

# EFFICACY OF ASPIRATION CYTOLOGY IN SUSPECTED METASTATIC NECK LYMPH NODES

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## ABSTRACT

**Background:** Fine needle aspiration of neck nodes is quick, safe and convenient method for the diagnosis of various lesions. The procedure is well tolerated by the patients, has minimal complications and repeatable. Because of its minimally invasive characteristic, this technique is now being used routinely for quick and accurate diagnosis. Enlarged lymph nodes are one of the most frequently sampled tissues. The diagnostic accuracy of FNAC in neck node malignancy is high.

**Aims & Objective:** To study efficacy of aspiration cytology in suspected metastatic neck lymph nodes.

**Material and Methods:** A prospective hospital based study was conducted among patients attending cytology lab in Department of Pathology, of a tertiary care centre in this region over a period of three years. All new patients having clinically suspected neck lymph nodes were included in the study. All previously treated patients and those with recurrence were excluded from the study. Cervical lymph nodes were aspirated, and smears were prepared & processed following standard techniques. Findings were correlated with previous studies. A total number of 225 cases were examined.

**Results:** A total of 225 cases of lymph node aspirates were examined. Out of these, 190 cytologically diagnosed cases, as metastatic cervical lymph nodes were further evaluated. Most number of cases was seen in males, in the age group of 45-76 years. Higher number of patients had known primary sites, seen in oral cavity. Confirmatory cytological diagnosis could be made in maximum number of cases.

**Conclusion:** Fine needle aspiration cytology is a safe, rapid and highly accurate method for diagnosis of superficially palpable lymph nodes. It is now considered as a routine OPD procedure, and most convenient method for confirmation of suspected metastatic nodes.

**Key-Words:** Metastatic Lymph Nodes; Fine Needle Aspiration Cytology (FNAC); Efficacy

## Introduction

Fine needle aspiration of neck lymph nodes is quick, safe, very cost effective and simple technique, well tolerated by the patients, done on an outpatient basis and repeatable. India is eminently suited for this procedure.<sup>[1]</sup> FNA is now being used routinely for quick and accurate diagnosis of many lesions. Increased exposure and quality checks have improved the sensitivity and accuracy of FNAC in all anatomical sites, particularly so, in head and neck masses. The false positive rate of lymph node metastasis is quite low.<sup>[2]</sup> Enlarged lymph nodes are one of the most frequently sampled tissues. The earliest use of FNAC has been reported in USA in 1921 when Gulhrie, who described the method of using aspirated material to diagnose a variety of disease causing cervical lymphadenopathy.<sup>[2,3]</sup> Role of FNAC is of great significance in neck lymph nodes, particularly those with metastasis. Cytology of nodes gives an accurate diagnosis regarding presence or absence of metastasis. In addition, clue to the origin of primary tumour can also be obtained.<sup>[1,3]</sup>

## Materials and Methods

Present study was done in a tertiary care hospital in this

region of North India.

**Unit of Study:** All patients, having suspected metastatic nodes in neck were included in the study. All patients diagnosed previously or having received treatment were excluded from the study.

**Nature of Study:** In this prospective study, all patients with suspected metastatic neck nodes were subjected to history and examination after taking informed consent and approval from Institutions' Ethical Committee.

**Study Period:** 3 years (2010 – 2012)

**Sample Size:** Total no. of cases studied were 225.

**Study Schedule:** An elaborate schedule was prepared before undertaking the study. After taking informed consent, detailed clinical history and examination was carried out. Cervical lymph nodes were aspirated by using a 22G needle attached to a 20 ml disposable syringe. The aspirated material was expressed on to slides and smears were prepared, dried and stained with MGG stain & PAP stain.

**Statistical Analysis:** The information collected from the

history & examination was correlated with previous studies done in the similar field and results were compared & correlated.

## Results

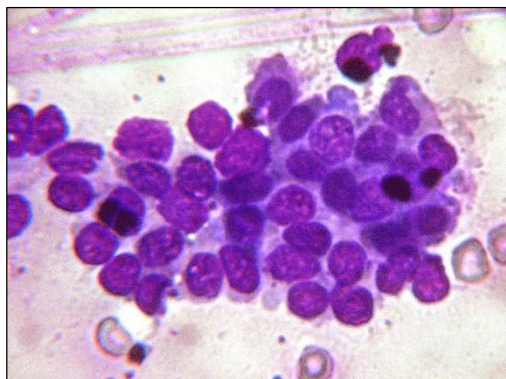
In our present study, the patients were in a wide age group of 20 to 76 years, with maximum number of patients in the age group of 55 to 65 years (34%), followed by 45 to 55 years (24%). The least number of patients were seen in the age group of 15 to 25 years.

**Table-1:** Distribution of Cases According to Known Primary

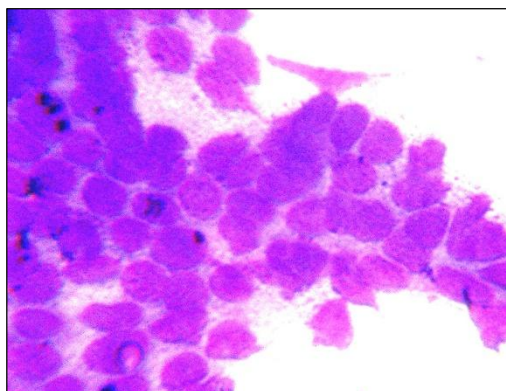
Suspected Primary	No. of Cases	Percentage
Larynx	38	31.93
Nasopharynx	4	3.36
<b>Oral Cavity</b>	<b>58</b>	<b>48.75</b>
Breast	9	7.56
Lung	10	8.40
<b>Total</b>	<b>119</b>	<b>100</b>

**Table-2:** Cytological Diagnosis of Cervical Lymph Node Metastasis

Suspected Primary	No. of Cases	Percentage
Nasopharyngeal Ca	6	3.1
Poorly Differentiated Ca	35	18.4
Adenocarcinoma	23	12.1
Squamous Cell Ca	124	65.3
Small Cell Carcinoma	2	1.1
<b>Total</b>	<b>190</b>	<b>100</b>



**Figure-1:** Cluster of Atypical Cells in Smears



**Figure-2:** Tight Clusters showing Nuclear Overlapping

Of all the patients, most were males (75%), with the male: female ratio of 3:1. A total of 225 patients were subjected to fine needle aspiration. Out of these, 190 cases (84.4%)

were diagnosed cytologically for metastasis. A total of 8 cases (3.6%) were diagnosed as primary lymphoid tumours and the rest 27 (12%) cases were negative for any atypical cells or malignancy. Of 190 cases of cytologically diagnosed metastatic lesions, a known primary site was given in 119 cases (62.63%), while it was unknown in 71 cases (37.37%). Out of 71 cases of unknown primary sites, a cytological diagnosis of squamous cell carcinoma was given in 9 cases (12.7%), adenocarcinoma in 23 cases (32.4%) and poorly differentiated carcinoma was given in 39 cases (54.9%).

## Discussion

In the present study a total of 190 cytologically diagnosed metastatic neck nodes in adult population were further evaluated and compared for cytomorphological features and correlated clinically with primary size.

The male: female sex ratio was 3:1. This is similar to other Indian studies undertaken by Mehrotra et al (3.8:1)<sup>[4]</sup> & Bhattarcharjee et al (2.9:1)<sup>[9]</sup> and is higher as compared with foreign authors, (Engzell et al 1.07:1<sup>[8]</sup> and Ustun et al 1:2<sup>[7]</sup>). This might be due to a prevalent use of tobacco by Indian males which predisposes oral cavity tumours. The studied showed the most common age group for neck node metastasis to be 5<sup>th</sup> and 6<sup>th</sup> decade. This is similar to the results obtained in similar studies.<sup>[4,9]</sup> The most common primary site of metastasis was oral cavity followed by the larynx, which was in accordance to the results obtained by other authors<sup>[2,4,5,6]</sup>.

In the present study the most common cytologically diagnosed malignancy metastasising to neck nodes was squamous cell carcinoma. This is similar to the results obtained by other authors<sup>[1,9,10]</sup>

## Conclusion

Fine needle aspiration is now considered as a routine OPD procedure, safe, rapid and highly accurate to distinguish most lesions of superficially palpable lymph nodes. It is most convenient method for confirmation in suspected metastatic nodes.

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