive definite diagnostic procedure to render prompt diagnosis especially in lymph node aspirates where biopsies are not done commonly. Also future mode of treatment can be ascertained with in short time.

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