

## CYTOLOGICAL DIAGNOSIS OF METASTATIC MELANOMA: A CASE REPORT (METASTATIC MELANOMA DIAGNOSED ON FNAC)

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### ABSTRACT:

*Malignant melanoma is an aggressive tumor with potential to metastasize anywhere within the body. Herein, we report a 51 year male patient clinically diagnosed as diabetic foot ulcer that developed enlarged right inguinal lymph node during treatment. FNAC of right inguinal lymph node was performed. Initial cytological diagnosis of metastatic melanoma was made which lead to clinical suspicion of melanoma masquerading as diabetic foot. Cytomorphological features of metastatic melanoma are described with brief review of literature and value of cytological diagnosis is emphasized.*

**Keywords:** *Fine needle aspiration cytology (FNAC), Lymph node, Metastatic melanoma.*

### INTRODUCTION

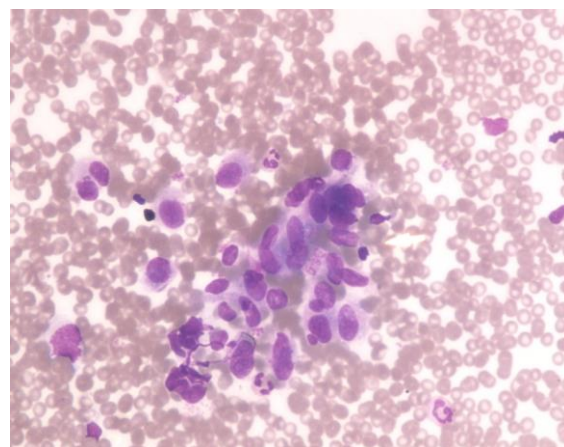
Melanoma is an aggressive tumor of melanocytes, accounting for approximately 3% of all the cancers. Regional metastases (i.e. satellitosis, in-transit metastases, and regional lymph node involvement) are seen in two-third of patients with metastatic spread of malignant melanoma. [1] Early detection of both primary malignant melanoma and metastatic disease is important for initiation of appropriate treatment. Herein, we report a case in which cytological diagnosis of metastatic melanoma was made prior to clinical and histological diagnosis of primary malignant melanoma and the value of cytological examination has been emphasized.

### CASE REPORT

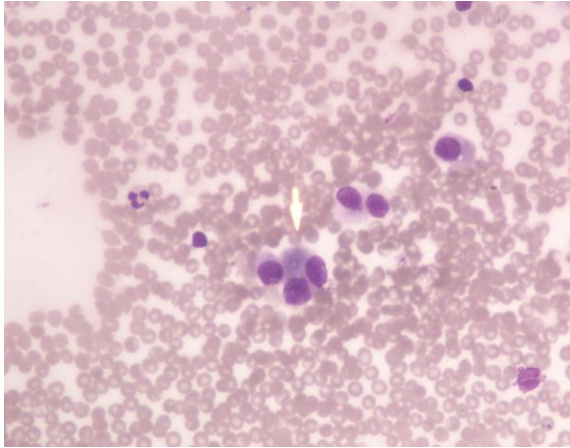
A 51 year male patient presented with swelling in right inguinal region. On examination, right inguinal lymph node was enlarged measuring 4 x3 cm, firm in consistency, not fixed to skin. Patient was known case of diabetes and hypertension and was on treatment for the same. Subsequently he complained of swelling on the foot since 2 months which on examination showed an ulcerated lesion measuring 3x2 cm over lateral aspect of plantar side of foot. Routine hematological and biochemical investigation were within normal limit except HbA1c -7.5 %. Fine needle aspiration of right inguinal lymph node was performed which revealed scattered, pleomorphic round tumor cells having hyperchromatic large nucleus, prominent nucleoli and abundant amphophilic cytoplasm. Few binucleated forms were also seen in the background of lymphocytes and hemorrhage. Few tumor cells showed blue black pigment granules in cytoplasm. Cytological features suggested of metastatic malignant melanoma. [Figure 1, 2] This lead to clinical suspicion to search for primary and biopsy

from foot lesion was sent to surgical pathology section.

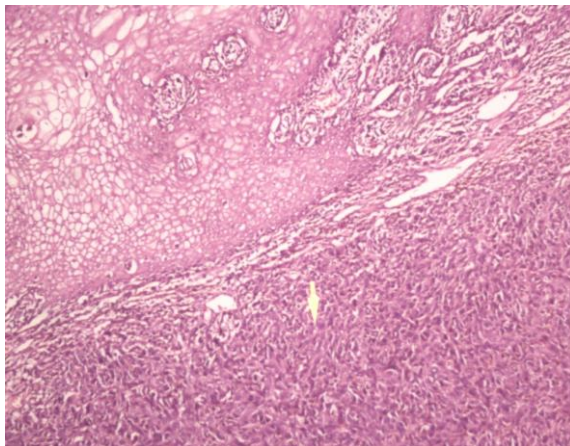
Gross examination revealed multiple skin covered soft tissue pieces ranging from 3x2x1 cm to 1x1x1 cm. Cut section of all were grey white in color, firm to hard in consistency. Microscopic examination revealed a tumor composed of ovoid to round cells forming sheets, cords, clusters invading fibro collagenous and overlying epidermis. Tumor cells showed nuclear angulations with vesicular nuclei, prominent eosinophilic nucleoli. Melanin pigment was seen throughout the depth of the tumor. Histo-pathological diagnosis of malignant melanoma was made which was correlating with the cytological diagnosis of metastatic melanoma in the inguinal lymph node [Figure 3, 4]. Patient was referred to surgical oncology unit for further management.



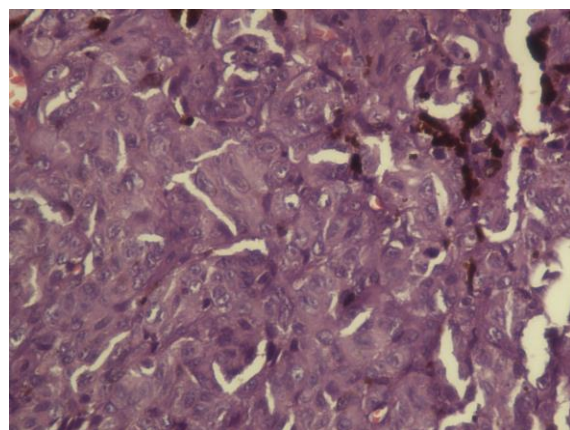
**Fig 1: Cytological smears of high power view displaying pleomorphic tumor cells with high N/C ratio and Intra cytoplasmic pigment.**



**Fig 2: Cytological smears of high power view showing tumor cells with intra cytoplasmic pigment.**



**Fig 3: Biopsy of tumor mass (arrow) with melanin pigment H& E.**



**Fig 4: Tumor cells with vesicular nuclei, prominent nucleoli in sheets and focal melanin pigment, High Power. H& E**

## DISCUSSION

Malignant Melanoma is a potentially aggressive tumor with the ability to metastasize widely. As in most cancers, early detection and

proper treatment may prolong the disease-free survival and mortality rates in a selected group of patients. Fine needle aspiration is commonly used, rapid and minimally invasive procedure.<sup>[2]</sup> It is cost effective, highly reliable technique that is well tolerated by patients when performed by properly trained operators.<sup>[3]</sup> Melanoma may mimic a variety of epithelial and non-epithelial tumors, including poorly differentiated carcinoma, lymphoma and pleomorphic sarcoma.<sup>[4]</sup> Hence identification of metastatic malignant melanoma before diagnosis of primary malignant melanoma presents an increased cytological diagnostic challenge.

The characteristic cytological feature of conventional melanoma are high cell yield, predominantly epithelioid/ plasmacytoid cells with eccentric placed nuclei and a dissociated pattern, abundant cytoplasm with cytoplasmic melanin pigment and prominent anisokaryosis, macro nucleoli, intra nuclear cytoplasmic inclusions and variable numbers of bi and multinucleated cells. In our case, prominent cytoplasmic melanin pigment was seen along with pleomorphic round tumor cells with few binucleated forms in the background of lymphocytes. In present case, the diagnosis of metastatic malignant melanoma was made on cytology prior to clinical and histo-pathological diagnosis of malignant melanoma of the foot lesion.

In metastatic melanoma, misdiagnosis also occurs when appropriate clinical history is not available. Knowledge of a previous history of melanoma is helpful to avoid an erroneous interpretation. Cutaneous melanoma is the most common type of melanoma and usually metastasizes to regional lymph nodes. For cases of metastatic melanoma with an unknown primary origin asking relevant clinical history and checking skin, mucosa and uvea may aid in accurate diagnosis, although the original melanoma may have spontaneously regressed. In present case, diagnosis of metastatic malignant melanoma was initially made on FNAC of inguinal lymph node. Later the biopsy from foot lesion confirmed the primary site.

The documentation of lymph node metastases by FNAC can expedite the performance of definitive regional lymph node dissection and subsequently alter treatment protocols to include chemotherapeutic and immunologic adjuvant therapy. The 5 year survival rate for patients with melanoma metastatic to lymph node ranges from 12-45%<sup>[5-6]</sup> and detection of metastasis is important prognostic indicator. Several studies have documented the utility of fine needle aspiration in diagnosis of both primary cutaneous melanoma and metastatic melanoma.<sup>[7, 8]</sup> A recent study has shown that treatment with interferon- $\alpha$ -2b improves survival in patients with lymph node metastases.<sup>[9]</sup>

## CONCLUSION

FNAC of palpable lymphadenopathy in patients with malignant melanoma can provide rapid and accurate assessment of lymph node status and expedite the therapeutic management of patients especially with unknown primary. Primary care physicians who first encounter such patients should consider FNAC as initial diagnostic procedure of choice by experienced operator.

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