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An unusual metastatic site of renal cell carcinoma: A case report

Fatima Zohra Benbrahim *, Majda Ankri, Hajar Zebbakh, Hatim Essaber, Asaad EL Bakkari, Soukaina Allioui, Hounayda Jerguigue, Youssef Omor, Rachida Latib

Department of Radiology, National Institute of Oncology, UHC Ibn Sina, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat, Morocco

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ABSTRACT

The main metastatic sites of renal cancer are the lungs, bone, liver, and brain. Dissemination of clear cell renal carcinoma to the rectum is very rare, with only a few sporadic cases published in the literature. The clinical presentation is usually dominated by lower gastrointestinal haemorrhage. We report the 5th case in the literature of a rectal metastasis of clear cell renal carcinoma, revealed by a lower gastrointestinal haemorrhage occurring 8 years after the initial nephrectomy.

1. Introduction

The metastatic dissemination of a tumor to the rectum is very rare and is most commonly described with breast, gastric, prostate, and melanoma cancers.[1] Thus, the rectum is an unusual site for renal cancer, which most often metastasizes to the lungs, lymph nodes, bones, liver, adrenal glands, and brain 2. We report a case of rectal localization of renal cell carcinoma occurring 8 years after nephrectomy.

2. Case stady

A 74-year-old man who underwent right nephrectomy 8 years ago for initially non-metastatic clear cell renal carcinoma and was subsequently lost to follow-up. Currently, the patient presents to the emergency department for management of rectal bleeding (6–8 episodes per day). Clinical examination revealed a hemodynamically stable patient, with a heart rate of 80 beats per minute and a blood pressure of 110/60 mm Hg. The abdomen was soft, and rectal examination revealed a blood-stained finger pad. Blood tests showed normocytic normochromic anemia (Hb = 9g/dl).

A abdomino-pelvic CT scan and a pelvic MRI (Fig. 1) were performed, revealing a budding and non-stenotic tumor in the upper rectum, with iso-T1 signal, intermediate T2 signal, restricted in diffusion, with intense and homogeneous enhancement after injection of Gado, measuring 24 mm and extending over 2 cm. Colonoscopy confirmed the process in the upper rectum, extending over 23mm, and multiple biopsies were taken.

The histological examination (Fig. 2) revealed clusters and trabeculae of cells with irregular, hyperchromatic nuclei, prominent nucleoli, and abundant clear or micro-vacuolar cytoplasm. Immunohistochemistry of the tumor revealed a positive marker for cytokeratins AE3/AE1 and CD10. Histological and immunohistochemical studies concluded that the tumor was a clear cell renal carcinoma located in the rectum. The patient received chemotherapy treatment.

3. Discussion

Renal cell carcinoma (RCC) accounts for approximately 3 % of adult cancers,[3] with clear cell carcinoma being the most common histological type (80 %).[4] It occurs in patients between the sixth and seventh decades and is twice as common in men as in women. About 30 % of patients with RCC are initially metastatic, and 20–40 % of those with localized RCC will develop local or distant recurrence after total nephrectomy.[2]

The four most common metastasis sites for renal cancer are the lungs, liver, bones, and brain 5. Distant metastases may result from lymphatic, haematogenous, *trans*-coelomic, or direct dissemination.[6]

Digestive tumors are rarely metastatic in origin, with colorectal localization implicated in only 1 % of cases.[7] It is often a metastasis of melanoma, ovarian, or bladder cancer.[8] The rectum is a very unusual site for clear cell renal carcinoma, with only 5 cases reported in the

Abbreviations: **RCC**, Renal Cell Carcinoma; **CT**, Computer Tomography; **MRI**, Magnetic resonance imaging.

* Corresponding author.
E-mail addresses: fzohrabenbrahim93@gmail.com (F.Z. Benbrahim), docmajdaar@gmail.com (M. Ankri), drzebbakh93@gmail.com (H. Zebbakh), essaber.hatim@gmail.com (H. Essaber), elbakkari.asaad@gmail.com (A. EL Bakkari), Allioui.sou@gmail.com (S. Allioui), Jerguiguehounayda@gmail.com (H. Jerguigue), omor.youssef3@gmail.com (Y. Omor), rachidalatib@gmail.com (R. Latib).

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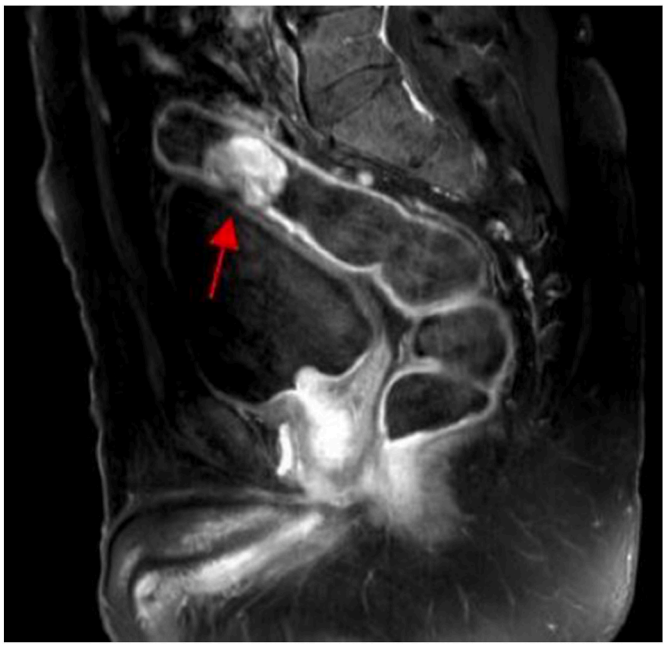

Fig. 1. T1-weighted MRI sequence with gadolinium injection in sagittal view showing a tumour process (red arrow) in the upper rectum strongly enhanced. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

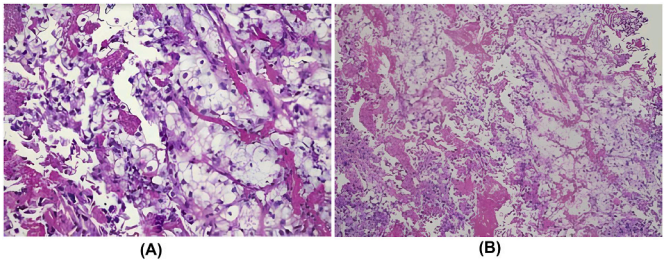

Fig. 2. Histological study demonstrating a tumor contingent of clear renal cell carcinoma (cells with large hyperchromatic nuclei and abundant clear nucleus and abundant clear cytoplasm, nuclear atypia with prominent nucleoli) within a rectal glandular architecture.

literature.[9–12] The usual mode of presentation is lower gastrointestinal haemorrhage, given the hypervascular nature of the tumor.[9]

A literature review by Olivier et al. among 166 cases of rectal metastases reported only 4 cases of renal cell carcinoma, representing a percentage of 2.4 % (Table 1).[1] Our case is the 5th in the literature.

The presentation of atypical metastases, including rectal metastases, from renal cancer is more often metachronous than synchronous, and the majority are detected sporadically several years after nephrectomy.[5] In most reported cases, the diagnosis was confirmed by endoscopy with biopsy.

In our case, the metastasis was detected 8 years after nephrectomy. The diagnosis of rectal metastasis was confirmed by an anatomopathological study. The prognosis of rectal metastases from clear cell renal carcinoma is unpredictable, given the small number of cases reported in the literature. The average survival of patients with metastatic renal carcinoma ranges from 12 to 24 months and depends on several factors.

Patients with synchronous metastases initially to renal cell carcinoma (RCC) have a shorter survival than those who progress to subsequent metastases.[13–15]

Surgical resection is indicated for certain patients with metastatic renal cell carcinoma (RCC).[15] Some authors suggest that patients with a single metastasis may benefit from a nephrectomy with metastasectomy, and that the prognosis is the same as for patients without metastases. Chemotherapy or combination chemotherapy with immunotherapy can improve survival in patients with advanced RCC.

Table 1
Clinical characteristics of cases reported in the literature of rectal metastasis of RCC.

Authors	Age (years)/ Sex	Clinical presentation of the rectal lesion	Treatment of the primary tumour	Time after initial nephrectomy
The current case	74/Man	Hematochezia	Total nephrectomy	8 years
Ouellet[9]	78/ Woman	Hematochezia	Total nephrectomy	Synchronous
Rosito[11]	55/Man	Anal bleedding	Total nephrectomy	9 months
Dellon[10]	70/Man	Hematochezia	Total nephrectomy	26 years
Zheng[12]	65/ Woman	During follow-up for a benign rectal polyp	Total nephrectomy, neoadjuvant CMT	8years

4. Conclusion

In conclusion, we report the 5th case in the literature of a metachronous rectal metastasis of clear cell renal carcinoma occurring 8 years after nephrectomy, detected following lower gastrointestinal bleeding. This case illustrates the variability of RCC presentation and contributes to our understanding of rectal metastases.

CRediT authorship contribution statement

Fatima Zohra Benbrahim: Writing – original draft. **Majda Ankri:** Visualization. **Hajar Zebbakh:** Visualization. **Hatim Essaber:** Supervision. **Asaad EL Bakkari:** Supervision. **Soukaina Allioui:** Supervision. **Hounayda Jerguigue:** Supervision. **Youssef Omor:** Validation, Supervision. **Rachida Latib:** Validation, Supervision.

Declaration of competing interest

The authors declare that they have no conflicts of interest in relation to this article.

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