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Original Research Article

Cytomorphological study of lymph node lesions

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ABSTRACT

Introduction: Lymph nodes are important components of peripheral or secondary lymphoid organs which play a huge role in immune response.
Aim: To study cytomorphological features and incidence of various lymph node lesions in patients ≤18 years.
Materials and Methods: The data has taken from 100 patients of ≤18 years having lymph node lesion presented at central clinical laboratory for Fine Needle Aspiration cytology examination. FNAC was done in all cases & correlated with their clinical data.
Results: Interpretation of their cytology examination is showing that in our tertiary care centre most common lymph node lesion in patient ≤18 year is granulomatous lymphadenitis(44%) followed by reactive lymphadenitis (37%), Acute inflammation(06%), Abscess formation (05%), Cystic lesion (03%), and Leukemic infiltration (02%). Most affected age is 6 to 10 years.
Conclusion: Granulomatous & Reactive lymphadenitis are common causes of lymphadenitisin ≤18 years age group. Among this study 6-10 years are more affected age group. These result can be obtain by Fine Needle Aspiration cytology examination.

1. Introduction

Lymph nodes are essential part of immune system. Their enlargement is noted in various diseases, including infections and malignancy. Lymphadenopathy is defined as an abnormality in size, number, and consistency of one or more than one lymph nodes.[1] The differential diagnosis for cervical lymph node swelling in patient ≤18 years is broad, including both common benign etiologies and much more rare malignant causes. FNAC can play a major role as first line screening method as it allows us to obtain a cytological specimen directly from the swelling.[2]

Most represented cases are benign and selflimiting in nature.[3]

2. Objective

1. To study lymph node lesions in patient ≤18 years.
2. To study demographic characteristics in lymph node lesions.

3. Materials and Methods

In this study, the data were taken from 100 patients of age ≤18 years having lymph node lesion. They are presented at central clinical laboratory for Fine Needle Aspiration Cytology examination. They are undergone to FNAC examination. Cytomorphological study of collected sample were done. On basis of this, diagnosis were given.

3.1. Inclusion criteria

1. Age group ≤18 years
2. Patients having lymph node lesion.

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3.2. Ethical issues

Study was conducted on retrospective data. No any ethical issues were there.

4. Results

Table 1: Disease specific distribution

Diagnosis given by cytology study	Number of cases (Out of 100 case)
Granulomatous inflammation	44
Reactive lymphadenopathy	37
Acute inflammation	06
Abscess formation	05
Cystic lesion	03
Insufficient material	03
Leukemic infiltration	02

Thus from 100 patients 44% patient were having granulomatous inflammatory lesion of lymph nodes, 39% patient were having Reactive lymph node lesion. These are the diagnosis in maximum patients. Other includes Acute inflammation (06%), Abscess formation (05%), Cystic lesion (03%), Leukemic infiltration (02%) and undiagnosed due to insufficient material (03%).

Table 2: Age & Gender specific distribution

Age (Years)	Male	Female	Total
0-5	12	08	20
6-10	26	07	33
11-15	11	18	29
16-18	08	10	18
	57	43	100

Mean age group which is highest affected is 6 to 10 years (33%).

5. Discussion

Lymph node lesion is a common problem with a broad differential diagnosis. Symptomatic or asymptomatic inflammation is the commonest cause of lymphadenopathy. Treatment of lymph node lesion is totally different in various etiology. So, the diagnostic part of lymph node lesion is the core of treatment. FNAC is very safe and inexpensive method for diagnosis,[4] as little information is available on the value of fine needle aspiration biopsy in routine practice in resource limited setting.[5] A clinician can get idea about further management, whether drug therapy is sufficient or surgical procedure will be needed. Fine needle aspiration cytology has been found to be much simpler than the lymph node biopsy and patient is free from the scar of operation.[6] Cervical lymph node enlargement is a very common complain in the patient $\leq$18 years of age.[7]

In this study data obtained from 100 patients demonstrates that granulomatous inflammation is the commonest cause of lymphadenopathy[8] by presence of epitheloid cells, granuloma formation and necrosis according to the immune status of patient. As the granuloma formation is the protective response by body to suppress the infective agent spread. Second most common cause is Reactive lymph node. In developing country like India Tuberculosis is commonest cause of granulomatous inflammation. But, this diagnosis cannot be confirmed by FNAC study. AFB demonstration is must to stamp tubercular lesion. Other benign conditions like acute inflammation, Abscess formation and cystic lesion can also be rule out by smear prepared from aspirated material.

Any malignant lesion like metastasis or leukemic infiltration can also be rule out by aspirated material, which can be followed by histopathology and immunohistochemistry for confirmation.[9]

More than 90% of lymph node metastasis are diagnosed by initial aspiration.[10] But primary site for metastasis of malignancy cannot be confirmed by aspirated material study.

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7. Conflict of Interest

The authors declare they have no conflict of interest.

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