

# Cutaneous metastasis as an initial presentation of an unknown primary

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## ABSTRACT

Cutaneous metastasis from underlying visceral malignancies is a rare phenomenon. Rarely, cutaneous metastasis can be the first manifestation of an underlying malignancy. Cutaneous metastases, in most patients, usually reveal a terminal stage of illness. Hence, in such cases, it is crucial to use a minimally invasive technique for either the diagnosis or exclusion of metastasis. Fine needle aspiration cytology can be used as an alternative to biopsies, as this is a minimally-invasive, relatively simple, rapid and inexpensive procedure. The site of primary may remain unknown in some cases, as was seen in our case.

**Key words:** Cutaneous metastasis, fine needle aspiration cytology, unknown primary

## INTRODUCTION

Cutaneous metastasis from an underlying primary is rare with the incidence being 0.7–10.4%. In 0.8% of the cases, it can be the first manifestation of the underlying malignancy.<sup>[1]</sup> The most common sites of the primary malignancy, in patients presenting with cutaneous metastases, is breast cancer in women and lung cancer in men.<sup>[2]</sup> The site of primary may remain unknown in some cases, which constitutes about 5–10% of all malignancies.<sup>[3]</sup> Around 4.4% cases of cutaneous metastasis are associated with an unknown primary.<sup>[4]</sup> Skin metastasis usually represents terminal stage of malignant disease with limited survival period.<sup>[5]</sup> Fine needle aspiration cytology (FNAC), as an alternative to biopsies, is an excellent method for early diagnosis of such cases.<sup>[6]</sup>

## CASE REPORT

A 56-year-old man, with past history of smoking, presented with multiple subcutaneous nodules on trunk and upper

extremities [Figures 1 and 2] in the Department of Pathology, ESI PGIMSR, ESIC Medical College and Hospital, Joka, West Bengal for FNAC. The swellings ranged in size from 1 cm to 3 cm. The swellings were firm, nontender and not fixed to underlying bone. The upper arm lesions showed ulceration on the surface [Figure 2]. The patient had undergone severe weight loss.

Fine needle aspiration cytology was done using 22 gauge needle with a 10 ml syringe. Particulate material, admixed with blood, was aspirated. The smears were air dried as well as fixed in 100% methanol and stained with May–Grunwald–Giemsa, hematoxylin and eosin and Papanicolaou stains, respectively. On microscopic examination, the smears appeared cellular and comprised of malignant epithelial cells. The malignant epithelial cells were arranged in sheets [Figure 3], clusters [Figure 4], glandular pattern [Figure 5], singles and occasional papillary configuration [Figure 6]. Individual cells were round to polygonal, with moderate cytoplasm and round to oval nuclei with coarse clumped chromatin and prominent nucleoli. Occasional malignant cells also showed the presence of vacuolated cytoplasm. A provisional diagnosis of cutaneous metastatic adenocarcinoma was made, and other relevant investigations were done.

Routine hematological investigations did not reveal any pathology other than anemia. Biochemical parameters and routine urine examination were also normal. Stool for occult blood was negative. The patient was seronegative for HIV

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10.4103/2278-0513.154808

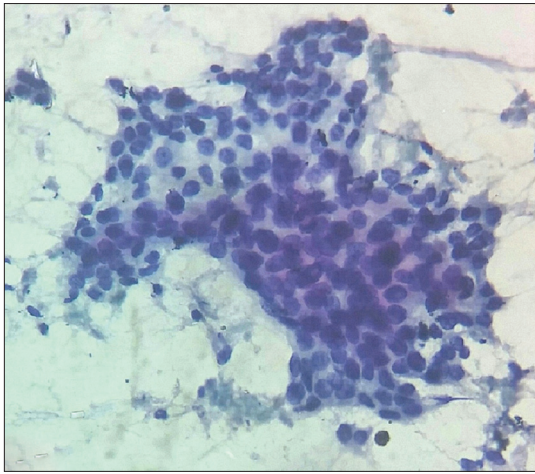
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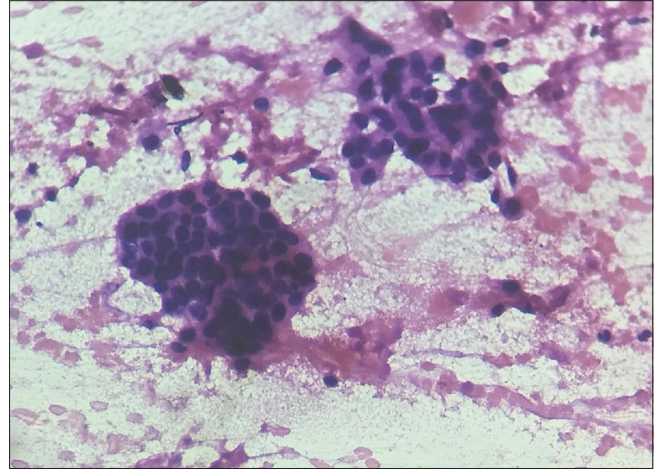
**Figure 1:** Multiple cutaneous nodules on the anterior abdominal wall



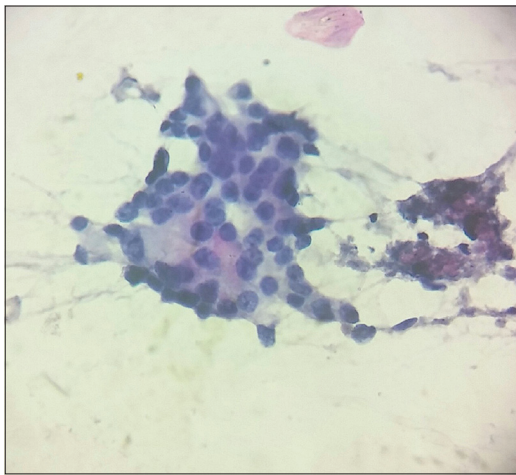
**Figure 2:** Multiple cutaneous nodules on the arm



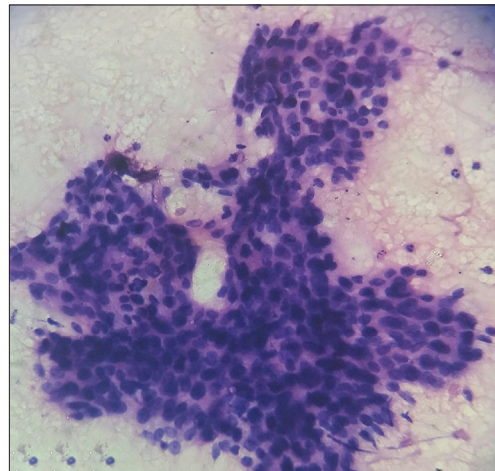
**Figure 3:** Photomicrograph showing malignant epithelial cells arranged in sheet with moderate cytoplasm, round to oval nuclei with coarse clumped chromatin and prominent nucleoli (Pap,  $\times 400$ )



**Figure 4:** Photomicrograph showing malignant epithelial cells in clusters (H and E,  $\times 100$ )



**Figure 5:** Photomicrograph showing malignant epithelial cells arranged in glandular fashion (Pap,  $\times 400$ )



**Figure 6:** Photomicrograph showing malignant epithelial cells arranged in papillary configuration (H and E,  $\times 400$ )

and hepatitis B surface antigen. In order to find the primary tumor, chest X-ray, ultrasound whole abdomen, computed

tomography (CT) scan of thorax and whole abdomen were done, but all the findings were inconclusive to detect the primary site of these cutaneous metastases. Unfortunately

during this period the condition of the patient deteriorated, and the patient was lost to follow-up.

## DISCUSSION

Cutaneous metastasis from a primary visceral malignancy may occur by three different routes: Direct invasion, local metastatic disease, or distant metastasis.<sup>[4]</sup> It has been thought that the primary tumors likely to metastasize to the skin are those that invade veins like as seen in malignancies of kidneys and lungs. The range of clinical presentations traverses a gamut ranging from localized lesions to nodular and inflammatory lesions.<sup>[7]</sup> In our case, it presented as an ulcerated and nodular lesion.

For the majority of patients with malignancy, cutaneous metastasis is considered a grave and ominous sign. It can occur as a result of failure of therapy or recurrence of a previously eradicated tumor or as a vanishing tumor, as patients often present very late to the clinician at the stage of metastases. Rarely, cutaneous metastasis can present as the first sign of an occult malignant tumor, as was seen in our case.<sup>[5]</sup> Similarly, in studies conducted by Nashan *et al.*, and Chopra *et al.*, 22% and 56% cases, respectively, presented with skin metastasis as the first sign, which subsequently led to the diagnosis of visceral malignancy.<sup>[8]</sup>

The primary sites of carcinoma in males, with cutaneous metastases, in decreasing order of frequency are the lungs (24%), large intestine (19%), oral cavity (12%), kidney and stomach (6% each).<sup>[2]</sup> Abdominal wall is the most common site of metastasis, for tumors presenting as cutaneous metastatic disease, as was present in our case.<sup>[9]</sup>

Cutaneous metastases are mostly multiple and rarely solitary, as was seen in our case. However, in studies conducted by Karki *et al.*, and Sharma *et al.*, multiple site involvement was found only in 21% and 9% cases respectively.<sup>[5,10]</sup>

It is very essential to distinguish metastatic skin lesions from primary adnexal tumors and primary squamous cell carcinoma of the skin. Some of the indicators of metastasis are presence of pools of extracellular mucin, signet ring cells and three-dimensional papillae. In our case, we found three-dimensional papillae [Figure 6].<sup>[10]</sup>

## CONCLUSION

Cutaneous metastasis may be the presenting symptom in many cases with underlying occult malignancies and is usually a late manifestation of an internal malignancy. FNAC, being a relatively simple, rapid, inexpensive and minimally invasive procedure, is an important diagnostic tool in such cases. Hence, our case, who presented primarily with cutaneous metastasis and vanishing primary, drives home the importance of performing FNACs in all such patients who present with nodular and ulcerated skin lesions.

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**Cite this article as:** Dey A, Sinha RT. Cutaneous metastasis as an initial presentation of an unknown primary. *Clin Cancer Investig J* 2015;4:399-401.

**Source of Support:** Nil, **Conflict of Interest:** None declared.