



A STUDY OF FINE NEEDLE ASPIRATION CYTOLOGY IN THE DIAGNOSIS OF CERVICAL LYMPHADENOPATHY

Pathology

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ABSTRACT

Background: Fine Needle Aspiration Cytology (FNAC) is a consistent and fairly priced method for evaluating lymphadenopathy. Lymph node FNAC is usually the first step in the evaluation of enlarged lymph node. The etiology may range from a benign nonspecific inflammation to lymphoproliferative disorders and metastatic malignancy. **Aims and Objectives:** To study role of FNAC as a diagnostic tool in enlarged cervical lymphadenopathy. **Methods:** The present study was a prospective and cross-sectional study. This Study was carried out over a period of 1 year (February 2022 to January 2023) at department of pathology KPC Medical college & Hospital, Kolkata. 100 patients were included in this study. **Results:** Out of 100 cervical lymph node FNAC cases, reactive non-specific was the most common finding (52%) followed by tubercular (28%). **Conclusion:** This study highlights the usefulness of FNAC as a reliable diagnosis of cervical lymphadenopathy.

KEYWORDS

Cervical Lymphadenopathy, Fine Needle Aspiration Cytology, Metastatic Malignancy

INTRODUCTION

Enlargement of the cervical lymph nodes is a common and concerning symptom in both adults and children. This might be caused by a benign disorder like reactive hyperplasia, but it could also be caused by lymphoma or a metastatic cancer.¹ Another significant differential diagnosis in poor nations is tubercular lymphadenitis. Fine Needle Aspiration Cytology (FNAC) of lymph nodes is a quick and easy diagnostic technique that can determine the kind of lymphadenopathy. Several investigations have already demonstrated its sensitivity and specificity. The use of aspiration cytology as a main technique of diagnosis in reactive, infective, and metastatic lymphadenopathy² has significantly increased diagnostic accuracy in instances of lymphoma when combined with immunological examination.^{3,4}

The lymph node is an essential component of the body's defensive mechanism. It may enlarge as a result of infectious agent stimulation or the involvement of metastasis or malignant illnesses, such as lymphoma, and may need a patient appointment with a doctor due to a developing mass.⁵

Tuberculosis is an important and frequent cause of cervical lymphadenopathy and is more prevalent in low-income countries.⁶ Fine-needle aspiration cytology (FNAC), which has the advantages of little trauma and speedy detection, is now commonly utilized as the first diagnostic and therapeutic tool for patients with lymphadenopathy.⁷ FNAC is a rapid diagnostic procedure which can decide the nature of lymphadenopathy.⁸

The goals of this study were to assess and determine the causes and morphological patterns of lymphadenopathies using cytological methods.

MATERIALS AND METHODS

Place Of Study:

Department of Pathology, KPC Medical College & Hospital, Kolkata.

Study Population:

100 patients with cervical lymphadenopathy visiting the hospital.

Study Design:

Prospective and cross-sectional study.

Period Of Study:

One Year (February 2022 to January 2023).

Inclusion Criteria:

Selected patients attending ENT, Surgery, Medicine and Pediatric OPD with cervical lymphadenopathy of all age groups and both sexes included.

Exclusion Criteria:

Cases in which diagnosis was equivocal and patient particulars were inadequate, were excluded from the study.

RESULTS

Total number of patients included in the study was 100, who had undergone FNAC for enlarged cervical lymph node. The male: female ratio in the study was 1.6:1. We received the maximum number of patients (21 %) in the age group of 11-20 and the least 4 % in the > 60 years of age category. The half of lymphadenopathy (52%) was reactive non-specific with unknown cause. This is followed in frequency by tubercular (28 %), chronic granulomatous [non-tubercular] (8%) and acute suppurative varieties (6%). Malignancy was diagnosed in 5 cases out of 100. Of these, metastatic cases were 2 in number and non-Hodgkin's lymphomas were 03. One Castleman disease was also found.

DISCUSSION

FNAC of cervical lymph nodes provides a great opportunity to explore the myriad lesions that involve these lymph nodes. Cytology of lymph nodes has become a window for diagnosis of many diseases. Optimal material and experience, when combined, make cytological diagnosis of equal significance as histopathology.⁹ In many clinical settings it is very difficult to decide which patient is more likely to have a reactive or neoplastic lymphadenopathy. Here, knowledge about the pattern of lymphadenopathy is helpful to the clinician for solving the dilemma. In the present series, half the cases (52.0%) were reactive non-specific. This is because in the cervical region most cases may be of acute lymphadenitis, due to infections of the oral cavity, nose and ears. Acute suppurative (6.0%) and chronic granulomatous (non-tubercular) (8%) were other cytological patterns of reactive lymphadenopathy. Tuberculosis (28.0%) was another important differential diagnostic pattern. FNAC was reported to have 77% sensitivity in the detection of tubercular lymphadenopathy.¹⁰

Sensitivity, specificity and diagnostic accuracy was reported to be 97%, 97.5% and 97.4% respectively in yet another study in which, cytomorphological features of epithelioid and giant cells with caseation necrosis was associated with higher percentage of AFB positivity.¹¹ **Shrivastava JP et al**¹² (2015) examined that cervical Lymphadenopathy is one of the commonest clinical presentation in all ages. Maximum number of cases were 11-20 years age group. Males were more than the females. Our study showed that, out of 100 patients, male population was [62 (62.0%)] higher than female population.

Male: Female Ratio was = 1.6:1. **Baji SN et al**¹³ (2014) found that cervical lymphadenopathy is a common clinical presentation across patients of all age group. The aetiology may range from a benign nonspecific inflammation to lymphoproliferative disorders and metastatic malignancy. **Kadam SA et al**¹⁴ (2020) examined that Lymphadenopathy is one of the commonest clinical presentations of the patients. Maximum numbers of cases were below 30 years age group with male preponderance.

In our study, higher number of the patients were 11 to 20 years of age [21 (21.0%)], which was statistically significant ($p=0.00028$), ($z=3.6348$). **Shakya G et al**¹⁵ (2009) showed that the pattern of cervical lymphadenopathy is Half of the lymphadenopathy (50.4%) was reactive non-specific c with unknown cause. We showed that, most of the patients had Reactive non-specific [52 (52.0%)]. However, Tubercular [28 (28.0%)] followed by Chronic granulomatous [8 (8.0%)] which was statistically significant ($p<0.00001$), ($z=8.1713$).

CONCLUSION

The study highlights the usefulness of FNAC as a reliable method that help the clinician to evaluate an early diagnosis in cases presenting with enlarged cervical lymph node. The most numbers of cervical lymphadenopathy are reactive lymphadenitis, tuberculosis, lymphoma also metastatic malignancies. Exert early diagnosis can save the patients from early morbidity and mortality. FNAC is highly helpful for diagnosis in proper clinical setting.

Table 1. Demographic profile of patients undergoing FNAC of cervical lymph nodes

Particulars		Number	(%)
Male		62	62
Female		38	38
Age in group	<10	8	8
	11 to 20	21	21
	21 to 30	11	11
	31 to 40	19	19
	41 to 50	17	17
	51 to 60	20	20
>60		4	4
Total		100	100

Table 2. Pattern of Lymphadenopathy on FNAC of cervical lymph nodes

Cytological diagnosis		Number	%
Reactive non-specific		52	52
Acute suppurative		6	6
Chronic granulomatous(non-tubercular)		8	8
Tubercular		28	28
Non-Hodgkin		3	3
Metastatic Carcinoma	Adenocarcinoma	1	1
	Squamous Cell Carcinoma	1	1
Castleman Disease		1	1
Total		100	100

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