

CASE REPORT

Renal Cell Carcinoma with Renal Oncocytoma in the Same Kidney: A Rare Coexistence

Çağlar Yıldırım^{1,*}, Özgür Haki Yüksel¹, Aytaç Şahin¹, Ahmet Ürkmez²

¹Department of Urology, Health Science University Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey

²Department of Urology, Health Science University Haydarpasa Numune Training and Research Hospital, Istanbul, Turkey

*Current affiliation: Department of Urology, Mardin State Hospital, Mardin, Turkey

Abstract

Renal oncocytomas (ROs) are benign lesions and account for 3%–7% of all primary renal tumors. The coexistence of renal cell carcinoma (RCC) with RO in the same kidney is a rare situation. Here, we report the case of a 74-year-old man with RCC and RO (two different lesions) in the same kidney, which were managed with left radical nephrectomy.

Keywords: Nephrectomy; renal cell carcinoma; renal oncocytoma.

Renal oncocytomas (ROs) are benign lesions and account for 3%–7% of all primary renal tumors. Most of them are asymptomatic and discovered incidentally. ROs are usually unifocal, and concomitant renal cell carcinoma (RCC) has been rarely reported in the literature [1]. Here, we report the case of man with two different histopathological tumor types in the same kidney: upper pole RO and lower pole papillary-type RCC.

Case Report

A 74 year-old man with no medical history presented to our hospital with nonspecific left flank pain. He had a smoking history of 60 packets/year. His physical examination was unremarkable. His laboratory findings were within normal values: hemoglobin, 12.4 g/dl and serum creatinine, 0.98 mg/dl. Ultrasonography revealed two different mass lesions in the left kidney: one lesion on the upper pole and

the other on the lower pole. MRI revealed a 43×38-mm exophytic upper pole tumor and 56×51-mm exophytic lower pole tumor in the left kidney (Fig. 1). The radiological comment was both of these lesions were firstly RCC.

He underwent a left laparoscopic radical nephrectomy without perioperative complications. The patient was stable postoperatively and was discharged on postoperative day 4. The specimen examination revealed a 5×4-cm solid, hemorrhagic, brown and yellow mass on the upper pole and a 6×5-cm hemorrhagic, necrotic, yellow mass on the lower pole of the left kidney. The upper pole tumoral lesion showed tuberos fibromyxoid stroma, epithelial islets observed as small cysts, forming solid and asinae structures. These structures were epithelial cells with large eosinophilic cytoplasm, a small round central nucleus, and some polygonal appearance. In immunohistochemical staining, tumor cells were positively stained with pancreatin and EMA. Poor

Correspondence (İletişim): Ahmet Ürkmez, M.D. Department of Urology, Health Science University Haydarpasa Numune Training and Research Hospital, Istanbul, Turkey

Phone (Telefon): +90 507 766 83 00 **E-mail (E-posta):** ahmeturkmez@hotmail.com

Submitted Date (Başvuru Tarihi): 21.02.2018 **Accepted Date (Kabul Tarihi):** 27.02.2018

Copyright 2018 Haydarpasa Numune Medical Journal

This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).





Figure 1. FMRI revealing a 43×38-mm exophytic, upper pole tumor and a 56×51-mm exophytic, lower pole tumor in the left kidney.

positivity with RCC marker and CD117; Vimentin and CD10 were negative and evaluated as a RO (Fig. 2). The lower pole mass lesion showed growth pattern in the form of papillary structures partially supported by thin fibrovascular stroma into the cystic spaces. In immunohistochemical staining, tumoral cells were positively stained with pankeratin, cyto-keratin 7, and RCC marker. In addition to poor staining

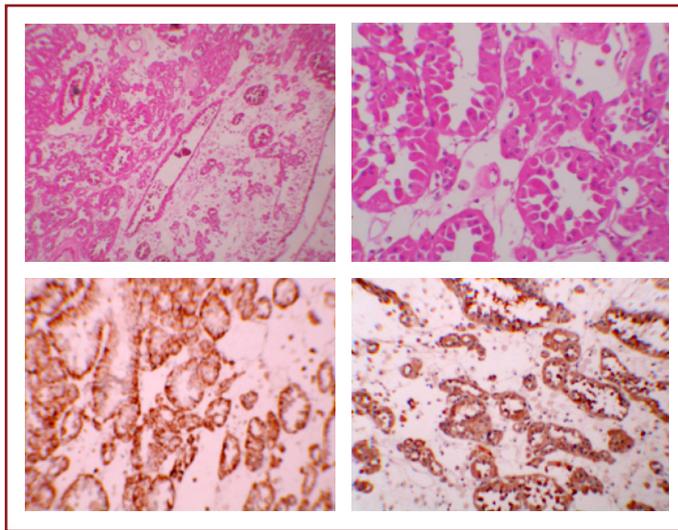


Figure 2. The microscopic image of RO. Lesion showed tuberous fibromyxoid stroma, epithelial islets observed as small cysts, forming solid and asinae structures. These structures were epithelial cells with large eosinophilic cytoplasm, a small round central nucleus, and some polygonal appearance. In immunohistochemical staining, tumor cells were positively stained with pancreatin and EMA. Poor positivity with RCC marker and CD117; Vimentin and CD10 were negative.

with CD10, Vimentin was negative and evaluated as papillary-type RCC (Fig. 3).

The tumor stage, the malignant one, was assessed as T1N0MX according to the American Joint Committee on Cancer classification. The patient did not receive an adjuvant therapy. No recurrence or metastasis was seen at the 9-month follow-up.

Discussion

ROs are benign tumoral lesions of the kidney originating from the intercalating cells of the cortical collecting ducts. Clinically, they are found incidentally, but sometimes can present with significant hematuria [2]. With the increasing use of imaging systems, urologists have started to see more cases in recent years. Computed tomography and magnetic resonance imaging are commonly used methods for diagnosis, but unfortunately the RO lesions cannot be differentiated clearly from malign RCC lesions. Biopsies from the lesion, contains the risk of tumor seeding and hemorrhage and cannot establish a safe distinction as well [3]. Hence, the literature suggests that lesions such as malignant RCC should be managed with radical nephrectomy, nephron-sparing surgery, or minimally invasive methods such as radiofrequency ablation [4]. In our case, the patient had two different lesions in the left kidney: one on the upper pole and the other on the lower pole. The radiological diagnosis was papillary-type RCC for both lesions in the preoperative period. We initially planned on performing a nephron-spar-

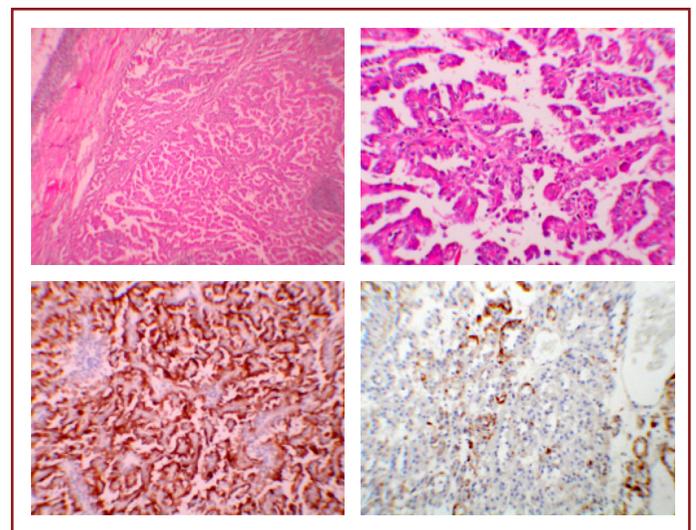


Figure 3. The microscopic image of RCC. The lesion showed growth pattern in the form of papillary structures partially supported by thin fibrovascular stroma in the cystic spaces. In immunohistochemical staining, tumoral cells were positively stained with pankeratin, cyto-keratin 7, and RCC marker. In addition to poor staining with CD10, Vimentin was negative.

ing surgery for the lesions; however, as per the patient's request, we performed laparoscopic radical nephrectomy.

RCCs are malignant epithelial tumors of the kidney. Papillary-type RCC comprises around 10% of RCCs and has a better prognosis than other RCC subtypes. The histogenesis of papillary-type RCC is unclear, with evidence suggesting that the cell of origin resides in the proximal or distal tubule [5]. Chromophobe RCC and RO are suspected to be closely related and are thought to show a similar distal tubular phenotype. Sometimes, RO and RCC can coexist in the contralateral kidney [6]. However, RO and papillary-type RCCs arise from different cells and their coexistence in the same kidney is a rare situation. We were able to identify only three cases with this coexistence [7-9]. All tumors were found incidentally with no symptoms, and none of them were >4 cm. Two of them were treated with partial nephrectomy and one with radical nephrectomy. With this strong clinical suspicion, we consulted two different pathologists for the diagnosis of the specimens, but both of them reported the same pathological diagnosis.

In the current urology practice, there are no clinical guidelines for the postoperative surveillance of patients with oncocytoma. Childs et al.^[10] suggested that frequent and routine cross-sectional imaging may not be warranted in most pure patients with RO because metachronous tumors are rare. However, our patient had two different tumors, and one of them was papillary-type RCC. Therefore, we made the follow-up plan as a routine RCC patient.

Conclusion

The coexistence of RCC and oncocytoma in the same kidney is rare because these tumors develop from different origins. Although this coexistence is rare, RO may co-occur with malignant tumors such as RCC. Therefore, in clinical practice, although the radiological evaluation strongly suggests that the tumor is RCC, this rare entity should be kept in mind.

Informed Consent: Approval was obtained from the patients.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Concept: C.Y., A.U.; Design: C.Y., O.H.Y.; Data Collection or Processing: A.S.; Analysis or Interpretation: C.Y.; Writing: C.Y., A.U., A.S.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Burger M, Denzinger S, Filbeck T, Hartmann A, Rössler W, Hammerschmied C. A metachronous, atypical, multifocal renal oncocytoma with a concomitant renal cell carcinoma of the contralateral side and bilateral multifocal oncocytomas: two case reports and review of literature. *ScientificWorldJournal* 2005;5:545-9. [\[CrossRef\]](#)
2. Ahmad S, Manecksha R, Hayes BD, Grainger R. Case report of a symptomatic giant renal oncocytoma. *Int J Surg Case Rep* 2011;2:83-5. [\[CrossRef\]](#)
3. Zincke, H, Dechet, CB, Blute ML, Engen DE, Sebo T. Needle biopsy of solid renal masses. *J Urol* 1998;159:169.
4. Anastasiadis A, Dimitriadis G, Radopoulos D. Incidental giant renal oncocytoma: a case report. *J Med Case Rep* 2010;4:358.
5. Reuter VE, Tickoo SK. Adult renal tumors. In: Mills SE, editor. *Sternberg's diagnostic surgical pathology*. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2004. p. 1956.
6. Sejben I, Szabó Z, Lukács N, Loránd M, Sükösd F, Cserni G. Papillary renal cell carcinoma embedded in an oncocytoma: Case report of a rare combined tumour of the kidney. *Can Urol Assoc J* 2013;7:E513-6. [\[CrossRef\]](#)
7. Rowsell C, Fleshner N, Marrano P, Squire J, Evans A. Papillary renal cell carcinoma within a renal oncocytoma: case report of an incidental finding of a tumour within a tumour. *J Clin Pathol* 2007;60:426-8. [\[CrossRef\]](#)
8. Floyd MS Jr, Javed S, Pradeep KE, De Bolla AR. Composite oncocytoma and papillary renal cell carcinoma of the kidney treated by partial nephrectomy: a case report. *ScientificWorldJournal* 2011;11:1173-7. [\[CrossRef\]](#)
9. Sejben I, Szabó Z, Lukács N, Loránd M, Sükösd F, Cserni G. Papillary renal cell carcinoma embedded in an oncocytoma: Case report of a rare combined tumour of the kidney. *Can Urol Assoc J* 2013;7:E513-6. [\[CrossRef\]](#)
10. Childs MA, Breau RH, Umbreit EC, Lohse CM, Cheville JC, Thompson RH, et al. Metachronous renal tumours after surgical management of oncocytoma. *BJU Int* 2011;108:816-9.