

Scalp Metastasis of a renal cell carcinoma: Case report

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Abstract: Metastasis of renal cell carcinoma is a common occurrence. However, it is very rare for these metastases to appear in unusual locations. In this case, we present the instance of a patient in his 70s who developed an ulcerating scalp tumor topped by a hemorrhagic crust, three years after the initial diagnosis of a stage T2b non-metastatic renal cell carcinoma. The primary tumor was treated with a nephrectomy and combined chemotherapy. Surgical removal of the skin tumor revealed, through pathology and immunohistochemistry, a metastatic clear renal cell carcinoma.

1- INTRODUCTION

Clear cell renal cell carcinoma is the most common type of kidney cancer, accounting for 75% of all renal cell carcinomas. The primary treatment for this type of cancer is surgery, and it is often discovered incidentally during abdominal imaging or, less commonly, through clinical presentation such as hematuria, lateral dorsal or flank pain, and the presence of a palpable abdominal mass [1].

Skin metastases are uncommon and are observed in only 2.8-6.8% of patients [2]. Among reported cases in the literature, the most frequent sites for cutaneous metastases are the abdomen and chest. These lesions typically appear between 6 months and 5 years after the initial diagnosis and are associated with a poor prognosis. Therefore, studying cases of cutaneous metastases is crucial for understanding the importance of early detection and prompt diagnosis [3][4].

2- CASE PRESENTATION :

We present the case of a male in his 70s with a medical history of stage T2b renal cell carcinoma of the right kidney. The tumor was classified as Fuhrman's grade II and had been present for a period of two years. The patient underwent radical nephrectomy of the right kidney followed by appropriate combined chemotherapy.

Three years after the initial diagnosis, the patient sought consultation with the dermatology service due to a scalp lesion that had been present for four months. The lesion had been progressively evolving and was associated with spontaneous bleeding over the course of a month [Figure 1].

During the clinical examination, a well-defined ulcerating tumor with an indurated base and a surface covered with a hemorrhagic crust was observed. The tumor exhibited bleeding upon contact and measured 3 cm in length. It was located in the coronal region of the scalp [Figure 1, 2].



Figure 1 : Clinical findings of the scalp tumor.

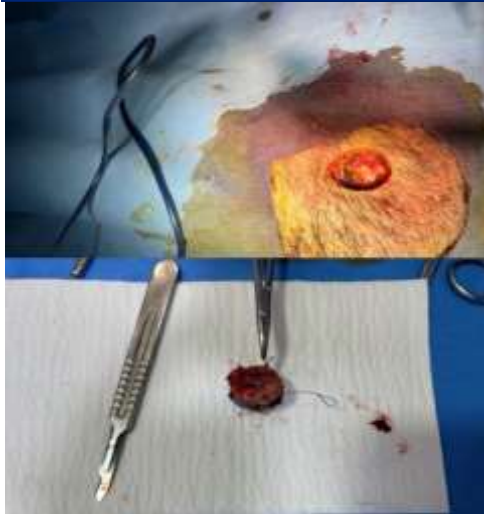


Figure 2 : Per-operative scalp mass removal.

3- INVESTIGATION :

A computed tomography (CT) scan of the skull was performed, revealing a superficial heterogeneous mass in the parieto-occipital region. There was no evidence of infiltration into the skull bones, and no metastasis was detected in the body scan.

Based on these findings, surgical resection of the scalp tumor was planned as a probable skin metastasis, considering the patient's medical history. The surgical plan involved a margin of 0.5 cm. The excised tumor was sent for further pathological evaluation. Histological studies confirmed the presence of clear cell carcinoma [Figure 3].

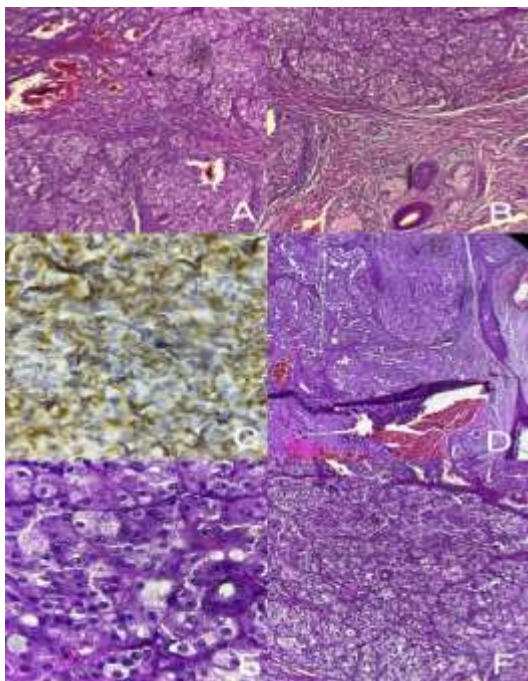


Figure 3 : Histology findings of the lesion.

Immunohistochemistry results showed moderate to marked nuclear positivity for PAX8 in tumor cells. Additionally, there was an expression of CD10 on many cell membranes, with a more intense presence at their apical pole. The lesion also tested positive for AE1 and AE3, and negative for CK7, CK20, and Melan A. Based on these findings, a final diagnosis of cutaneous metastatic renal cell carcinoma was established.

4- DIFFERENTIAL DIAGNOSIS :

Considering the patient's history of cancer, the presence of a cutaneous metastatic cancer was highly suspected. However, the appearance of the lesion also raised the possibility of a pyogenic granuloma or a hemangioma.

5- TREATMENT :

No additional treatment was required since the isolated skin lesion was completely surgically removed with adequate margins.

6- OUTCOME AND FOLLOW-UP

Four months after the emergence of the skin lesion, the patient's three-month follow-up revealed the presence of liver and lung metastases. Due to the poor prognosis and the anticipated limited lifespan, the patient has transitioned to palliative care.

7- DISCUSSION

Cutaneous metastasis of renal cell carcinoma is an extremely rare occurrence, with only a few reported cases in the literature thus far. These lesions typically manifest in the advanced stages of the disease but can be observed at any stage [3]. Renal cell carcinoma commonly metastasizes to the lungs, liver, bones, lymph nodes, contralateral kidney, or adrenal glands due to their proximity or hematogenous dissemination [4].

Skin metastasis is an uncommon condition that tends to occur between six months and five years after the initial diagnosis of renal cancer. In the case of Murat et al., cutaneous renal metastasis was detected 14 months later. Our case aligns with the existing literature, as the onset of skin metastasis was observed three years after the diagnosis of renal cell carcinoma [5][6].

In terms of the site of preference for these cutaneous metastases, they are commonly found in the abdomen and chest due to their proximity to the renal region, followed by the face and scalp as a result of lympho-hematogenous dissemination [7][8]. Consequently, scalp metastasis is an

exceedingly rare occurrence. However, a few studies have reported cases of scalp metastasis, which may suggest the presence of other concurrent distant metastases or a recurrence [9][10][11]. In our case, skin metastasis was observed in the absence of other distant metastases or recurrence. It was only four months later that liver and lung metastases were detected, making this presentation even more uncommon.

The morphology of cutaneous metastases can vary significantly. They often appear as nodular lesions with rapid changes in skin color or erythema [12]. The consistency of these lesions can range from firm to elastic and may or may not be accompanied by pain [13]. In some cases, alopecia in front of the tumor has been described, such as in a case of cutaneous metastatic breast carcinoma [14].

Macroscopically, cutaneous metastases can be mistaken for angiomas, squamous cell carcinomas, trichilemmal carcinoma, or basal cell carcinoma of the scalp. Microscopically, they may resemble xanthomas or adnexal tumors, underscoring the importance of immunohistochemical studies. Markers such as EMA, CEA, CD-10, and RCC-MA confirm the renal origin of the metastasis [4].

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Therapeutic approaches for cutaneous metastasis include radical nephrectomy, surgical excision of the lesion, and the administration of angiogenesis/multikinase inhibitors like sunitinib and sorafenib [5]. In our case, no additional treatment was administered apart from the surgical removal of the cutaneous metastasis.

LEARNING POINTS/ TAKE HOME MESSAGES

+ Cutaneous metastases of renal cancers are indeed a rare occurrence, and they can manifest at various time points, including at the time of diagnosis, prior to diagnosis, or several years after the initial diagnosis.

+ Surgical intervention is often the primary management approach for cutaneous metastases, and in many cases, it may be sufficient. However, depending on the specific circumstances and extent of the metastasis, chemotherapy or radiotherapy may also be considered as part of the treatment plan.

+ It is crucial to bear in mind the significance of addressing cutaneous metastases promptly. Failure to adequately treat these lesions can lead to recurrence, which can further contribute to increased morbidity and mortality in affected individuals.