

# Study and Evaluation of Fine-needle Aspiration Cytology Features of Metastatic Deposits in Peripheral Lymph Nodes in the Body in SVS Hospital Mahabubnagar

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## Abstract

**Introduction:** Metastatic malignancy is a more common etiology of peripheral lymphadenopathy than lymphoma, especially in patients over 50 years of age. Fine-needle aspiration cytology (FNAC) is a well-established method for initial diagnosis of metastatic malignancies.

**Aim:** To study the different cytomorphology of metastatic deposits in lymph nodes aspirates by FNAC. Age and site of the lymph node are correlated.

**Materials and Methods:** All the patients presenting with enlarged lymph nodes clinically, at SVS Medical College and Hospital, Mahabubnagar, cases from July 2016 to July 2017 were included in the study. Fnac was done and the standard method for the procedure was adopted. All the slides were reviewed and diagnosis given for malignancy.

**Results:** Metastatic malignancy proved to be the most common diagnosis in our study the highest incidence of metastatic malignancy was seen in 6-7 decades of life and with a male predominance. 30 cases were found to have metastatic tumor cells.

**Conclusion:** This study highlights different cytomorphology of secondary deposits in lymph nodes FNAC, correlated with age and site of the lymph node.

**Key words:** Adenocarcinoma, Cervical lymph nodes, Fine-needle aspiration cytology, Lymphadenopathy, Metastatic deposits, Squamous cell carcinoma

## INTRODUCTION

The key to the diagnosis of lymph node metastasis is the presence of abnormal nonlymphoid cells forming aggregates and clusters, among the normal lymphoid cells and the absence of lymphoglandular bodies.

In patients with enlarged lymph nodes and previously documented malignancy, fine-needle aspiration cytology

(FNAC) can obviate further surgery performed merely to confirm the presence of metastases.

The cytological patterns seen in the aspirated smears of metastatic lymph node are often clues to the site of primary malignancy.

## MATERIALS AND METHODS

All the patients presenting with enlarged lymph node clinically, at SVS Medical College and Hospital, Mahabubnagar, cases from July 2015 to December 2016 were included in the study. Fnac was done, and the standard method for the procedure was adopted. All the slides were reviewed and diagnosis given for malignancy.

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## RESULTS

Metastatic malignancy proved to be the most common diagnosis in our study the highest incidence of metastatic malignancy was seen in 6-7 decades of life and with a male predominance.

30 cases were found to have metastatic tumor cells. 13 cases were diagnosed as metastatic squamous cell carcinoma. 10 cases were diagnosed as adenocarcinoma secondary deposits. 2 cases were malignant melanoma secondaries and another was papillary carcinoma thyroid. 3 were duct cell carcinoma breast to axillary lymph nodes. 2 cases were diagnosed as poorly differentiated carcinoma.

## DISCUSSION

Metastatic squamous cell carcinoma was the most common entity in our study.

Tumor cells are seen mostly in sheets and singly scattered the cells have dense cytoplasm with hyperchromatic nuclei with abundant cytoplasm.<sup>1</sup>

In well-differentiated squamous cell carcinoma the tumor cells show individual cell keratinization.

In the study, the adenocarcinoma was the common metastatic tumor.

Well-differentiated adenocarcinoma cells with acinar and occasionally papillary arrangement and also singly scattered. The individual cells are usually cuboidal to columnar with moderate amount of cytoplasm and nuclei with prominent nucleoli. Cells even show vacuolated cytoplasm indicating intracellular mucin secretion.<sup>2-5</sup>

In the study of papillary thyroid carcinoma shows metastatic deposit in lymph nodes where the cell clusters wherein papillary pattern with central fibrovascular core along with the characteristics vesicular nuclei with nuclear grooving and intranuclear inclusions.

Metastatic ductal carcinoma was seen in 3 cases where all the female patient presented with the breast lumps. Smear yields high cellularity with several loose clusters of tumor cells. Malignant ductal cells have moderate to abundant cytoplasm with pleomorphic nuclei and prominent single to multiple nucleoli.

Melanoma can be seen anywhere in the body.

For example:

- Eyeball, head, neck and great toe and it is can heavy metastasis to any specifically cervical or inguinal nodes. 2 cases of metastatic melanoma both in inguinal lymph nodes.
- These smear show discohesive pleomorphic cells with binucleate or multinucleated forms. The nuclei are large with characteristic prominent 1-2 micronucleoli. Intra- and extra-cellular melanin pigment was seen only in 1 case.
- Primary was known only in 2 case of squamous cell carcinoma that is larynx and gastrointestinal tract and in one case of malignant melanoma that is great toe.
- Ductal carcinoma FNAC of breast and axillary nodes was done simultaneously the most common group for lymph node involvement is cervical lymph node.

Age-wise distribution of FNAC on metastatic lesion of lymph node (Table 1)

Site-wise distribution of FNAC of metastatic lesion of lymph node (Table 2).

Incidence of FNAC on metastatic lesion of lymph node (Table 3).

## CONCLUSION

This study was undertaken to know differences.

**Table 1: Age-wise distribution**

Age group	Number of cases (%)
0-15	0 (0)
16-30	0 (0)
31-45	6 (20)
46-60	10 (30)
61-90	14 (50)
Total	30 (100)

**Table 2: Site-wise distribution**

Site of involvement	Number of cases (%)
Cervical	15 (50)
Submandibular	2 (10)
Submental	1 (5)
Axillary	3 (15)
Inguinal	2 (10)
Supraclavicular	7 (10)
Total cases	30 (100)

**Table 3: Sex wise distribution in 100 cases**

Metastases	Number of cases (%)	Male	Female
Total	30 (100)	17	13

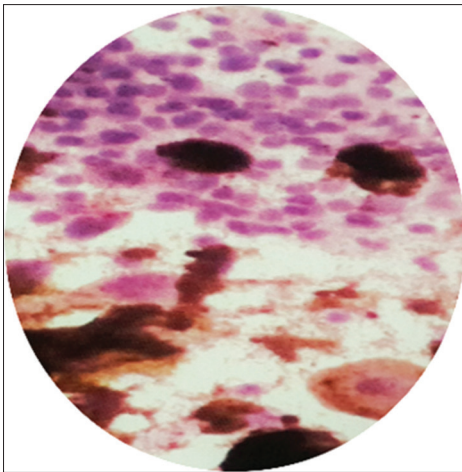


Figure 1: Melanoma deposits

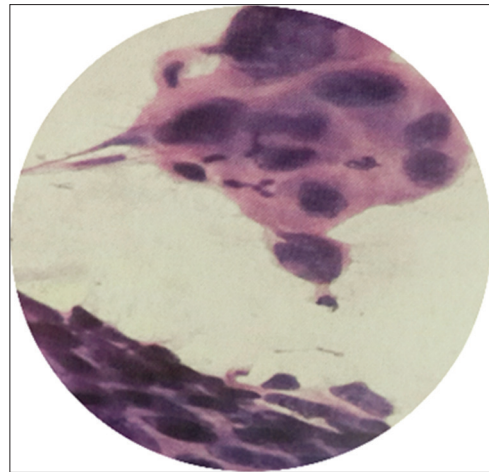


Figure 3: Adenocarcinoma deposits

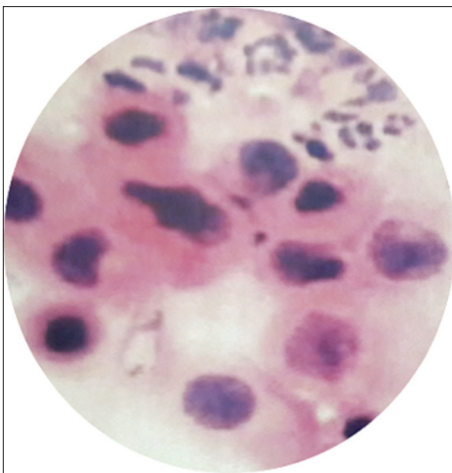


Figure 2: uamous cell carcinoma deposits

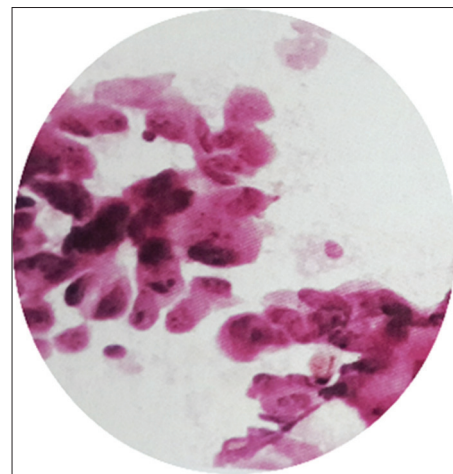


Figure 4: Papillary carcinoma of thyroid deposits

FNAC smear showing metastatic deposits of malignant melanoma (Figure 1).

FNAC smear showing squamous type tumor cell (Figure 2).

FNAC smear showing poorly differentiated carcinoma (Figure 3).

FNAC smear showing adenocarcinoma secondary deposits (Figure 4).

In cytomorphology of secondary deposits from the lymph nodes, correlation with age and site of lymph node involved. In this study, cervical nodes were common groups involved. Male patients are slightly more than females.<sup>6-8</sup> No case of metastasis was sent for histopathological confirmation thus proving that FNAC diagnosis can help surgeon in making a decision regarding the need for excision.

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