



ROLE OF FNAC IN EVALUATION OF PERIPHERAL LYMPHADENOPATHY – A STUDY AT TERTIARY CARE HOSPITAL

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ABSTRACT Peripheral lymphadenopathy is a very common presentation in various non-neoplastic and neoplastic lesions. Fine needle aspiration cytology (FNAC) is a minimally invasive, cost effective and quick outpatient procedure for diagnosis of lymphadenopathy.

Aim of the study :

- 1.To evaluate the role of FNAC in assessing the cause of lymphadenopathy with correlation to age and gender.
2. To assess the value of FNAC in differentiating non-neoplastic and neoplastic lesions.

METHOD: Fine needle aspirates from enlarged peripheral lymph nodes of 110 cases with age ranging from 8 months to 75 years were studied for a period of one year in tertiary care hospital.

RESULTS: The most common lesion encountered was granulomatous lymphadenitis (caseating and non caseating)-32% , followed by reactive lymph node -24 % , metastatic carcinomatous deposits- 23%, nonspecific lymphadenitis -21%, suppurative lymphadenitis-8%, lymphoma – 2%.

CONCLUSION : FNAC evaluation is a simple, safe, rapid, quick, reliable and cost effective procedure in establishing the underlying pathology of enlarged Peripheral lymphnode. It helps to differentiate a neoplastic and non-neoplastic lesion and help in managing the patient from unnecessary surgery.

KEYWORDS : Fine needle aspiration cytology, lymphadenopathy, granulomatous lymphadenitis.

INTRODUCTION:

Lymphadenopathy is a common clinical presentation with underlying multiple causes¹. FNAC is an important diagnostic tool and very simple procedure done in enlarged palpable lymph node which is less traumatic , non invasive and ideal for out patients^{2,3}. Histopathological evaluation of the excised lymph node is an accurate diagnostic parameter but it is more costly , time consuming with discomfort to the patients and may not be advised in all patients. FNAC helps in rapid diagnosis with minimal intervention and prevent patients from undergoing unnecessary surgery. FNAC also provides an early differentiation of benign and malignant lesion¹².

MATERIAL AND METHODS :

The Prospective study was done in department of pathology , tertiary care hospital, tamilnadu for a period of 3 months. 110 patients in the age group 8months to 75 years presenting with palpable lymph nodes referred to cytopathology were included in this study. Evaluation of the patients with brief clinical history, clinical examination and investigation were done. Cytopathologist performed the FNAC using 22-24 G needle attached to 10ml syringe. Aspirated material smeared in glass slides and immediately immersed in 95% methanol. Wet fixed smears were stained with Hematoxylin and Eosin stain. At the end of the study collected data was analysed. Five case of FNAC was inconclusive because of scant cellularity, hemorrhagic component and very small nodes.

OBSERVATION AND RESULTS :

In this study we analysed 110 cases of peripheral lymph node aspirates and the results were tabulated according to site,cytological diagnosis , age and gender .

Table-1:Distribution of cases according to site:

Cervical	102
Axillary	4
Inguinal	2
Supraclavicular	2

TABLE 2: Cytological diagnosis of 110 cases of peripheral lymphadenopathy

s.no	Cytological diagnosis	No of cases	Percentage(%)
1	Non specific lymphadenitis	21	19.09
2	Reactive lymphadenitis	24	21.82
3	Suppurative lymphadenitis	8	7.28
4	Granulomatous lymphadenitis (caseating and non caseating)	32	29.09
5	Lymphoma	2	1.81
6	Metastatic carcinoma	23	20.91
	Total	110	100%

Table-3:Distribution of lesion according to age and sex :

Age in yrs	Nonspecific lymphadenitis		Reactive lymphadenitis		Suppurative lymphadenitis		Granulomatous Lymphadenitis		Lympho[proliferative Disorder		Metastatic carcinoma		Total %
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
<10	0	1	3	5	1	0	32		0	0	0	0	15
11-20	3	1	2	3	0	0	7	1	0	0	1	0	18
21-30	5	3	6	2	2	0	12	2	0	1	0	0	32
31-40	2	2	2	0	1	1	2	1	0	1	1	2	14
41-50	3		1	0	1	0	1	0	0	0	2	4	13
51-60	0	0	0	0	0	1	0	0	0	0	4	3	8
>60	0	0	0	0	0	1	0	0	0	0	2	4	7
Total	21		24		8		32		02		23		110

Fig 1: Granulomatous lymphadenitis:Smear showing epithelioid cell granulomas(H&E: 40x)

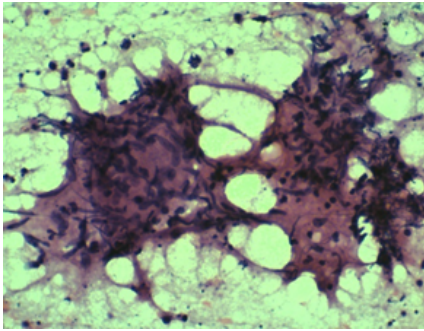


Fig 2: Suppurative lymphadenitis: Smear showing plenty of neutrophils and few lymphocytes in a background of karyorectic debris.(H&E:10X)

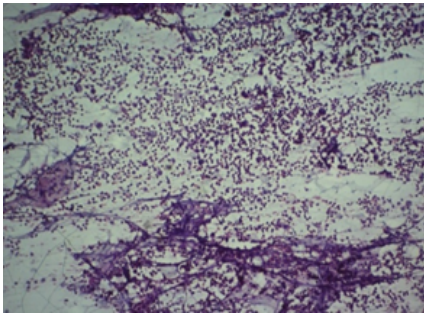


Fig 4: Reactive lymphadenitis : smear showing polymorphous population of lymphocytes and tingible body macrophage (arrow) H and E 40X

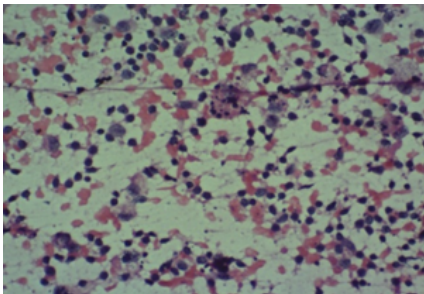


Fig 5: Metastatic carcinomatous deposits :Smear shows clusters of large pleomorphic cells in a background of polymorphous population of lymphocytes(H& E: 10X)

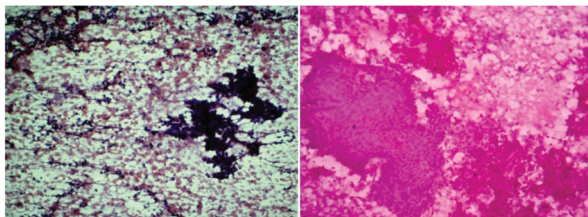
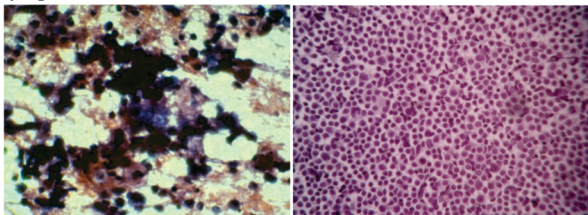


Fig 6: Smearshowing large pleomorphic cells in case of lymphoma(H &E :40X)



Cytological diagnosis of Granulomatous lymphadenitis is diagnosed by the presence of epithelioid cell granulomas with or without caseating necrosis and reactive lymphadenitis by the presence of

polymorphous population of lymphocytes with high cell density and tingible body macrophages with pattern variation depending on the number and size of germinal centers aspirated. The presence of neutrophils, lymphocytes with cell debris in the aspirated material suggest suppurative lymphadenitis. The metastatic carcinomatous deposits were diagnosed based on the pattern of cellular details. Squamous cell carcinoma by presence of large cell with eosinophilic cytoplasm and prominent nucleus and papillary carcinoma with well formed papillary structures against lymphoid background was noted.

In this study granulomatous lymphadenitis was diagnosed in 32 cases out of 110 cases and reactive lymphadenitis in 24 cases. It is also observed that granulomatous lymphadenitis and reactive lymphadenitis most commonly noted in first 3 decades. Metastatic carcinomatous deposit in age more than 40 years.

DISCUSSION :

In diagnosis of superficial lymphadenopathy FNAC is highly valuable and reliable diagnostic tool. The availability of FNAC has reduced the need for excision of enlarged lymphnodes. FNAC is of uncertain in cases of lymphoproliferative disorders where it is difficult to differentiate between reactive hyperplasia and NHL^{4,5}.

In present study granulomatous lymphadenitis is most common which correlated well with shah et al² and Wahid et al⁶ study. One of the most common type of lymphadenitis in developing countries is Tuberculous lymphadenitis due to low socioeconomic status, illiteracy, incomplete treatment and increased incidence of HIV infection. However Shrivastv A et al⁷, Pandey Pet al⁸ found in their study as reactive lymphadenitis, the most common cytological diagnosis.

In kumar et al and Shilpa et al study the second most common was reactive lymphadenitis with preponderance to female was noted, which is similar to our study.

The second most common cytological diagnosis in the present study was metastatic carcinomatous deposits which was similar to Wahid F et al. Among metastatic carcinomatous deposits cytological study of squamous cell carcinoma had a higher incidence which correlated well with Mohan A et al¹¹ and Mamatha K et al¹⁰ study. However adenocarcinoma was the most common malignancy noted in Ghartimagar D et al study¹².

Lymphoproliferative disorder represented only a small percentage of case (1.81 %) which correlated well with Shah PC et al² and Shrivastv et al⁷ study. Higher incidence of lymphoma was noted by Dowerah et al⁸ study (10.6%). In our study one case was of Non-Hodgkin lymphoma and other case was of leukemia, so diagnosed as leukemic infiltration. The excision biopsy of affected lymphnode in case of non-Hodgkin lymphoma was done and histopathological evaluation confirmed the diagnosis.

The presence of a relatively monomorphic lymphoid population is essential in the diagnosis of low grade lymphomas in the cytological preparations, in contrasting with the typically polymorphous cell pattern seen in reactive proliferations. Therefore, potential cytological misdiagnoses may occur, either in lymphomas that present as an apparently admixed cell pattern (false negative cases), or in reactive proliferations in which atypical cells are identified (false positive cases). For these reasons, excision biopsy is advised by many authors to confirm a primary cytological diagnosis of lymphomas since in some cases they present as an apparently admixed pattern of cells and in reactive lymphadenitis with atypical cells⁹. In our study among lymphoma cases, histopathological correlation was possible only in 1 case. Other case was lost in follow-up.

CONCLUSION :

FNAC is an inexpensive, non-traumatic, rapid and convenient diagnostic tool. It can differentiate a benign lesion from malignant and prevent patient from unnecessary surgery. In our study we found that majority of patients had granulomatous lymphadenitis(32%) and reactive lymphadenitis(24%) followed by metastatic carcinomatous deposits(23%). Though histopathology examination is the diagnosis in lymphoma, FNAC is still of value in suspicion and suggesting lymphoma. FNAC is easily done as a cost effective procedure in places where histopathology facilities are not available and as a preliminary procedure to plan the management in peripheral enlarged lymphnodes.

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