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Pathologically diagnosed incidentaloma transition cell carcinoma (TCC) of renal pelvis in a laproscopic radical nephrectomy specimen done for a lower pole renal mass

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ABSTRACT

We are reporting a very rare case in the current era of modern diagnostics of an incidentally detected Transitional Cell Carcinoma(TCC) renal pelvis, detected pathologically when Right laparoscopic radical nephrectomy specimen of lower pole mass(RCC) was processed, with no prior suspicion of TCC clinically or pre-operative imaging. A 75-year-old female with 4 × 4cm strongly enhancing lower pole renal mass on CTscan underwent a Laparoscopic Radical Nephrectomy. Surprisingly histopathological examination revealed a focus of low-grade TCC, arising from renal pelvis, completely separate from lower pole mass which was a clear cell RCC.

Introduction

Two simultaneous existing pathologically different renal malignancies in the same kidney are extremely rare, more so when there is no suspicion clinically & radiologically on pre-operative workup for renal mass. This presents unique challenges regarding further additional treatment & follow-up. Here we are reporting a case of incidentally detected Transitional Cell Carcinoma of the renal pelvis(UTUC) which was detected pathologically when the specimen of a Right laparoscopic radical nephrectomy(RCC) for a lower pole mass was processed.

Case report

75-year-old female, non-smoker, presented with pain in the abdomen, intermittent hematuria for 1 month. She had cardiac comorbidities & was on long-term, intermittent NSAIDs & analgesics for polyarthritis. Ultrasound examination revealed a solitary 4 cm lower pole mass in the right kidney. Urine routine examination & cytology were inconclusive. (Fig. 1) CT Scan revealed a 4 × 4 cms, Right kidney lower pole strongly enhancing mass, highly suspicious for a Renal cell carcinoma. No other lesion was detectable in the entire genitourinary tract. The patient then underwent standard Laparoscopic Right Radical Nephrectomy. The postoperative course was uneventful. Histopathology reported a well-circumscribed nodular tumor 4x4x3.8 cms, yellowish, hemorrhagic focally infiltrating to the cortex of the right kidney, sparing the capsule and peri-nephric fat. On microscopy it was(Fig. 2) Renal Clear cell carcinoma, Fuhrman's grade I-II. Additionally, it also reported a 0.8x0.7 × 0.5 cms, papillomatous growth suggestive of Transitional cell carcinoma WHO grade I-II(Fig. 3), without any invasion, originating from the mucosa of the Right renal pelvis close to the pelvic-ureteric junction. The ureteric cut margin was at 8 cms away. Rest all the vascular margins were free & Lympho-vascular embolization (LVE) was not seen.

Considering the low-grade pathology of UTUC, the patient was given the option of active surveillance (annual CT scan, cytology) or definitive surgical treatment. The patient opted for definitive surgery, thus cystoscopy, bladder biopsy & distal ureteric stump with bladder cuff excision, which was performed after 2 weeks, to complete her treatment. Distal ureteric stump & cystoscopic bladder biopsies were all reported negative for malignancy.

Discussion

RCC is the major kidney malignancy accounting for 90% of all cases, Upper tract TCC affects only 5–7% of the urinary tract malignancies.[1] Multiple primary malignant neoplasms in the same kidney are extremely rare in clinical practice, although Theodore Billroth first described it in 1839, to date only about 50 patients with synchronous renal tumors have been reported in the literature.[1]

The etiology of the coexistence of different types of renal tumors is

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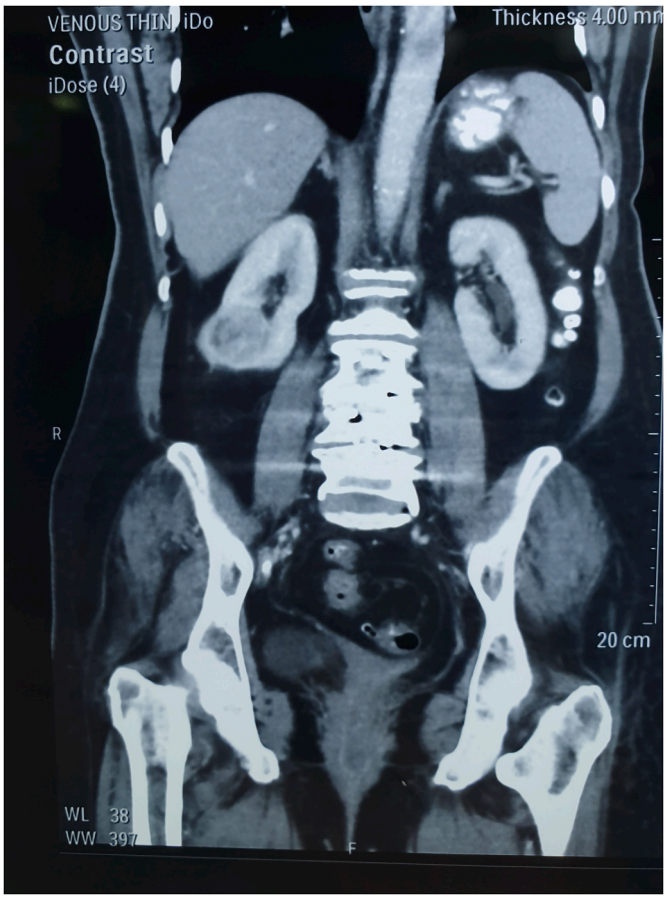

Fig. 1. CT Scan reveals a 4 × 4 cm Right lower pole enhancing mass. No suspicion of TCC in the renal pelvis.

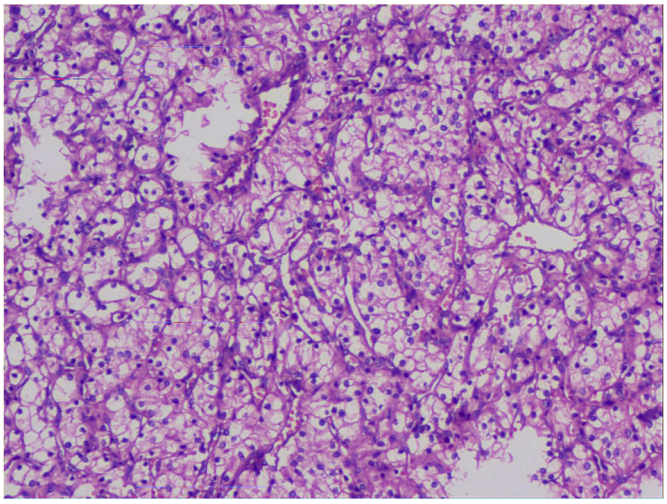

Fig. 2. Microscopy Renal clear cell carcinoma, Fuhrman's grade I-II

still unclear. In a large Spanish series of 47 cases in 2005, the authors associated smoking as a risk factor in 24% of patients with simultaneous tumors [2] The symptoms of the synchronous RCC and TCC were the same of the solitary neoplasia with hematuria in 90% of the cases, followed by flank pain (19%) a palpable flank mass (14%)[3]

Surgical management of the two pathologies RCC & TCC differs greatly with Radical or Partial nephrectomy being the treatment of choice for RCC(4), whereas Nephroureterectomy with a bladder cuff

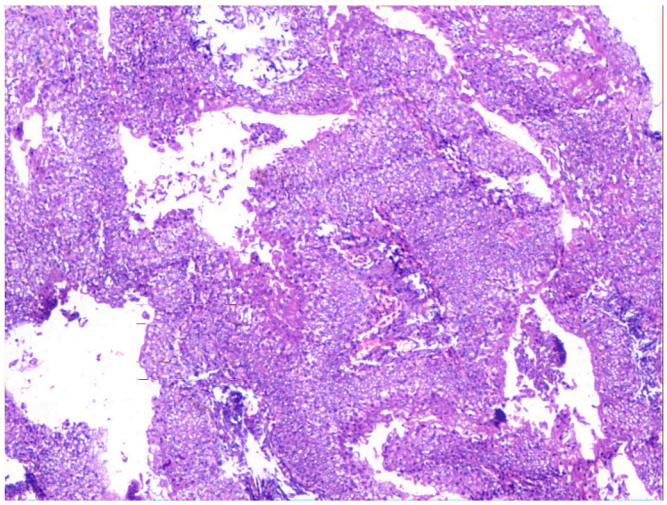

Fig. 3. Microscopy Transitional cell carcinoma, WHO grade I-II, originating from the mucosa of Right Renal Pelvis.

excision being the main line of treatment for Upper Tract TCC.[4] For UTUC grade of the tumor is very important as a recurrent tumor in the ipsilateral distal ureter is rare in patients with grade 1 lesions but it occurs frequently in patients with grade 2 lesions. In grade 2 lesions more radical operation provides better results, the recurrence rate in the ipsilateral ureteral stump is as high as 30% for TCC of the kidney, and high-grade recurrences in the ureteral stump are associated with poor prognosis. [5] Nephroureterectomy with bladder cuff excision may be the best treatment of choice for such rare synchronous double malignancies, however low grade of malignancy makes an equally strong case for active surveillance in such cases. The decision to undergo further radical treatment is based not only on the grade of a tumor but more importantly on age, patient's anxiety regarding future recurrence, comorbidities, and general medical status of the patient.

Our case is a rare case where primarily there was no suspicion of UTUC, and the diagnosis of the mucosal low-grade Renal Pelvis TCC was made by careful Histopathological assessment of an otherwise unsuspecting lower pole RCC specimen. This highlights the importance of a complete, comprehensive & non-biased examination of any radical nephrectomy specimen. Interestingly a partial nephrectomy, in this case, would have missed the pelvic UTUC, which potentially could have lead to future recurrence with different pathology.

Conclusion

We report a case of mucosal renal pelvic TCC found synchronously and detected incidentally on histopathological examination of the Radical Nephrectomy specimen, which was done for RCC. Such double primary renal malignancies though extremely rare must be kept in mind by the pathologist & if detected additional treatment must be done by the surgeon to complete the treatment. Low-grade tumors may not need any further radical treatment and can be managed by active surveillance. For high-grade tumors, Nephroureterectomy with bladder cuff excision must be the treatment of choice for these rare synchronous double malignancies.

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