

# Multiple cutaneous metastasis of renal cell carcinoma: A rare presentation

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## ABSTRACT

Apart from breast carcinoma, malignancies rarely spread to the skin. Although renal cell carcinoma (RCC) has a high metastatic potential, metastasis to the skin is extremely rare. We present a case of a 50-year-old male with multiple nodular cutaneous metastases. Four months postnephrectomy, he was diagnosed cytologically and confirmed histopathologically. Such patients must be subjected to long-term clinical observation. Clinicians should pay attention to cutaneous lesions appearing in the patients with known case of internal malignancies. Prompt diagnosis and treatment will have its bearing on the eventual outcome.

**Key words:** Cutaneous, fine-needle aspiration cytology, multiple

## INTRODUCTION

Renal cell carcinomas (RCCs) are the most common form of malignant renal tumors accounting for 3% of all adult malignancies. About 25% of the patients develop metastasis at the time of diagnosis and in many cases during the course of the disease. The most common sites of metastasis are lung, liver, and lymph node, with skin metastasis being relatively quite rare (6% of the cases). We present a case of a 50-year-old male with RCC, metastasizing to the skin diagnosed on fine-needle aspiration cytology (FNAC). There are very few reports on the cytodiagnosis of cutaneous metastasis from RCC in regards to post nephrectomy patients.

## CASE REPORT

A 50-year-old male presented with the complaint of four painless soft tissue swellings over the back region of 10 days duration. On examination, the swelling which was situated

on the left-sided flank region had a firm consistency, mobile and mild tender in nature, and size of about 2 cm × 2 cm. The other two swellings which were situated on the right infrascapular region were firm-to-hard in consistency, partially mobile and nontender in nature, and size of about 0.5 cm × 1 cm and 1 cm × 1 cm, respectively. One another swelling was also noted in the left infra auricular area ms 0.3 cm × 0.2 cm, hard to firm in consistency, fixed and mild tender.

No significant past history was given at this point. Radiological investigation also did not give any evidence of non-neoplastic or neoplastic lesion, but some abnormal findings such as serum urea - 43.14 (normal - 15–39 mg/dl), serum creatinine - 1.72 (normal - 0.7–1.3), and serum chloride - 114.6 (normal - 95–105 mmol/L) raised the suspicion of altered renal function. FNAC was performed from the back swellings, and cell block was also made. Immunohistochemistry (IHC) was performed by using epithelial membrane antigen (EMA). Smears from the back swelling were stained by May-Grünwald-Giemsa and hematoxylin and eosin stains. Smears were hypercellular and showed clusters, acini, and isolated cells. Cells showed moderate amount of granular eosinophilic at places of

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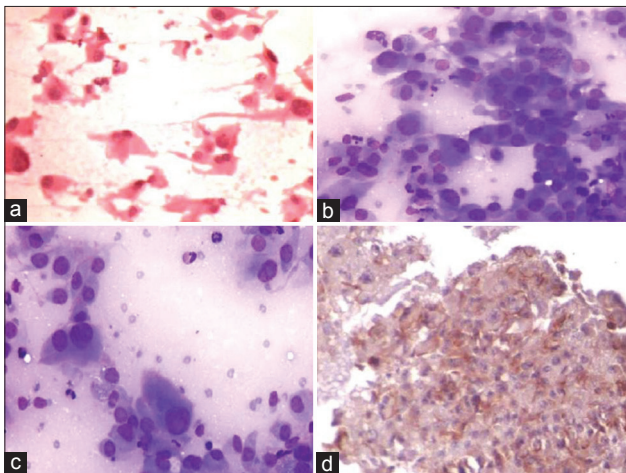
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vacuolated cytoplasm, central or eccentrically placed nuclei. Nuclei showed hyperchromatism, moderate to marked pleomorphism, numerous mitoses, and also prominent nucleoli [Figure 1a-c]. Based on smear examination, a diagnosis of metastatic malignant epithelial neoplasm with the possibility of RCC was made. It was further confirmed by positive staining with IHC for EMA on cell block prepared from material aspirated from cutaneous swelling [Figure 1d]. Initially, the patient did not give any significant past history, but on further questioning, he revealed a history of kidney mass that was operated 5 months back at some other center. Histopathology revealed to be RCC.

## DISCUSSION

The incidence of cutaneous malignancies from internal malignancies is quite low, varying from 4.5% to 9%. In a recent analysis, it was estimated at 5.3%. Cutaneous malignancies usually appear as late events in the course of a known neoplastic disease, but they may present as a sign of an unknown tumor or the first manifestation of recurrence of a tumor, considered to be in complete remission. Skin involvement as first presentation of cancer is rare and is reported in approximately 1% of the patients with internal neoplasm, and mostly with cancers of lung, kidney, and ovary.<sup>[1]</sup> This metastasis can occur everywhere in the subcutaneous tissue, but they tend to be close to the primary cancers.<sup>[2]</sup> RCC is a primary tumor in approximately 6% of the skin metastasis.<sup>[3]</sup>

Usual sites of metastasis from RCC are lung, lymph node, and bone.<sup>[4]</sup> There is 11% of RCC metastasis to the skin. Thus, it is not an uncommon site and therefore should be kept in mind while evaluating a patient with cutaneous lesion.



**Figure 1:** (a) Smear from cutaneous swelling showing singly scattered cells with moderate amount of cytoplasm and pleomorphic nuclei (H and E, ×100), (b) smears showing atypical mitosis (May-Grünwald-Giemsa, ×400), (c) smears showing prominent nucleoli (May-Grünwald-Giemsa, ×400), (d) cell block showing epithelial membrane antigen positivity

Spontaneous regression of skin metastasis is also reported. Rich vascular structures of RCC facilitate hematogenous extension and development of distant metastasis. Almost 25% of the patients with RCC have a distant metastasis during the time of diagnosis. The latent period of metastasis ranges from 20 to 25 years. The clinical behavior of metastatic RCC is unpredictable.<sup>[5]</sup> Skin metastases are usually considered late manifestations of the disease, bearing a poor prognosis that is associated to synchronous visceral metastases in up to 90% of the cases, resulting in tumor-specific survival of usually shorter than 6 months. Due to the late development of the skin metastases, the prognosis worsens, these patients must be subjected to long-term clinical observation.

Most cases of cutaneous metastasis reported were males suggesting a higher incidence of cutaneous metastasis in males. Most cutaneous metastases present as solitary, red-to-purple skin lesion.<sup>[5]</sup> In a study done by Dorairajan *et al.*, scalp was found to be the most common site of cutaneous metastasis followed by chest and abdomen.<sup>[6]</sup>

The differential diagnosis in these patients may include angioma, cutaneous horns, and basal cell carcinoma. Fine-needle aspiration is useful in such cases. The aspirates reveal clear cells; the cytologic differentials include sebaceous adenoma, sebaceous carcinoma, sebaceous epithelioma, clear cell hydroadenomas, and other skin pathologies characterized by the presence of clear cells. Immunocytochemistry with EMA, carcinoembryonic antigen, and CD-10 can confirm skin metastases of renal origin.

## CONCLUSION

Cutaneous metastasis must be considered in a new onset of pulsatile or vascular skin nodule in a patient, especially with a past history of nephrectomy. Role of cytology and further IHC can help in reaching a conclusion.

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### Conflicts of interest

There are no conflicts of interest.

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