

Oncology

Synchronous ipsilateral renal cell carcinoma and transitional cell carcinoma of the renal pelvis with complete remission of TCC after neoadjuvant chemotherapy

Ali Safadi^{a,*}, Ibrahim Elias^a, Alexander Visoki^a, Anat Zick^b, Sergio Schwalb^c, Ran Katz^a

^a Department of Urology, Ziv Medical Center, Zefat, Israel

^b Department of Diagnostic Radiology, Ziv Medical Center, Zefat, Israel

^c Department of Pathology, Ziv Medical Center, Zefat, Israel

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Introduction

Synchronous occurrence of RCC and TCC of the renal pelvis in the same kidney is a very rare condition with only about 50 cases that have been reported in the literature.^{1,2} Furthermore, no definitive recommendation exists about the neoadjuvant chemotherapy for upper tract TCC and the efficiency of this treatment option is still controversial.⁴

Case report

In June 2016, a healthy non-smoker 48-year-old woman presented to our hospital with left flank pain and gross hematuria. Vital signs were normal. Physical examination revealed tenderness over the left costovertebral angle and in the left upper abdomen. Laboratory tests were unremarkable except of RBC's in urinalysis. Ultrasonography suggested the presence of a left renal mass. A CT urography was performed demonstrating a 5 cm, contrast enhancing, exophytic mass in the middle-lower part of the left kidney that seemed to involve the collecting system (Fig. 1a). Chest CT scan was normal. A urine cytology was negative. Ureteroscopy showed an intraluminal mass in the renal pelvis and lower pole calices of the left kidney. A biopsy was performed revealing a low-grade TCC (Fig. 1b). The patient was referred to the oncology department and underwent 3 cycles of neoadjuvant chemotherapy with cisplatin and gemcitabine. Subsequent CT scan demonstrated a partial regression of the tumor (Fig. 1c). In November

2016, a left laparoscopic nephroureterectomy with bladder cuff was performed. Histopathological analysis of the surgical product revealed chromophobe RCC with no capsular penetration (Fig. 1d). There was no evidence of the presence of TCC in the whole product, consisting with complete remission of the TCC under neoadjuvant chemotherapy and the synchronous presence of RCC and TCC in the same kidney.

During the follow up period, a growing paraaortic lymph node was demonstrated on sequent CT scans (Fig. 2a). Accordingly, a formal open RPLND was performed with dissection of all lymph nodes from the adrenal gland superiorly to the aortic bifurcation inferiorly. Histological examination of the product identified a chromophobe RCC metastasis in numerous lymph nodes with no evidence of the presence of TCC (Fig. 2b).

Discussion

RCC accounts approximately 90% of all kidney malignancies.^{1,2} The main histologic types of RCC are: clear cell (70%), papillary (10–15%), chromophobe (5%) and collecting duct tumors.¹ Upper tract TCC is relatively a rare disease, accounting only 5–7% of urinary tract tumors.^{1–3} However, the combination of RCC and TCC of the renal pelvis has been rarely reported.² According to Magno C et al., only about 50 cases have been reported in the literature.¹ Von Eschenbach DE et al., in 1977 reported that out of a total of 700 nephrectomies for RCC has encountered a single case of synchronous RCC and TCC, showing up at that time a proportion of 0.14% of the total.¹ The mean age of the

Abbreviations: RCC, renal cell carcinoma; TCC, transitional cell carcinoma; CT, computed tomography; RPLND, retroperitoneal lymph node dissection

* Corresponding author. Department of Urology, Ziv Medical Center, Zefat, 13100, Israel.

E-mail address: ali.s@ziv.health.gov.il (A. Safadi).

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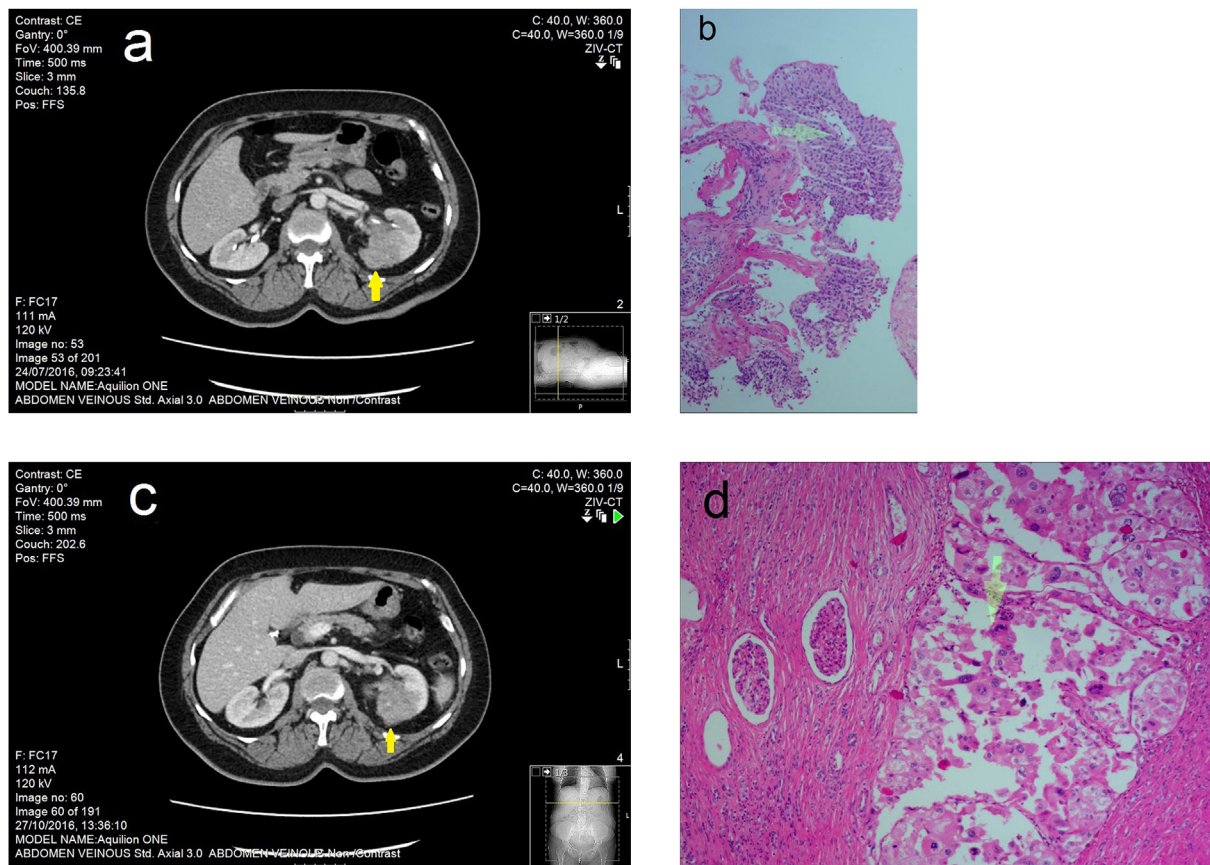


Fig. 1. a: axial CT image demonstrating a solid renal mass in the left kidney which involving the renal pelvis. b: ureterscopic biopsy from the intrapelvic mass showing low grade TCC. c: axial CT image showing partial regression of the tumor after neoadjuvant chemotherapy. d: histopathological examination of the surgical product after nephroureterectomy revealing chromophobe RCC.

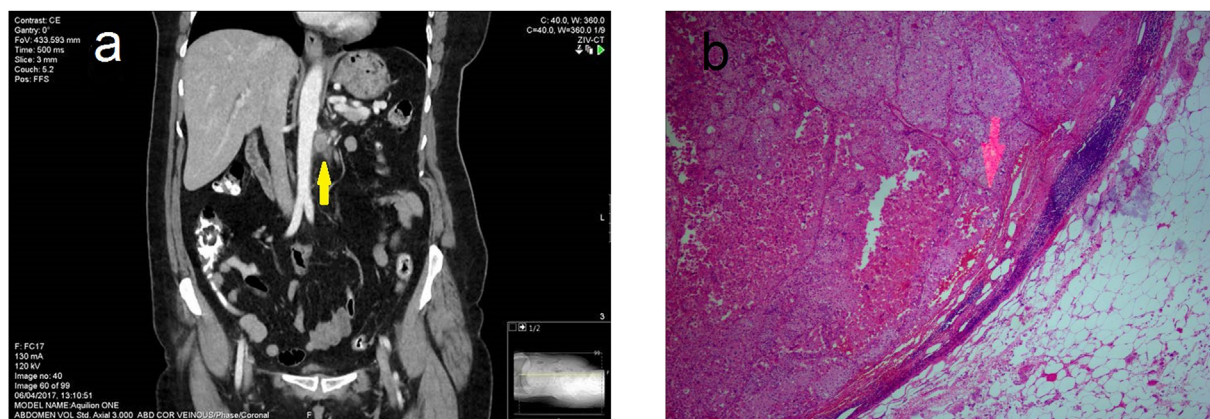


Fig. 2. a: coronal CT image showing left paraaortic enlarged lymph node. b: histopathological examination of the lymph node showing chromophobe RCC.

patients at presentation was 65 years old.^{2,3} Preponderance 2:1 in favor of men² and the tumors were commonly located in the left kidney.^{2,3} The presenting symptoms were hematuria in 90% of the cases,^{1,2} flank pain (19%) and a palpable flank mass (14%).¹ The etiology of coexistence of different type renal neoplasms is still unclear.²

Accurate preoperative diagnosis of RCC with synchronous ipsilateral upper tract TCC is important to guide the selection of the surgical operation method.³ The standard surgical procedure of RCC is radical or partial nephrectomy, according to the characteristics of the tumor.³ For upper tract TCC, nephroureterectomy represents the main line of treatment.³ As in our case, preoperative ureterscopic biopsy should be performed for tumors that involve the renal pelvis, and

intraoperative frozen section of the suspicious mass may confirm the diagnosis during operation, so that ureterectomy can be performed.³

The prognosis of synchronous presence of renal tumors is a matter of debate. Arjona et al. published in 2005 in Spanish language a review of 47 cases of synchronous renal tumors reporting that the simultaneous occurrence does not worsen the overall prognosis.¹ Guo et al., in 2017 reported that 24% of such cases had metastasis at initial examination, and 34% had bladder neoplasms, therefore, it tends to exhibit poor prognosis.³ However, according to Dutta G et al., the prognosis is likely most influenced by the more aggressive of the two tumors.¹

Unlike TCC of the bladder, the efficacy of neoadjuvant chemotherapy for upper tract TCC is still controversial and no definitive

recommendation exists because of insufficient evidence.⁵ Most studies addressed the benefit of neoadjuvant chemotherapy for upper tract TCC have been small retrospective studies. Attempted prospective trials have been limited by the rareness of the disease.⁴ Many urologists and medical oncologist have extrapolated data from the bladder literature as evidence for this treatment option.⁴ According to G.E. Gin et al., there has been an increase in the use of neoadjuvant chemotherapy for upper tract TCC from 0.7% in 2006 to 2.1% in 2013.⁴ However, definitive recommendation based on prospective studies is essential.^{4,5}

Conclusion

We reported a unique and a rare case of synchronous ipsilateral chromophobe RCC and low-grade TCC of the renal pelvis. Although neoadjuvant chemotherapy achieved complete remission of TCC in our case, prospective randomized trials are essential to clarify the benefit of this treatment.

Conflicts of interest

None.

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