

Role of FNAC in cytological diagnosis of metastatic lymph node.

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ABSTRACT

Background: FNAC not only confirms the presence of metastatic disease, but also gives the clue regarding the nature and origin of primary malignancy Aim and objective: To Assess the usefulness of FNAC in diagnosis of metastatic lymph node. Data were arranged according to lymph node involved and morphological diagnosis. Study design: Study material comprises of 56 lymph node aspirate diagnosed metastatic carcinoma in cytology out of total 383 cases of Lymphnode aspiration in a one year. **Method:** All FNACs were performed using a 22 gauge needle. An average minimum of 4 slides were made, Slides were routinely stained with both leishmann, Giemsa and Papanicolaou (PAP) stains. **Results:** Out of total 383 lymph node aspirate 56 cases showed metastasis Lymphnode while 327 cases showed other lesion of lymph node. Cervical lymph node was the commonest group involved. Metastasis from squamous cell carcinoma was the most common diagnosis made on cytology. **Conclusion:** In our study we feel that FNAC of lymph nodes as a first line of investigation in developing countries. It is not only useful in the diagnosis of suspected or unsuspected metastatic neck nodes, but can also help in starting the specific therapy in time thus reducing mortality and morbidity.

Keywords: Cervical, Lymphnode, Metastatic, Squamous cell carcinoma.

INTRODUCTION

Malignancies in lymph nodes in our country are predominantly metastatic in nature with an incidence varying from 65.7%^[1] to 80.4%^[2] among lymph nodes aspirated from all sites. Lymphadenopathy is a sign of inflammation, infections, primary or metastatic tumours. This is commonly seen involving the head, neck and inguinal region.^[3] Lymphadenopathy in an adult patient may be the first presenting clinical sign of non-hematologic malignancy. The use of Fine Needle Aspiration Cytology (FNAC) for the diagnosis of metastatic malignancies in the Lymph node is a well-established method.^[4] Fine Needle Aspiration Cytology (FNAC) is a simple and rapid diagnostic technique. Because of early availability of results, simplicity, minimal trauma and complications, the aspiration cytology is now considered a valuable diagnostic aid in diagnosis of metastatic lymph node. Therefore the aim and objective of our study to assess the usefulness of FNAC in diagnosis of metastatic Lymphnode and data were arranged according to lymph node involved and morphological diagnosis.

MATERIALS AND METHODS

This study includes all patients with lymphadenopathy in head and neck region over a period of 1year from January 2014 to December 2014. This study was carried out in the Department of Pathology of Rohilkhand Medical College, over a period of one year to determine the pattern of disease affecting lymph nodes in this region after taking consent from patients and permission from institutions, ethical committee. Acellular/ scant cellular yield, obscuring blood smear and thick cohesive clusters were excluded from our study All FNACs were performed using a 22 gauge needle. An average minimum of 4 slides were made, Slides were routinely stained with both leishmann, Giemsa and Papanicolaou (PAP) stains. Smears showing adequate cellular material was considered as "satisfactory" and were reported as "metastatic carcinoma" with further sub typing wherever possible were included. Smear showing scant cellular yield, obscuring blood and thick cohesive clusters was consider as "Unsatisfactory smears " were excluded from the study.

RESULTS

There were 383 cases of lymph node FNAC done, out of which total 56 nodes reported as "metastatic carcinoma" of lymph node. The most common subtype of metastatic carcinoma was squamous cell carcinoma and was observed in 45 cases. This was

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followed by ductal carcinoma (6 cases) and two cases of adenocarcinoma and one case each of acute leukaemia, apocrine carcinoma and malignant melanoma [Table1]. In our study most common site were the cervical lymph node comprising 36 cases followed by 9 cases from Axillary Lymphnode, 6 cases from Supraclavicular lymph nodes, 3 cases from Submandibular lymph node and 1 case were

from post auricular lymph node and inguinal lymph node [Table 2]. The age of the patient ranged from 22 to 80 years. The incidence was seen to peak at the age range 40 to 60 years showing 28 cases (50%) followed by 17 cases (30.4%) in age group of above 60 years. There were 11 cases (19.6%) below 40 years of age [Table3].

Table 1: Cytological Diagnosis Made on Aspiration of involved Lymph node.

Cytological type of malignancy	Number of cases (n)	Percentage (%)
Squamous cell carcinoma	45	80.3%
Adenocarcinoma	2	3.6%
Acute leukaemia	1	1.8%
Metastatic ductal carcinoma	6	10.7%
Apocrine carcinoma	1	1.8%
Malignant melanoma	1	1.8%
Total	56	

Table 2: Site wise distribution of lymph node

Site	Number of cases (n)	Percentage (%)
Cervical	36	64.3%
Post auricular	1	1.8%
Supraclavicular	6	10.7%
Submandibular	3	5.3%
Axillary	9	16.1%
Inguinal	1	1.8%
Total	56	

Table 3: Age wise distribution of metastatic carcinoma.

Age	Number of cases(n)	Percentage (%)
20-40	11	19.6%
40-60	28	50.0%
60-80	17	30.4 %
Total	56	

DISCUSSION

FNAC is a reliable diagnostic tool for lymphadenopathy in adult patients who are suspected for malignancy as it has less complication, is a simple invasive procedure and can be repeated easily. More than 90% of lymph node metastasis is diagnosed by initial aspiration.^[5] There was no evidence that the tumor spreads through the skin track created by the fine hypodermic needle used in this technique.^[6] Patients with a suspected metastatic lesion evaluated by careful history, physical examination, pathological review and radiological investigations to confirm the primary site. In many cases the diagnosis given on cytological examination is readily accepted and there is no need of histopathological correlation, especially in cases of advanced malignancy. In our study, FNAC was performed in lymph node of the head and neck regions of the 56 patients. This simple technique has gained wide acceptance since it offers a high degree of accuracy, lending itself to out patients diagnosis and thus reducing the cost of hospitalization.^[7]

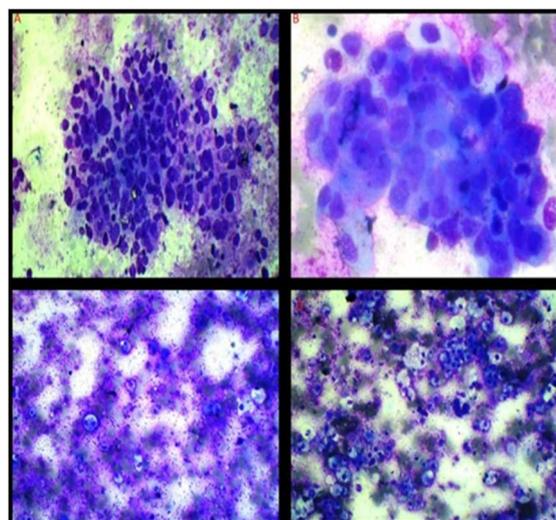


Figure 1: Cytology smear showing cluster of atypical squamous cells with dense cytoplasm and prominent nucleoli background show cystic macrophages and a-nucleated squamous cell (10X, 40X)

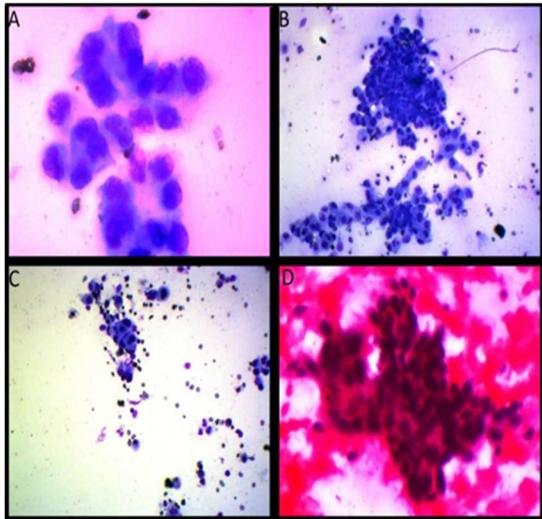


Fig 2: (A).Cytology smear showing metastatic clusters of adenocarcinoma cells even show acinar pattern (X40).(B) Adenocarcinoma cell in small cluster (10X).(C) Cell ball clusters(10X).(D) Cytology smear show monolayered sheet of malignant glandular cell(PAP 10X)

In our study the cervical lymph node was the most common site to be involved by metastatic carcinoma. Similar results were found by other authors.^[7,8,9] In the present study squamous cell carcinoma was the most common metastatic carcinoma followed ductal carcinoma of breast and adenocarcinoma. Studies by other authors showed similar result where squamous cell carcinoma was most common metastatic tumor.^[1,10] In our study squamous cell carcinoma cytology smear showed tumor cells are seen singly scattered and in clusters. The cells have hyperchromatic nuclei, bluish cytoplasm and prominent nucleoli [Figure1]. Metastatic adenocarcinoma was the second most common entity in our study. In adenocarcinoma, cytology smear show cells with acinar arrangement and also singly scattered. The individual cells are usually large, cuboidal to columnar with moderate amount of cytoplasm and pleomorphic nuclei with prominent nucleoli [Figure 2]. Whereas reverse result show by other studies where the most common metastatic subtype were adenocarcinoma.^[11,12]

The age of the patient ranged from 22 to 80 years. The incidence was seen to peak at the age range 40-60 years showing 28cases (50 %), followed by 17 cases (30.4%) in the age group 60-80 years.^[13]

CONCLUSION

Cytology evaluations along with proper clinico-radiological correlation are quite useful in

diagnosing metastasis with good degree of accuracy. In our study we feel that FNAC of lymph nodes as a first line of investigation in developing countries. It is not only useful in the diagnosis of suspected or unsuspected metastatic neck nodes, but can also help in starting the specific therapy in time thus reducing mortality and morbidity.

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