

Simultaneous Development of Renal Cell Carcinoma and Multifocal Urothelial Carcinoma

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Simultaneous occurrence of multifocal urothelial carcinoma (UC) and ipsilateral renal cell carcinoma (RCC) is rare. We report a 67-year-old woman with multifocal, infiltrating urothelial carcinoma and unilateral renal cell carcinoma. She was referred to our department because of painless gross hematuria. Cystoscopy, computed tomography and retrograde pyelography studies revealed bladder, bilateral renal and ureter UC. She was treated with transurethral resection of the bladder tumor followed by bilateral nephroureterectomy. The pathological diagnosis was high-grade UC over the bladder and both renal pelves and ureters. A second tumor in the upper pole of the right kidney was reported as clear cell RCC. The patient was alive and still under careful surveillance at this writing. (*Chang Gung Med J* 2008;31:515-9)

Key words: urothelial carcinoma, renal cell carcinoma, simultaneous

Patients with chronic renal failure (CRF) have a higher incidence of malignant tumors.⁽¹⁻³⁾ The most common malignancy type is urologic malignancy, radical surgery is recommended in these patients.⁽⁴⁾ To our knowledge, we are reporting the first case of multifocal urothelial carcinomas (UC) and unilateral renal cell carcinoma (RCC) occurring simultaneously in a nondialysed uremic patient.

CASE REPORT

A 67-year-old woman with CRF who complained of intermittent painless gross hematuria of 2 months' duration was referred to our department. Her personal history revealed no factors associated with an increased risk of UC and RCC, such as cigarette smoking, exposure to industrial chemicals, excessive analgesic intake, or Chinese herb nephropathy. She had a 3-year history of chronic renal failure due to chronic glomerulonephritis which had been treated with conservative therapy

without hemodialysis. Laboratory studies, including renal function tests and a complete blood count, showed an elevated creatinine of 9.0 mg/dl (normal 0.6 to 1.2), low platelets of 81,000 / μ L (normal 150,000 to 400,000), and low hemoglobin of 9.0 g/dL (normal 12 to 16). Thrombocytopenia was due to chronic hepatitis with liver cirrhosis. Anemia was treated with recombinant human erythropoietin. Cytological examination of the urine revealed urothelial carcinoma. Cystoscopy showed multiple papillary tumors over the trigone area. Urine excreted from the bilateral ureter orifices was clear without reddish discoloration. Computed tomography (CT) revealed small tumors over the posterior wall of the urinary bladder, and abnormal soft tissue densities in the bilateral renal pelves and left ureter (Fig. 1). Metastatic surveys including chest x-ray and radionuclide bone scan were negative. Transurethral resection of the bladder tumor (TUR-BT) was performed. Histologic findings confirmed high-grade UC of the bladder without muscular propria inva-

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sion. Bilateral ureter catheters were inserted after resection of the bladder tumor. Retrograde pyelography (RP) (Fig. 2) revealed complete obstruction of the left middle ureter at the L5 level and suspicious irregular filling defects in the right upper infundibu-

lum and right lower ureter. For further confirmation of right-side upper urinary tract UC, the patient had a ureteroscopic examination two weeks later, and multiple papillary tumors were found in the right ureter. A bilateral nephroureterectomy was performed and histopathology showed bilateral renal pelvic and ureter pTa, high grade UC (Fig. 3). A 1.1 x 1.1 x 1.0 cm tumor was found at the upper pole of the right

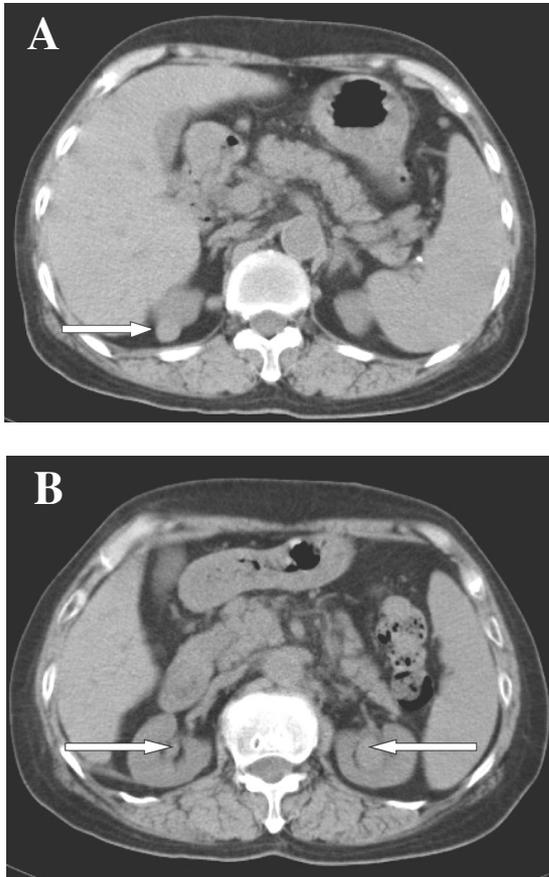


Fig. 1 Computed tomography (CT) scan demonstrates a right-side renal tumor (1 x 1 x 1 cm) (A) and bilateral atrophied kidneys with heterogeneity of the renal pelvic mass (B).

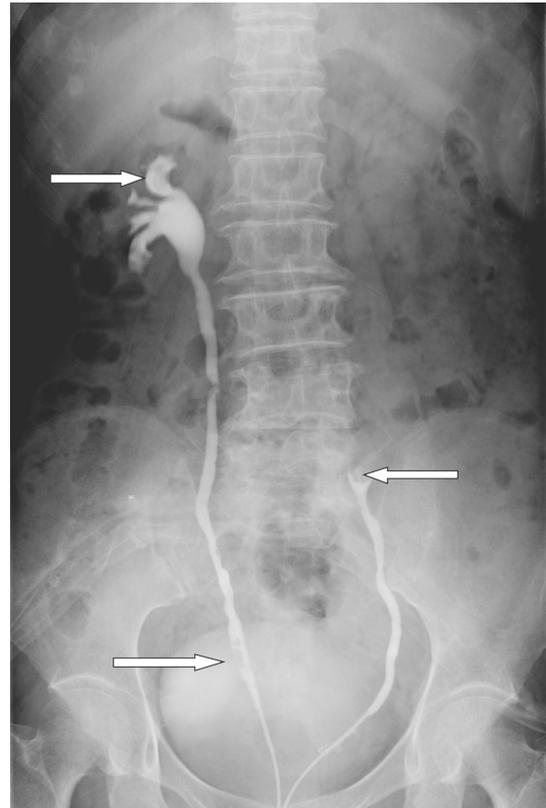


Fig. 2 Retrograde pyelography demonstrates multiple filling defects (arrow) in the ureters and right renal infundibulum.

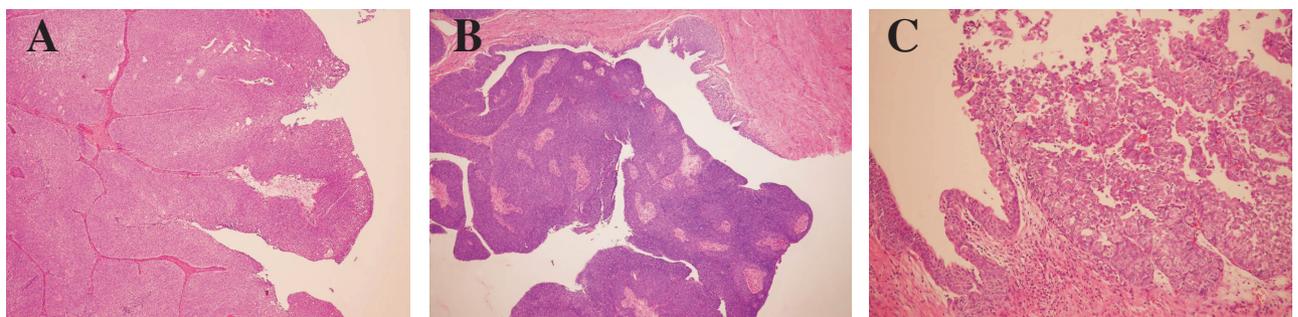


Fig. 3 Microscopic appearance: (A) urothelial carcinoma (UC), high grade in the bladder (H&E, reduced from x 40); (B) UC of the right ureter (H&E, reduced from x 40); (C) UC of the right renal pelvis (H&E, reduced from x 100).

kidney; microscopic examination revealed clear cell RCC (Fig. 4). The patient received regular hemodialysis and under careful surveillance at this writing.

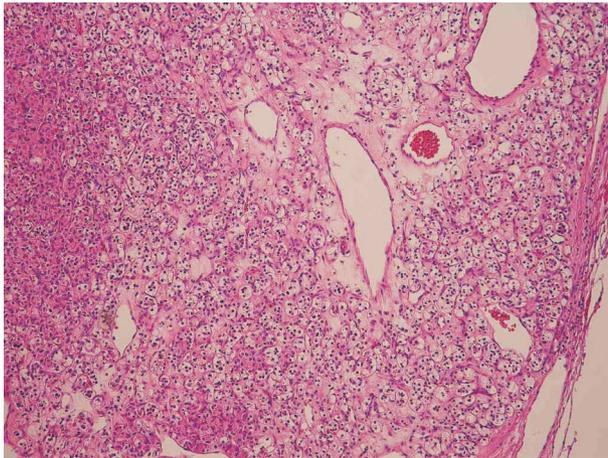


Fig. 4 Microscopic examination of the right kidney reveals renal cell carcinoma containing clear cells (H&E, reduced from x 100).

DISCUSSION

Simultaneous occurrence of RCC and UC in the same kidney is unusual. A recent retrospective study failed to demonstrate a higher histopathological grade of malignancy of these tumors when they occurred simultaneously or alone. The average age at diagnosis was 65 years, and hematuria was the most common presenting symptom (90%). This was more common in men than in women (2:1 ratio) and occurred more often on the left than on the right side (3:1 ratio).⁽⁵⁻⁷⁾ Patients with CRF have a high incidence of malignant tumors.⁽¹⁻³⁾ It has been reported that uremic patients are at greater risk of developing urologic cancer.⁽⁴⁾ Uremia induces a remarkable suppression of the immune status. In addition, the incidence of urologic cancer is likely to be higher in nondialysed uremic patients than in the general population.^(1-3,8) However, the simultaneous occurrence of multifocal UC and RCC is very rare, although this association has been reported previously in a uremic patient on chronic hemodialysis.⁽⁹⁾ To the best of our knowledge, this is the first reported case of simultaneous multifocal UC and ipsilateral RCC in a nondialysed uremic patient. Although the coexistence of

these tumors has been reported to be more than coincidental, there is no conclusive evidence that patients with renal cell carcinoma are at higher risk for developing another malignancy.⁽⁵⁾ Presentation of both tumors together does not worsen the prognosis.

Gross hematuria is the main sign of urothelial cancer; the physician should consider the possibility of urologic malignancy in patients presenting with gross hematuria and arrange appropriate studies. Early detection of urothelial cancer and appropriate treatment can prevent disease recurrence and progression, and thus prolong patient survival. In dialysis patients, evaluation of hematuria, consisting of ultrasonography, cystoscopy, retrograde pyelography and washing cytology, is recommended.⁽¹⁰⁾ In our patient, multifocal UC was found in preoperative studies. This case reminds us of the importance of a thorough urologic tract examination, including CT and ureterorenoscopy, in a nondialysed uremic patient presenting with gross hematuria. Ureteroscopy with tissue biopsy under direct visualization is the most accurate diagnostic modality and has been accepted as the standard of care for the evaluation of abnormal filling defects and obstruction.

Total urinary tract exenteration may be a useful treatment option when radical surgery is considered for a dialysis patient with multiple or invasive bladder tumors.⁽⁹⁾ Treatment for dialysis patients with urothelial cancer should be the same as non-dialysis patients because aggressive radical surgery may result in better quality of life and prolonged survival.⁽¹¹⁾ But indications for surgery should be determined carefully as there are more risks of postoperative complications. The above principle is appropriate for patients with CRF in whom long term dialysis is inevitable in the near future.

In our patient, bladder tumors were managed by transurethral resection instead of radical cystectomy due to decompensated liver cirrhosis with thrombocytopenia. Following bilateral nephroureterectomy, the patient recovered well. She was discharged on the 7th postoperative day without any significant complications. Because of the history of high-grade UC and because the bladder was not removed, close follow-up is necessary for this patient, since there is a high incidence of bladder tumor recurrence and repeated TUR-BT may be needed.

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同時發生的多發性泌尿道尿路上皮癌及腎細胞癌

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同時發生的泌尿道表皮移行細胞癌及腎細胞癌是很少見的。我們報告一位 67 歲的腎功能不全女性，同時具有多發性泌尿道尿路上皮癌及一側的腎細胞癌，以經尿道膀胱腫瘤刮除術及雙側腎臟輸尿管切除術治療。病理切片發現兩側腎臟、輸尿管及膀胱有多發性的移行細胞癌，右邊腎臟同時有一腎細胞癌，病患在術後開始血液透析並接受定期追蹤。(長庚醫誌 2008;31:515-9)

關鍵詞：尿路上皮癌，腎細胞癌，同時

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