



ISCHIO-RECTAL FOSSA METASTASIS FROM CLEAR CELL RENAL CELL CARCINOMA: AN UNCOMMON METASTATIZATION SITE.

Giorgia Santandrea*	Department of Morphology, Experimental Medicine and Surgery, University of Ferrara, Ferrara, Italy. *Corresponding Author
Eleonora Rossin	Department of Morphology, Experimental Medicine and Surgery, University of Ferrara, Ferrara, Italy.
Daniele Marcello	Unit of General Surgery, Azienda USL di Ferrara, Ferrara, Italy.
Sergio Sartori	Department of Interventional Ultrasound, S. Anna University Hospital, Ferrara, Italy.
Paola Tombesi	Department of Interventional Ultrasound, S. Anna University Hospital, Ferrara, Italy.
Paolo Carcoforo	Department of Morphology, Experimental Medicine and Surgery, University of Ferrara, Ferrara, Italy.

ABSTRACT

Background: Renal cell carcinoma can be associated with synchronous metastases in 25-30% of cases, and about 30% of patients undergoing radical surgery will develop metachronous metastases during their life.

Case report: In the case described, the patient underwent two renal tumorectomy (in 2016 for clear cell renal cell carcinoma and in 2019 for clear cell renal cell carcinoma recurrence) and in February 2020 follow-up CT abdomen showed a nodularity with contrast impregnation in the left ischio-rectal fossa, without renal recurrence, suspicious local nodes or vascular thrombosis. Ultrasound-guided biopsy was performed, and histological exam identified aggregates of atypical cells with clear cytoplasm, consistent with the renal origin of the neoplasm. The patient underwent surgical exeresis of the nodularity and histological examination of the specimen confirmed the renal origin.

Conclusion: To our knowledge this is the first case report of such metastasis localization of clear cell renal cell carcinoma, and metastatization pathway is difficult to clearly identify.

KEYWORDS : renal cell carcinoma, perineal metastasis, interventional ultrasound.

Background

Renal cell carcinoma (RCC) is the fourteenth most common malignancy in the world ^[1], with an incidence of 4.6% and 3% in men and women, respectively ^[2]. Synchronous metastases are observed in 25%-30% of cases regardless of the size of the primary tumor, and about 30% of patients will develop metachronous metastases after surgical resection of the tumor ^[3,4]. The most frequent sites of distant spread are lungs (50-60%), bones (30-40%) and liver (30-40%), but also brain and skin can be involved ^[3,5].

We report a quite unusual case of ipsilateral perineal metastasis of RCC occurring after surgical resection of the primary tumor and robotic enucleation of a local recurrence.

Case report

In February 2020 a 58-year-old patient with a history of RCC was admitted to the Section of Interventional Ultrasound of our hospital to evaluate a 27-mm enhancing nodule detected by contrast-enhanced computed tomography (CECT) within the adipose tissue of the left ischio-rectal fossa (Fig. 1). In 2016 he had undergone laparotomic partial nephrectomy for a 4cm pT1a RCC of the left kidney, and in 2019 robotic enucleation of a recurrence close to the prior surgical margin. Besides the nodule in the ischio-rectal fossa, CECT did not document any renal recurrence, lymph node or vascular involvement, or distant metastases. The nodule was preliminarily examined with contrast-enhanced ultrasound (CEUS) that confirmed intense enhancement in the arterial phase with no wash-out in the late phase (Fig. 2). CEUS was performed by using a 2.4 mL intravenous (i.v.) bolus of an 8 microliters/mL solution of sulfur hexafluoride microbubbles stabilized by a phospholipid shell as US contrast agent (SonoVue®, Bracco, Milan, Italy), and a low mechanical index contrast-specific nonlinear technique (CnTI, Esaote, Genova, Italy). CECT and CEUS findings were

suggestive but not conclusive of malignancy, and the patient underwent US-guided biopsy of the nodule. Histological examination showed aggregates of atypical clear cells with immunophenotype CD10 + /Vimentine + /PAX8 +, consistent with metastasis from RCC. ¹⁸F-FDG Positron Emission Tomography (PET) showed a focal uptake in the left ischio-rectal fossa (Fig. 3) and did not document any other uptake throughout the body. The patient was admitted to our Department of Surgery to undergo exeresis of the metastasis after US-guided positioning of a metal landmark into the nodule to make its retrieval easier. Surgical exploration identified a 3-cm nodule in the left ischio-rectal fossa, adjacent to the left ischial tuberosity and partially incorporated into the ipsilateral elevator muscle of the anus (Fig 4 and 5). After prolonged and difficult isolation, the lesion was removed (Fig. 6 and 7), and final histological examination confirmed the diagnosis of metastasis from clear cell RCC.

DISCUSSION

Metastases from clear cell RCC can often be present at initial diagnosis, or can occur in the course of the disease, in about one third of patients even after radical nephrectomy of an apparently localized tumor [6]. Lung, bones and liver are most frequently involved, but also brain and skin metastases can be documented [3,5]. Moreover, the spread of RCC to unusual sites such as pancreas, thyroid gland, or colon is also well known [7,8], but to our knowledge metastases in the ipsilateral ischio-rectal fossa, with partial involvement of the elevator muscle, have never been reported. The pathway for such a spread is far from clear. Metastases from RCC usually occur for tumor-induced local neoangiogenesis, or systemic spread via the blood stream or the lymphatic vessels after involvement of loco-regional lymph nodes^[7]. Moreover, a quite unusual ureteral dissemination has been reported in

literature [5]. However, in our patient both CT and PET-CT did not document any lymph node or ureteral involvement, making lymphogenous and ureteral spread very unlikely. The hematogenous pathway would seem the only possible explanation for the metastasis in the ischio-rectal fossa, even though a retrograde spread in such an unusual site appears rather hard, especially considering that no neoplastic involvement of renal vein or inferior vena cava, nor distant metastases in other more common sites were detected by imaging techniques.

CONCLUSION

In conclusion, to the best of our knowledge a solitary metastasis from clear cell RCC in the omolateral ischio-rectal fossa has never been described in literature, and its pathway remains hard to understand. The spread of neoplastic cells via the blood stream appears to have been the less improbable mechanism, but a sure and clear explanation can not be provided and the discussion remains open.



Fig. 1: Abdomen CECT showing a 27-mm enhancing nodule within the adipose tissue of the left ischio-rectal fossa.

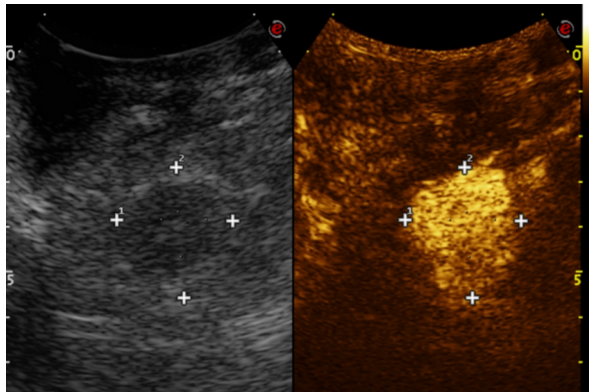


Fig. 2: CEUS scan of the ischio-rectal fossa showing a 27 x 24 mm nodule (left side of the split screen) with intense enhancement in the arterial phase (right side of the split screen).

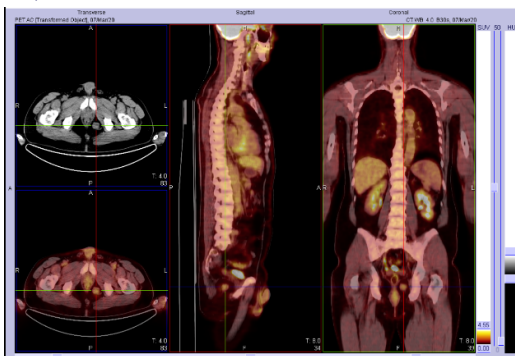


Fig. 3 Total Body PET showing a focal uptake in the left ischio-rectal fossa without any other uptake throughout the body

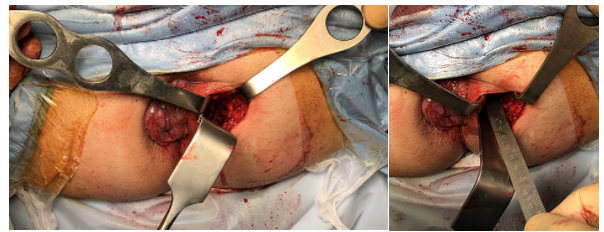


Fig 4 and 5: Surgical exploration and identification of the nodule in the left ischio-rectal fossa.

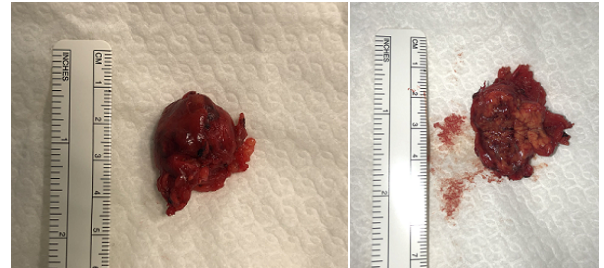


Fig. 6 and 7: Removal of the 3-cm lesion localized in the left ischio-rectal fossa, adjacent to the left ischial tuberosity and partially incorporated into the ipsilateral levator muscle of the anus.

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