



Place of Fine Needle Aspiration Cytology in the Diagnosis of Lymphadenopathy

KEYWORDS

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ABSTRACT *Fine needle aspiration cytology was performed in 75 cases of significant lymphnode enlargement. The equipment and technique are simple and does not require anaesthesia. For fine needle aspiration cytology to be fully and accurately utilize, not only the strengths and weaknesses of the procedure must be understood but also the technical difficulties involved in obtaining diagnostic material. Interpretation becomes difficult, scanty cellularity is the feature of FNAC. Even then, FNAC is not only safe, less expensive and has high patient acceptance but also can be carried out as an OPD procedure. The procedure is almost complication free and in experienced hands, it has a high diagnostic accuracy.*

Introduction:

Lymphadenopathy is a common physical finding. Persistence of lymphnode swelling for more than four weeks needs prompt investigations¹. Fine needle aspiration cytology is now an accepted procedure. In a patient who exhibits peripheral lymphnode enlargement as a presenting symptom, the nature of a possible primary lesion may be determined by microscopic examination of the material aspirated from the adenopathy². The entire procedure, sampling, preparation and interpretation takes than an hour and immediate results can be obtained.

The common disadvantage of needle biopsy is that the amount of material obtained is limited. For this reason, it seems imperative that the criteria for diagnosis should be sharply and exactly defined³. In smear preparations architectural pattern is not obtainable and as such diagnosis of granulomatous and other lesions which may be patchy lesions is liable to be missed.

Surgical biopsy offers a large amount of material but also has the disadvantage of traumatic artifacts produced by manipulation and excision of tissue³. Furthermore, many of the abnormal cells are better identified in smears than in sections. In the evolution of pathological process cytological abnormality may antedate the histological changes⁴.

Thus the purpose of the present study is to evaluate the feasibility and diagnostic reliability of this procedure and to correlate the results with excisional biopsy reports of cases of lymphadenopathy.

Material and Methods:

This study was conducted in a tertiary care hospital in Maharashtra. It was conducted on 75 adult patients with lymphadenopathy presenting at medicine OPD and wards. The criteria for inclusion of the cases in present study were:

Any lymphnode swelling persistent for more then four weeks duration.

Significant lymphnode enlargement. i.e. cervical and inguinal lymphnodes >1cm. , supraclavicular, occipital, axillary, epitrochlear lymphnodes >3mm.

In each case detailed history was taken and complete physical examination was carried out. Routine investiga-

tions were done in all cases i.e. Hb % , TLC, DLC, platelet count, ESR. Specific investigations like bleeding and clotting times, bone marrow exam, x-ray chest were carried out as and when required. After routine investigations, fine needle aspiration cytology was carried out as an OPD procedure in minor O.T. or medicine wards. Excision biopsy of the same lymphnode was carried out on the same day in minor O.T. after FNAC by surgeon.

Material required:

- Hypodermic syringe 20 ml,
- Sterilized needles 22 gauge,
- Iodine swabs,
- Sprit swabs,
- Sterile gauze,
- Microscopic glass slides,
- Ethyl alcohol (95 %),
- Stains- Papanicolaou and Giemsa.

Aspiration technique⁵:

The site and size of the affected lymphnode were noted. The skin was prepared with iodine and spirit. The lymphnode was grasped with left hand with the index finger and thumb and placed in stable and fixed position. The syringe pistol with attached needle was laid against the puncture site. A quick motion was used to insert the needle through the skin this was followed by advancing the needle into the mass. After the mass was punctured, full suction was continuously applied to the aspirating syringe and needle was mood back and forth in different directions. The hub of syringe was observed for the appearance of any specimen at the junction of the syringe and needle, the aspiration was stopped by releasing the trigger of the syringe pistol and letting the vacuum in the syringe equate to the normal. When the air pressure was equalized, the needle was withdrawn from the mass and pressure was applied to the puncture site with a sterile gauze pad to stop haemorrhage if any.

Smears were prepared from aspirate on the glass slide. The wet slides were fixed in 95% ethyl alcohol for half an hour. The fixed smears were stained by Papanicolaou and Giemsa staining. The cytological examination of lymphnode aspiration smears was done and confirmed by a senior experienced pathologist. The results of FNAC are confirmed with the histopathological examination of lymphnode , obtained by excisional biopsy in each and every case.

Observations:

The present study comprises of 75 cases presenting with significant lymphnode enlargement associated with or without other symptoms.

Table 1
Age and Sex distribution of cases

Age Group	Male	Female	Total
< 20 years	4	2	6
21 to 40 years	11	14	25
41 to 60 years	19	17	36
61 to 80 years	4	4	8
Total	38	37	75

Table 3
Correlation of cytological diagnosis and histopathological diagnosis

Histopathological diagnosis	No. of cases	Cytological diagnosis						
		Tuberculosis	Cronic non-specific lymphadenitis	Hodgkin's lymphoma	Non-Hodgkin's lymphoma	Metastatic carcinoma	Inconclusive	Non representative
Tuberculosis	31	24	2	-	-	-	2	3
Cronic non-specific lymphadenitis	6	-	6	-	-	-	-	-
Hodgkin's lymphoma	2	-	-	2	-	-	-	-
Non- Hodgkin's lymphoma	6	-	1	-	5	-	-	-
Metastatic carcinoma	20	-	-	-	-	17	2	1
Total	65	24	9	2	5	17	4	4

Table 4
Sensitivity and specificity of aspiration cytology in individual disease

Etiological group of lymphnode	Sensitivity	Specificity
Tuberculous lymphadenitis	77.41	100.00
Cronic non-specific lymphadenitis	100.00	94.91
Hodgkin's lymphoma	100.00	100.00
Non- Hodgkin's lymphoma	83.33	100.00
Metastatic carcinoma	85.00	100.00

Accuracy of aspiration cytology is 83.07%.

Discussion:

In this study seventy five cases of significant lymphnode enlargement persisting for more than four weeks duration were taken. Ten cases were excluded from the study out of which in four cases excision biopsy was inconclusive while remaining six cases were unwilling for an excisional biopsy after performing fine needle aspiration cytology.

Fine needle aspiration of lymphnode was performed skillfully with strict aseptic precautions without anaesthesia in all cases. Sedation was not required in any case. No immediate or delayed complications were noted in the present study.

Table 2
Clinical features observed

Clinical features	No. of cases	Percentage
Lymphnode swelling	75	100.00
Decreased appetit	64	85.33
Fever	46	61.33
Cough	20	26.67
Pallor	39	52.00
Adventitious breath sounds	14	18.67
Hepatomegaly	3	4.00
Splenomegely	1	1.33

Reasons of inadequate aspirations (non-representative and representative but inconclusive) are –

- Aspiration has been inadequately performed.
- Aspiration has missed the target.
- The lesion itself is poorly cellular and fibrous and aspirates with difficulty.
- Technically poor slide.

It is not possible to subclassify lymphoma by FNAC. Typing and grading of metastatic carcinoma is not possible on FNAC. For both these reasons, surgical biopsy is advised for subclassification of lymphoma and typing and grading of metastatic carcinoma⁶.

This method is particularly useful in seriously ill patients with widely disseminated tumor or with tumors relatively inaccessible, where diagnosis becomes imperative for immediate institution of therapy⁷.

FNAC of lymphnode has found a role in the primary diagnosis, staging of the disease, management and monitoring the recurrence of disease⁸.

A diagnostic test is satisfactory if sensitivity and specificity are around 90%. We have found FNAC a satisfactory tool in the diagnosis of lymphadenopathy. The simplicity and cheapness of the procedure make it most suitable for use on an out patient basis even in peripheral hospitals and dispensaries especially in developing countries like India. Lymphnode aspiration cytology can be recommended as a good screening procedure in all cases of lymphadenopathy.

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