



Case Report

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# Acrometastases in Renal Cell Carcinoma: A Case Report and Review of Literature

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## Abstract

Skin metastases represent a rare entity, with an overall incidence of <2% among all metastatic lesions and 3% of all Renal Cell Carcinomas (RCC). They are more common in males. They usually get misdiagnosed, initially, due to their close resemblance with other inflammatory conditions of the skin. Most common sites of skin metastases include the head, neck and trunk in that order. We report the case of a Renal Clear Cell Carcinoma (RCCC) with a right index finger metastasis. Our case should raise clinicians' awareness for digital lesions in patients with a known history of renal cell carcinoma.

## Keyword

Carcinoma; Inflammatory; Renal cell; Metastatic; Lesions

## Introduction

Acrometastasis represent a rare entity, constituting 0.1% of metastases. Most commonly, the primary cancer site that can lead to acrometastasis is the lung, followed by colorectal, breast and genitourinary tract. Occasionally, it can imitate a benign condition and be the primary presentation of an occult cancer. However, they are usually seen in patients at a critical state, with advanced disseminated disease [1,2]. Treatment remains debatable.

## Case Report

A 76 year old male patient, with a history of RCCC, for which he had undergone a radical nephrectomy 5 years ago, was examined by his dermatologist for a rapidly growing ulcerated lesion in his right index finger. A skin lesion biopsy was performed and the sample was sent to our laboratory for histopathologic evaluation. The lesion was composed of clear cells and a capillary rich network invading the stroma and the subcutaneous adipose tissue, with focal areas of abscess formation and necrosis. The findings were suggestive of a RCCC, which was confirmed by immunohistochemistry for CK-PAN(+) and PAX-8(+). Two months later, the patient developed a new tan brown lesion in his left temporal lobe, with pathologic examination being positive for a new metastasis from the known RCCC. The histological features were similar to those described earlier. Within a few days after the lesion was excised, the patient experienced a stroke episode

as a result of metastasis of the RCCC to the brain. Brain metastases cause significant peritumoral oedema and as a result of these tumors' vascularity, they have the ability to progress to intracranial hemorrhage [3] (Figures 1-3).

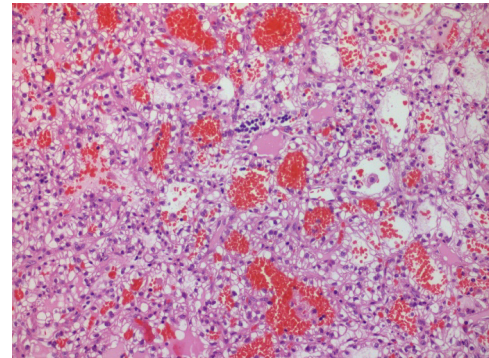


Figure 1: Solid nests of large, clear neoplastic cells (H+E X200).

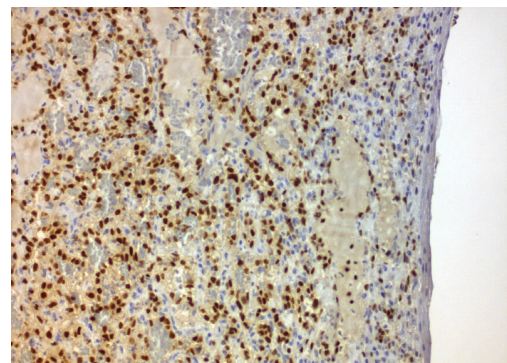


Figure 2: Neoplastic cells with intense nuclear staining for PAX8 (X200).

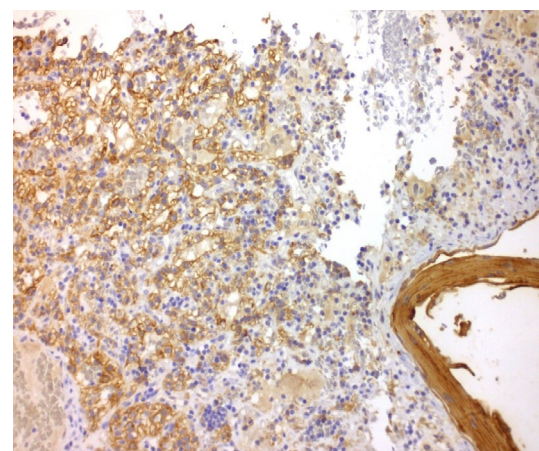


Figure 3: Positive cytokeratin (AE1/AE3) immunostaining of tumor cells (X200).

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## Discussion

The rare event of acrometastasis to the hand was first described by Handley [4], a British surgeon, who reported the case of a woman with breast cancer who later developed multiple metastases at the metacarpals. Clinical presentation includes an erythematous, swollen, warm and painful lesion, which, in case of advanced tumors, it can become severely irritated and ulcerated with functional impairment. When appreciating the radiologic appearance of such irregular osteolytic lesions, with absence of periosteal involvement and a known history of malignancy, it should always raise suspicion for acrometastasis. Nevertheless, other inflammatory conditions, such as gout, osteomyelitis, rheumatoid arthritis, whitlow, fistula and osteoarthropathy should be excluded first [5].

Renal cell carcinomas show a great geographic variability in their prevalence, with the highest incidence being found in Europe and North America. Smoking, hypertension, obesity and polycystic kidneys are among the most common risk factors for renal carcinomas [6].

High vascularization of malignant renal tumors renders them capable for metastasis, mostly along the hematogenous route. Among the most prevalent sites of metastases are the lungs (50%), lymph nodes (35%), liver (30%), bones (30%), adrenal glands (5.5%) and brain (2%) [7].

RCC represents 2%-3% of all malignant tumors [8], from which only 10% of cases present with the classic triad of urological symptoms; flank pain, an abdominal mass and hematuria. It is estimated that 40% of patients with localized advanced disease develop metastasis, while 20% of patients with RCC present with metastatic disease at the time of diagnosis. Although novel therapies have improved the outcome of patients with renal cancer, long term survival for those with advanced disease can only be achieved by aggressive surgical resection [9].

Flynn et al. [10] studied hand metastases among 257 cases of patients, with 31 (12%) of them being related to a primary renal carcinoma. The study revealed a two-fold higher incidence in males, most frequently involving the distal phalanx and fifth finger. The authors came to the conclusion that, although further investigation on the mechanism of metastasis of RCC to the hand needs to be made, there is increasing evidence that a physical trauma could precede the metastasis.

For purposes of pain palliation and survival prolongation, amputation is the suggestive way of treatment [11], in most cases with a poor, however, outcome. It is generally estimated that most patients, with hand metastasis, survive less than 6 months [12].

## Conclusion

High vascularization of malignant renal tumors renders them capable for metastasis, mostly along the hematogenous route. Among the most prevalent sites of metastases are the lungs, lymph nodes, liver, bones, adrenal glands and brain.

For the purposes of the pain palliation and prolongation, amputation is the suggestive way of treatment, in most of the cases with a poor, however, outcome, it is generally estimated that most patients, with hand metastasis, survive less than six months.

## References

- Hernández-Cortes P, Caba-Molina M, Gomez-Sanchez R, Rios-Peregrina R (2015) Renal clear cell carcinoma acrometastasis. An unusual terminal condition. J Hand Microsurg 7: 149-151.
- Stomeo D, Tulli A, Ziranu A, Perisano C, De Santis V (2015) Acrometastasis: A literature review. Eur Rev Med Pharmacol Sci 19: 2906-2915.
- Suarez-Sarmiento A Jr, Nguyen KA, Syed JS (2019) Brain metastasis from renal-cell carcinoma: An institutional study. Clin Genitourin Cancer 17: e1163-e1170.
- Handley WS (1907) Cancer of the breast and its operative treatment. Bristol Med Chir J 25: 253-254.
- Rommer E, Leilabadi SN, Lam G (2014) Metastasis of hepatocellular and renal cell carcinoma to the hand. Plast Reconstr Surg Glob Open 1: e83.
- Chow WH, Dong LM, Devesa SS (2010) Epidemiology and risk factors for kidney cancer. Nat Rev Urol 7: 245-257.
- Hanno P, Wein A, Malkowicz SB (2001) Clinical manual of urology. 3<sup>rd</sup> edn New York, NY: McGraw Hill.
- Rini BI, Campbell SC, Escudier B (2009) Renal cell carcinoma. Lancet 373: 1119-1132.
- Ljungberg B (2013) The role of metastasectomy in renal cell carcinoma in the era of targeted therapy. Curr Urol Rep 14: 19-25.
- Flynn CJ, Danjoux C, Wong J, Christakis M, Rubenstein J, et al. (2008) Two cases of acrometastasis to the hands and review of the literature. Curr Oncol 15: 51-58.
- Shannon FJ, Antonescu CR, Athanasian EA (2000) Metastatic thymic carcinoma in a digit: A case report. J Hand Surg 25: 1169-1172.
- Hsu CS, Hentz VR, Yao J (2007) Tumours of the hand. Lancet Oncol 8: 157-166.

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