



Bladder Metastasis of Type 2 Papillary Renal Cell Carcinoma: A Case Report

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Abstract

Rare cases of renal cell carcinoma bladder metastases have been reported, with clear-cell renal cell carcinoma subtype accounting for the majority of them. Bladder metastases of papillary renal cell carcinoma are limited to only a few case reports. We present the case of an 81-year-old woman who came to the emergency department complaining of hematuria and ultrasound evidence of a bladder mass. Two years earlier, she underwent a right nephrectomy due to papillary renal cell carcinoma. Histopathology revealed a metastatic bladder tumor of papillary renal cell carcinoma. Bladder metastases of papillary renal cell carcinoma are very rare. Metastasectomy can provide palliation of symptoms and improve survival in selected patients. Although there is scant information regarding systemic therapy in non-clear renal cell carcinoma, pazopanib may have a role.

Keywords: Carcinoma, Renal Cell/surgery; Metastasectomy; Neoplasm Metastasis; Urinary Bladder Neoplasms/secondary

Introduction

With 431 288 new cases and 179 368 reported fatalities each year, kidney cancer is the 14th most common cancer in the world.¹ Renal cell carcinoma (RCC) is the most frequent solid lesion, and its usual metastatic sites include the lung, lymph nodes, bone, and liver. Bladder metastases from RCC are rare, with only around 70 cases described, and clear-cell RCC is the most documented subtype.² Bladder metastases from papillary RCC are even rarer, and to our knowledge, only three cases have been described.^{2,3} Hereby, we present the case of a patient with bladder metastasis of type 2 papillary RCC.

Case Report

An 81-year-old, non-smoker, obese and hypertensive woman presented to the emergency department (ED) with macroscopic hematuria and right flank pain. She denied having any more urological symptoms, and the laboratory workup was only relevant

for anemia, with normal kidney function. Contrast-enhanced computed tomography (CT) showed a 62 mm mass in the right kidney. Cystoscopy did not show any lesions. She underwent an open right radical nephrectomy, and pathological analysis showed a type 2 papillary renal cell carcinoma (pRCC), Fuhrman grade 3 - stage pT3aN0M0R0. After the procedure, she kept skipping her appointments, losing follow-up. Two years later, she returned to the ED with a three-month history of macroscopic hematuria and ultrasonographic evidence of a bladder mass. She had no other complaints. CT scan showed two bladder lesions of 45 mm on the posterolateral right wall and a 31 mm lesion near the left meatus (Figs. A.1 and A.2). An apparently complete transurethral resection of the bladder (TURB) was performed, and histopathology revealed a muscle-invasive bladder metastasis of the pRCC. The case was discussed in a multidisciplinary tumor board, and the patient started systemic therapy with pazopanib, considering the patient's age, comorbidities and available evidence in non-clear cell RCC, which she discontinued on her own, several times, due to reported intolerance. After three months of follow-up, CT showed a new lesion of 27 mm on the posterolateral wall of the bladder. It was decided to perform an anterior pelvic exenteration with ureterostomies as urinary diversion. After that, she was kept under surveillance. Five months after cystectomy, thoracic CT revealed lung metastases and the patient was restarted on pazopanib. Over time, the lung metastases kept progressing, and, a few months later, the patient passed away.

Discussion

RCC comprises around 90% of all kidney malignancies and remains one of the most lethal urological cancers. Metastatic sites usually include the lung, lymph nodes, bone, and liver. Bladder metastases are rare, corresponding to only 2% of the cases.⁴ Clear-cell RCC subtype accounts for the majority of situations, with isolated reports of metastases of papillary, chromophobe, and collecting duct carcinoma. Tobacco exposure is the most accepted environmental risk factor for RCC, and although our patient was a non-smoker, she suffered from obesity and hypertension, which are other major risk factors for the disease.⁵ Around a quarter of the patients are metastasized at the time of diagnosis and nearly 20% will develop metastases during follow-up. 6 As described in the literature, our patient's complaint at the time of diagnosis was gross hematuria. This metachronous lesion

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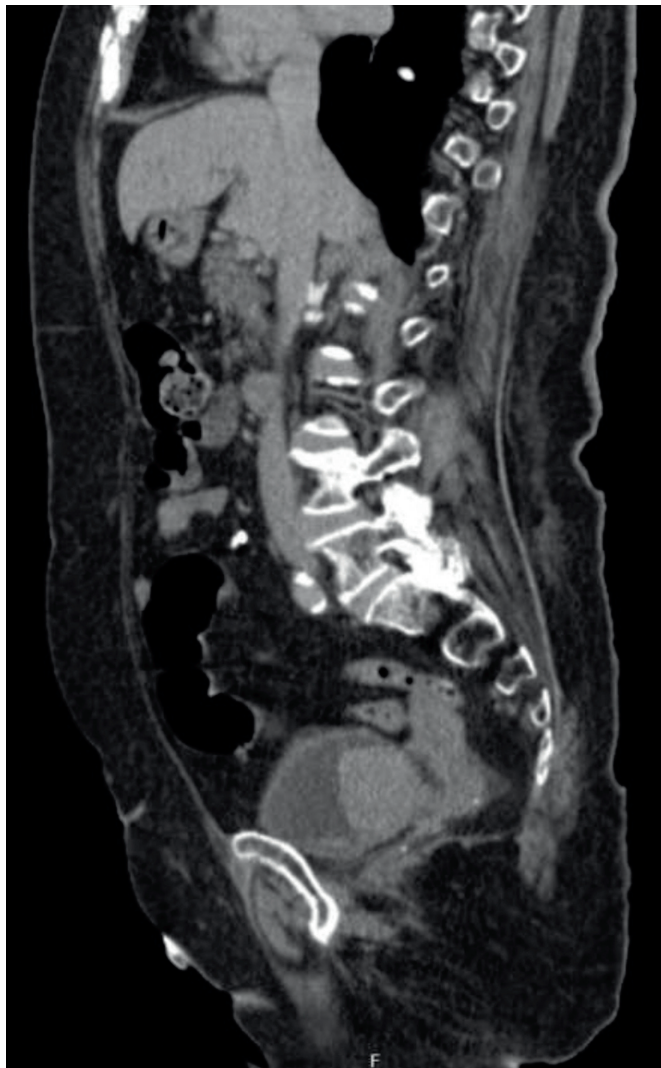


Figure A.1 – Sagittal view of CT scan showing the bladder metastasis

was found two years later after the diagnosis of RCC, which is in accordance with the reported median time of 33 months.² There is no consensus regarding the metastatic pathways in these patients, but four theories have been proposed: drop metastases, hematogenous spread, lymphatic and retrograde venous embolization. In this particular case, the presence of deep metastatic lesions located near the meatus could suggest lymphatic spread or retrograde venous embolization of the tumor.⁷ Metastatic RCC has a poor prognosis, with a ten-year survival of less than 5%. The disease-free interval following nephrectomy appears to be an important prognostic factor and synchronous metastases seem to correlate negatively with survival.⁸ Metastasectomy can provide palliation of symptoms and improve survival in selective patients, especially those with lung-only metastasis, clear-cell type RCC, asynchronous metastasis, fewer metastases sites and patients who had a nephrectomy.⁹ In our case and in contrast to the majority of reports,² the metastases were muscle-invasive and follow-

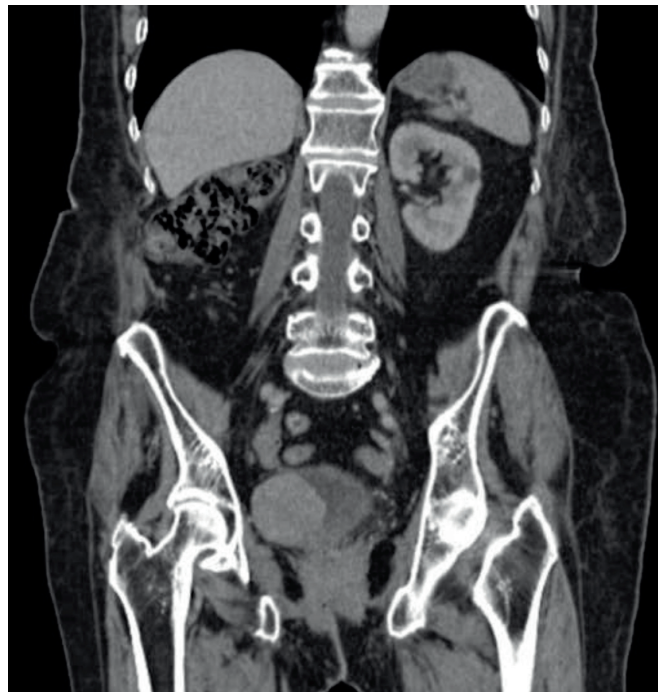


Figure A.2 – Coronal view of CT scan showing the bladder metastasis

-up CT showed a new lesion after TURB, so the patient ended up performing an anterior pelvic exenteration. Although target therapy is an option for advanced RCC, a recent meta-analysis found no benefit in overall survival and disease-free survival.¹⁰ There is still scant information regarding the use of target therapy in non-clear cell RCC, however, a recent systematic review suggests that pazopanib could be an option in this setting.¹¹

Conclusion

Bladder metastases of papillary renal cell carcinoma are very rare and prognosis is poor. Metastasectomy can provide palliation of symptoms and improve survival in selected patients. Although there is scant information regarding systemic therapy in non-clear RCC, pazopanib may have a role.

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MH: Was responsible for patient management and clinical data collection, conducted the literature review and drafted the initial manuscript.

MM and JS: Contributed to the interpretation of clinical findings and critically revised the manuscript.

All authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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