



CYTOMORPHOLOGY OF PERIPHERAL LYMPHADENOPATHY AND ITS EVALUATION IN A TERTIARY CARE CENTRE IN MUZAFFARPUR

Pathology

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ABSTRACT

Background:- Lymph node enlargement or lymphadenopathy is a common presenting feature in various non-neoplastic and neoplastic lesions. Common investigation to diagnose the cause is Fine needle aspiration cytology (FNAC). FNAC is a simple, quick, inexpensive and minimally invasive technique that can be used as an outpatient procedure to diagnose the cause. The present study was undertaken to assess the various causes of lymphadenopathy through FNAC and to see the distribution of these lesions with respect to age, gender and site. **Method:-** This is a prospective, observational study including 150 patients who underwent FNAC of peripheral lymphadenopathy from May 2022 to July 2023. History was taken and clinical evaluation was done, along with microscopy. **Results:-** Out of 150 cases male consisted of 68 (45.3 %) and female were 82 (54.7 %). Cervical lymph node is most commonly involved and reactive lymphadenitis was the most common cytomorphological pattern (79/150, 52.66 %) followed by granulomatous lymphadenitis. **Conclusion:-** FNAC is quick and reliable method to categorize the causes of lymphadenopathy into reactive, inflammatory, metastatic and lymphoproliferative. It avoids the necessity of an incisional/trucut biopsy. It plays an important role in places where histopathological facilities are not available in early diagnosis of benign and malignant lesions. Spectrum of lesion mostly consist of non-neoplastic lesions followed by primary lymphoproliferative disorders with possibility of lymphoma.

KEYWORDS

Lymph node, Fine needle aspiration cytology, granulomatous lymphadenitis, reactive lymphadenitis.

INTRODUCTION

Lymphadenopathy is a commonly encountered clinical problem which has multiple causes. (1) Lymphadenopathy is one of the common clinical presentation in both pediatrics and adult age groups. It can be due to varied spectrum of etiologies ranging from non-neoplastic to malignant. Cervical lymph nodes are more commonly involved than any other lymphatic region. In a large number of studies, the most common etiology was found to be non-specific reactive changes. (2)

FNAC is a very simple and important diagnostic tool for lymph node lesions. (3) . The technique is minimally invasive, produces a speedy result and is inexpensive. Its accuracy in many situations, when applied by experienced and well-trained practitioners, can approach that of histopathology in providing an unequivocal diagnosis.

Aim

The aim of the study is to evaluate the cytomorphological pattern and frequency of pathological entities and the role of FNAC in diagnosis of peripheral lymphadenopathy at a tertiary care centre in Muzaffarpur.

MATERIAL AND METHODS

A prospective, observational study including 150 cases of lymphadenopathy presenting to the department of pathology muzaffarpur, was taken up for our study. All the FNAC were performed after getting consent, 22-23 gauge needle was used for the procedures. smears were prepared and stained by May-Grunwald-Giemsa (MGG) for further evaluation. Further Pap stain was used in cases of suspected lesion of metastasis. History and clinical data was obtained from the patients and was evaluated along with microscopy.

RESULT

Out of 150 cases, females were slightly more in number (82; 54.7%) than male (68; 45.3%). All 150 patients were divided as per their age (7 age gr). Majority of patients with lymphadenopathy were in the age group of 21-30 yrs (32/150, 21.3 %) followed by 41-50 yrs age group (28/150, 18.6 %) and least in <10 yrs age group (12/150, 8.0%).

Table no: 1 Gender Distribution

Gender	Frequency	Percentage (%)
Male	68	45.3%
Female	82	54.7%
Total	150	100%

Table no: 2 Age Distribution

Age(yrs)	<10	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	>60
Frequency	12	24	32	14	28	13	27
Percentage(%)	8.0	16.0	21.3	9.3	18.6	8.6	18.0

Involvement of cervical lymph node is seen in 100/150 cases (66.6%), axillary lymph node 17/150 (11.3%), submandibular lymph node 13/150 (8.6%), inguinal lymph node 11/150 (7.3%), supraclavicular lymph node 7/150 (4.6%) and post auricular 2/150 (1.3%).

In cervical lymph nodes, most common lesion was reactive lymphadenitis (60/100) followed by granulomatous lymphadenitis (32/100). Similar pattern was seen in axillary lymph nodes whereas submandibular lymph nodes had granulomatous lymphadenitis as the most common lesion. In the supraclavicular lymph node, most common lesion was granulomatous lymphadenitis (4/7) followed by acute suppurative lymphadenitis (3/7).

Table no: 3 Anatomical Distribution and Cytodiagnosis

Site	Reactive lymphadenitis	Granulomatous lymphadenitis	Acute suppurative lymphadenitis	Necrotising lymphadenitis	Lymphoproliferative disorder	Metastatic
Cervical	60	32	2	1	3	2
Axillary	7	5	3	0	0	2
Sub mandibular	6	7	0	0	0	0
Inguinal	5	5	1	0	0	0
Supra-clavicular	0	4	3	0	0	0
Post auricular	1	1	0	0	0	0

Spectrum of lesions included Reactive lymphadenitis, granulomatous lymphadenitis, necrotising lymphadenitis, acute suppurative lymphadenitis, lymphoproliferative disorder and Metastatic deposits. Reactive lymphadenitis cases highest in among the diagnosis (79 cases, 52.6%) followed by granulomatous lymphadenitis (54 cases, 36%), acute suppurative lymphadenitis (9 cases, 6.0%), lymphoproliferative disorder (3 cases, 2.0%) possibly lymphoma and necrotising lymphadenitis (1 cases, 0.6%). Metastasis was found in 4

cases.

Table no:4 Distribution of Various Lesions of Lymphadenopathy on FNAC

Cytological diagnosis	No. Of cases (out of 100)	Percentage (%)
Reactive lymphadenitis	79	52.6%
Granulomatous lymphadenitis	54	36%
Acute suppurative lymphadenitis	9	6%
Metastatic carcinoma	4	2.8%
Lymphoproliferative disorder	3	2%
Necrotising lymphadenitis	1	0.6%

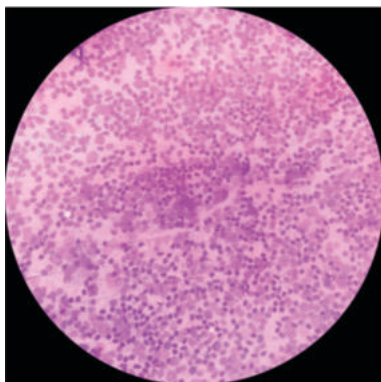


Fig 1:- Reactive Lymphadenitis (400x)

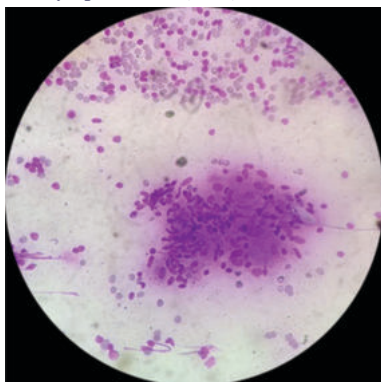


Fig 2:- Granulomatous Lymphadenitis(400x)

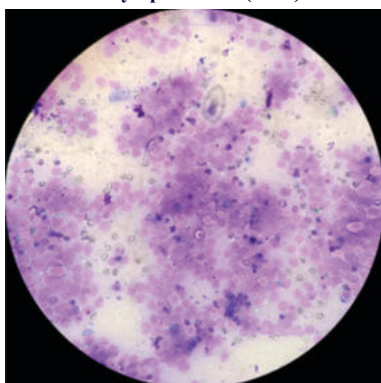


Fig 3:- Non-hodgkin Lymphoma (400x)

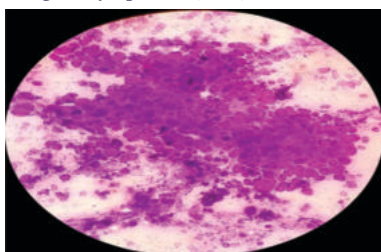


Fig 4:- Metastatic Carcinoma (400x)

DISCUSSION

Lymphadenopathy is a commonly seen clinical condition requiring quick and accurate diagnosis so that a proper treatment regimen can be started at the earliest.

FNAC is a completely safe , quick and appropriate method for early diagnosis of lymphadenopathy reducing the need of excision biopsy.(4)

In the present study done over a period of 15 month , which included 150 patients who presented with peripheral lymphadenopathy were diagnosed by fine needle aspiration cytology .Out of 150 cases reactive lymphadenitis was the common cytomorphological pattern 79/150 (52.66%) .Similar finding was noted in Shrivastav A et al,Mohanty R et al.(5)(6),followed by granulomatous lymphadenitis (54/150,36.0%)as second most common diagnosis, similar finding noted in kumar H et al &Shilpa G et al.(7)(8).Acute suppurative lymphadenitis was seen in 9/150 cases (6.0%) lymphoproliferative disorder was seen in (3/150,2%), Metastatic deposits was seen in 4 cases which includes 2 cases of squamous cell carcinoma and adenocarcinoma each.The findings were comparable with studies done by Mohan et al.(9).Female cases were more common in this study (82,54.7%) than male (68/150,45.3%) Comparable finding was noted in Duraiswami et al.(10).

CONCLUSION

FNAC is a quick and minimally invasive method to categorise the cause of lymphadenopathy .It avoids the necessity biopsy.In this study it was found that the majority of patients had reactive lymphadenitis followed by granulomatous lymphadenitis. Metastatic deposit was diagnosed in 4 cases(2.6%) and was more common in older age groups (>60yrs).Fine needle aspiration cytology plays an important role in places where histopathological facilities are not available.

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