



FNAC SPECTRUM OF LYMPHADENOPATHY IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background – The aim of this study was to identify the pattern of pathologies on FNA of superficial lymph nodes in a tertiary hospital over a period of one year.

Methods – The data pertaining to our reports given to the patients who underwent FNAC evaluation of superficial lymph nodes was analysed to determine age distribution of patients, group of lymph nodes involved and distribution of pathologies diagnosed.

Results – Majority of patients were adults. Cervical group of lymph nodes were most commonly involved. Granulomatous lymphadenitis was the predominant diagnosis in our series 39%.

Conclusion – Fine needle aspiration evaluation is a quick, easy, relatively non traumatic and in expert hands, a reliable method of diagnosing the pathology of underlying enlarged superficial lymph nodes. Granulomatous lymphadenitis was the most common causes of lymph node enlargement in our series.

KEYWORDS : FNAC, Lymph node, Granulomatous Lymphadenitis

INTRODUCTION-

Lymphadenopathy is one of the most common clinical presentations in patients attending the outpatient department. 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) as the first line of investigation has assumed importance in diagnosing a variety of disease processes as it is rapid, simple, reliable, minimally invasive, and cost-effective procedure which can be used in outpatient setting.[2][3] FNAC has an important role in the evaluation of peripheral lymphadenopathy, and it can be used as a safe alternative to excision biopsy.[4] FNAC has been used extensively for the diagnosis of primary and secondary lymphadenopathy. The present study was undertaken to determine the role of FNAC in the evaluation of cytomorphological features of various lymph node lesions. Our experience of the diagnostic utility of FNAC in the assessment of lymphadenopathy is presented.

While histopathological evaluation of surgically excised lymph nodes is a more specific and accurate diagnostic parameter, it is relatively more costly, time consuming and discomforting to the patient, and may not be warranted in every patient. FNAC is more cost effective and relatively non-invasive.[5] FNAC evaluation may prevent a patient having to undergo unnecessary surgery and permit the treating clinician to offer conservative therapy instead.

MATERIAL AND METHODS:

The study was undertaken as a retrospective systematic study using existing patient data retrieved from the records of the Department of Pathology. During the period June 2018 to June 2019, a total of 100 patients were referred to the cytopathology department. for FNAC evaluation of superficial enlarged lymph nodes, which were either single or multiple. All patients who were referred for FNAC of enlarged superficial lymph nodes were included in the study.

Consequent to studying the clinical profile of each patient, including perusing relevant investigation results in each case, the patients underwent FNAC evaluation of the enlarged lymph node(s), using a 22 or 23 gauge needle attached to a 10 cc disposable syringe. Consent of the patients was obtained in each case. Smears were prepared on clean glass slides as per standard techniques, and the smears are wet fixed by

immersing the slides in 95% methanol. Wet fixed smears were stained by Hematoxylin and Eosin (H and E) stain and then analyzed by standard microscopy. No special stains were used on the slides. Diagnosis was made by either a single cytopathologist or, where mandated, by two or more cytopathologists.. In cases where malignant deposits or lymphoproliferative disorders were diagnosed on FNAC, it was recommended that the patients be referred to a cancer center for immunocytochemistry/biopsy and HPE of the lesions.

At the end of the study period, the results of the FNAC analyses were retrieved from the Laboratory archives and analyzed to establish the spectrum of pathologies reported on FNAC during the period under study. The age and gender profile of the patients was also studied.

RESULT –

A total of 100 patients reported for FNAC evaluation of enlarged lymph nodes during the period June'2018 to June'2019. Male to female ratio was 41/59 (0.6:1). Maximum number of patients were in adult age group (64%) followed by paediatric age group (30%) and old age group (6%).

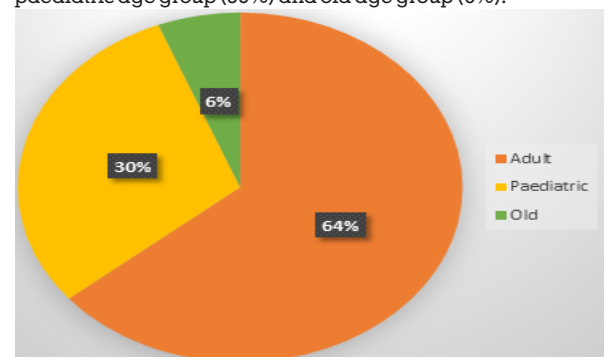


Chart 1: Age Distribution Of Lymphadenopathy Patients

On clinical examination most of the lymph nodes were single (57%).

Of the 100 cases, Cervical lymphadenopathy was noted in 58%, followed by Supraclavicular (14%), Submandibular (13%), Inguinal (5%), Submental (4%), Axillary (3%), Intraparotid (1%), Mediastinal (1%) and postauricular (1%).

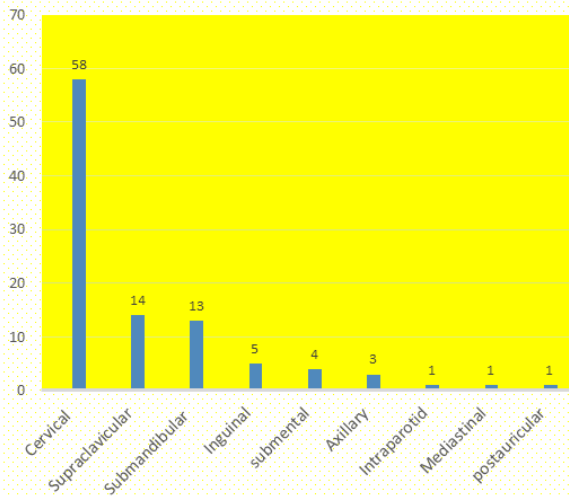


Chart 2: Group Of Lymph Nodes Involved

Based on cytomorphological features observed, the cases were categorized into the following groups:

Chart - 3: Distribution Of Lesions On Lymph Node FNAC

1	Granulomatous lymphadenitis	39
2	Inconclusive for opinion	10
3	Reactive lymphoid hyperplasia	28
4	Suppurative lymphadenitis	9
5	Necrotising lymphadenitis	8
6	Metastatic malignancy	4
7	Lymphoproliferative disorder, Lymphoma (Hodgkins and Nonhodgkins)	2

Granulomatous lymphadenitis was the most common presentation in the present study, It was diagnosed by the presence of epithelioid cell granulomas with or without caseating necrosis.

Inconclusive for opinion was given due to inadequate aspirated material on the smears. This was due to the subcentimeter or very small size of the lymph nodes assessed. Reactive lymph node hyperplasia was diagnosed by the presence of a polymorphous population of lymphoid cells and tingible body macrophages.

Suppurative lymphadenitis was diagnosed by the presence of predominantly neutrophilic inflammatory component in the aspirate against a background of lymphoid cells.

Necrotic lymphadenitis was diagnosed by the presence of necrotic material in the aspirated material with insufficient cellular content in the smears to ascribe any etiology for the necrosis.

Lymphoproliferative disorders (Hodgkins lymphoma) was diagnosed by the presence of Reed Sternberg cells and polymorphous population of lymphoid cells.

Metastatic deposits were diagnosed based upon morphological patterns and cellular details.

DISCUSSION –

Fine needle aspiration cytology has been found to be much simpler than the lymph node biopsy. FNAC is a part of the initial management of patients presenting with any palpable mass as it is simple, safe, cost effective and time saving procedure.

Aspiration of lymph nodes for diagnostic purposes was first done by Griey and Gray in 1904, in patients with sleeping sickness. (6)

In the present study, an attempt has been made to study the cytomorphological spectrum of lymph node lesions.

In our series Female patients were more whereas male preponderance was seen in other series. (7,8)

In our study the majority of patients were adults. This correlated with the study by Chandanwale et al where maximum number of cases were adults. (9)

Cervical lymph nodes were the most common group of lymph nodes involved which was similar to that observed by Hirachand et al, Khajuria et al and Chandanwale et al (9,10,11)

In our study, out of all cases, granulomatous lymphadenitis was most common observation. This is in accordance with the study by Bhavani et al (12). In a region where tuberculous infection is common and other granulomatous diseases are rare the presence of a granulomatous feature in FNAC is highly suggestive of Tuberculosis.

Reactive lymphoid hyperplasia was diagnosed in 28%cases which is comparable to study by Tariq et al (18%) (13)

Metastatic deposits in enlarged lymph nodes were diagnosed in 4 cases. Out of the 4 cases, 2 cases were metastatic deposits of squamous cell carcinoma. One was undifferentiated malignancy and remaining was papillary carcinoma thyroid.

Lymphomas were diagnosed in 2% cases which is similar observation by Raman et al. (14) Both the cases were of Hodgkin's lymphoma. Although their prevalence is low, they pose a great diagnostic challenge. Age of patient, polymorphous population of cells and atypical cells should raise a suspicion of Hodgkin's Lymphoma.

Other pathologies in our series were suppurative lymphadenitis (9%) and necrotising lymphadenitis (8%). Raman et al reported 6% and 3% cases of suppurative and necrotising lymphadenitis in their study. (14)

CONCLUSION –

FNAC is a quick, easy, relatively nontraumatic method of diagnosing the underlying pathology in cases of superficial enlarged lymph nodes. It can be used as an alternative to excisional biopsy in some cases.

Granulomatous lymphadenitis was the most common cause of lymph node enlargement in our series. AFB stain on FNAC smears should be done as a support to diagnosis of granulomatous lymphadenitis.

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