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Cutaneous metastasis as the first presentation of poorly differentiated renal cell carcinoma: A case report

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ABSTRACT

Renal cell carcinoma (RCC) exhibits a propensity for unusual wide metastasis. Cutaneous metastasis from RCC is a rare and poorly recognized clinical entity. We present a case of cutaneous metastasis of poorly differentiated RCC in 49-year-old male patient. In the presented case, the skin lesion was the first sign of widely spread RCC. After the establishment of the diagnosis using radiological and histopathological assessments, the patient was labeled as a terminal case and was referred for pain management. He deceased after 6 months of the initial presentation.

1. Introduction

Cutaneous metastasis of renal cell carcinoma (RCC) is a rare clinical entity mostly presented in case reports. Understanding the pathophysiology of RCC cutaneous metastasis and its tendencies, clinical course, and clinical outcomes is paramount for further development of therapeutic interventions and therapeutic protocols designed to manage them and mitigate their occurrence. However, data are still relatively scarce and further reports and larger studies are warranted. Here we present a case of cutaneous metastasis of poorly differentiated RCC as the first clinical presentation.

2. Case presentation

A 49-year-old male patient with non-contributary past medical and surgical history presented with right flank skin nodule for 1-month duration. It was characterized as painless, rapidly progressive, non-itchy, subcutaneous nodule with overlying ecchymosis-like lesion surrounded by skin induration. Apart from this complaint, no other significant findings were yielded during detailed history taking. Physical examination showed only marked diffuse painless lymphadenopathy.

A suspicion of metastatic neoplasm was raised. Further evaluation with computed tomography illustrated a large lobulated ill-defined heterogenous mass seen arising from the upper pole of the right kidney, containing areas of necrosis, measuring about 7.5 x 6.9 × 7.7 cm (Fig. 1A), causing compression effect on the right renal vein and renal pelvis with multiple pathologically enlarged retrocrural, precaval, left and right paraaortic, precaval, retrocaval, aortocaval, mesenteric, bilateral common iliac, right external iliac and bilateral inguinal lymph nodes. A marked diffuse subcutaneous skin thickening, fat stranding and muscular hypertrophy were noted in the right flank region alongside few subcutaneous enhancing lesions, the largest one measuring 1.2 × 1.6 cm (Fig. 1B) concerning for metastatic lesions. These findings were consistent with widely metastasized RCC. Additional scans showed marked bilateral deep cervical, supraclavicular, axillary, subpectoral, superior mediastinal, pretracheal, perivascular, right paratracheal, subcarinal, and paraoesophageal lymph node enlargement. Some of these lymph nodes showed central necrosis.

Right axillary lymph node true cut biopsy shows a lymphoid tissue infiltrated by malignant cohesive epithelial cells arranged in sheets with vague nesting pattern. Taking into consideration, the widely metastasized neoplasm, thus risking seeding of the biopsy tract. The tumor cells are immunoreactive for PanCK, AMACR, and vimentin and negative for CK7, CK20, and LCA immunestains. Unfortunately, back then, renal specific markers as in PAX8 were not available in our histopathology laboratory. The findings highlighted evidence of metastasized poorly

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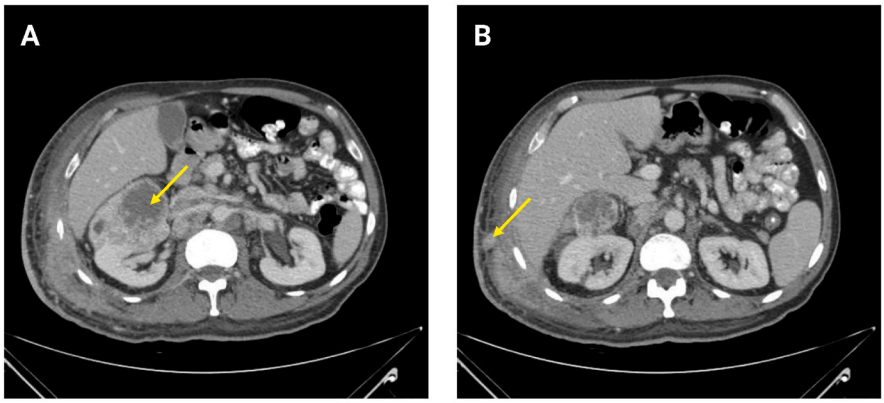

Fig. 1. Computed tomography scan illustrated a large lobulated ill-defined heterogenous mass seen arising from the upper pole of the right kidney, containing areas of necrosis, measuring about 7.5 x 6.9 × 7.7 cm (A, yellow arrow). Right flank subcutaneous enhancing lesion measuring 1.2 × 1.6 cm concerning for a metastatic lesion. (B, yellow arrow).

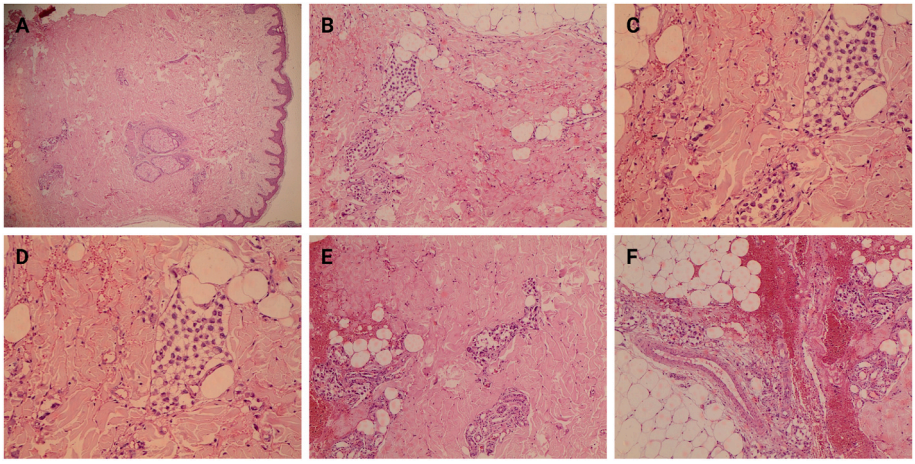

Fig. 2. Histopathological examination of the excised subcutaneous flank lesion confirming the diagnosis of cutaneous RCC (A–F).

differentiated RCC. Skin biopsy was performed as well which were in concomitant with cutaneous metastases of RCC (Fig. 2). No chemotherapeutic nor radiation therapy were offered. Theraputic doses of sunitinib were prescribed. The patient was then referred to our palliative care service. The patient deceased after 6 months of the initial presentation.

3. Discussion

Metastatic RCC constitutes about one third of all newly diagnosed cases, with additional 20–50% expected progression of benign cases, with a very poor 5-year relative survival of 12%.[1] Bianchi et al. in a population-based analysis reported the most common sites of metastasis for RCC to be the lungs (45.2%), followed by bone (29.5%), lymph nodes (21.8%), liver (20.3%), adrenals (8.9%) and finally the brain (8.1%).[2] Cutaneous metastasis of RCC is a rarely diagnosed clinical entity, reported for the first time in 1902 by Eastwood.[3] In a Japanese literature review of 75 cases, it has been found that the period between the diagnosis and the appearance of a cutaneous lesion was long indicating a late manifestation of the disease and poor prognostic disease course.[4] Cutaneous metastasis of urologic malignancies has been reported for all metastatic malignancies to be 1.3%, with the kidney being the most common site of original malignancy (3.4%).[5] Primarily, cutaneous metastasis occurred in clear cell subtype, as well as occurring in other subtypes, however it has not been reported in chromophobe tumors.

4. Conclusion

In this report we present an extremely rare case of cutaneous RCC metastatic lesion as the first clinical presentation. Cutaneous metastasis of RCC is identified as poor prognostic finding and usually associated with advanced and terminal disease course.

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Availability of data and materials

Not applicable.

Ethics approval and consent to participate

This report has been conducted and written in accordance with the ongoing regulations for case reports and case series in the King Abdullah University Hospital (KAUH). IRB approval was granted to publish the case presentation and its associated images (IRB number: 51/148/2022).

Declaration of competing interest

The authors declare no conflict of interest.

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