Acta Clin Croat 2002; 43:305-

Case Report

A RARE CASE OF RENAL CELL CARCINOMA IN A PATIENT WITH CROSSED-FUSED ECTOPIA: SURGICAL AND RADIOLOGIC CONSIDERATIONS

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SUMMARY – Crossed-fused renal ectopia is an uncommon condition and cases of malignant tumors in such anomalies are extremely rare. A case of renal cell carcinoma in a patient with crossed-fused ectopia is reported. The patient was successfully treated with partial nephrectomy following isthmus division. Radiologic investigations and operative findings are presented. It is thought to be the fourth reported case of renal cell carcinoma in crossed-fused ectopia.

Key words: *Carcinoma renal cell – diagnosis; Carcinoma renal cell – surgery; Kidney – abnormalities; Kidney neoplasms – pathology*

Introduction

A case of renal cell carcinoma (RCC) in a man with crossed-fused renal ectopia is reported. It is an uncommon congenital anomaly and cases of malignant tumors in such conditions are extremely rare. Radiologic studies suggested a hypervascular tumor on the upper pole of the crossed kidney next to the fusion line. Radical nephrectomy with isthmus division was performed successfully. The value of thorough urologic and radiologic investigations is stressed. To our knowledge, this is the fourth case report of this rare condition.

Case Report

We report on a case of RCC in a 62-year-old man who was previously diagnosed for 20 years with left-to-right crossed-fused renal ectopia. The patient was assessed for persistent right abdominal and lumbar pain. There was no hematuria. Laboratory evaluation was normal. IVP, CT and MRI showed a 6-cm parenchymal mass on the superior and lateral aspect of the left lower crossed kidney close to the line of fusion (Fig. 1). Angiography was performed to decide on definitive treatment and to establish the extent of tumor (Fig. 2). It was essential to show us which kidney the tumor originated from. Vascular anatomy of the crossed kidney comprised a single renal artery from the left common iliac artery and a single renal vein draining into the left common iliac vein. The drainage of the tumor originated from the left kidney. The patient underwent transabdominal radical nephrectomy with isthmus division of the left crossed kidney, along with tumor resection through the right pararectal incision. There was no lymph node involvement. Pathologic specimen revealed a 6-cm RCC of the upper pole of the left kidney, T1NoMx, Fuhrmann grade III, of clear cell type without invasion of the capsule or renal pelvis. The tumor did not extend to the resection margin of the fused kidneys. At two years postoperatively, the patient was well, and there were no tumor masses or enlarged lymh nodes on control abdominal CT scan.

Discussion

Crossed renal ectopia is an uncommon congenital anomaly and in most of the cases it usually presents with

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Received April 26, 2004, accepted June 28, 2004

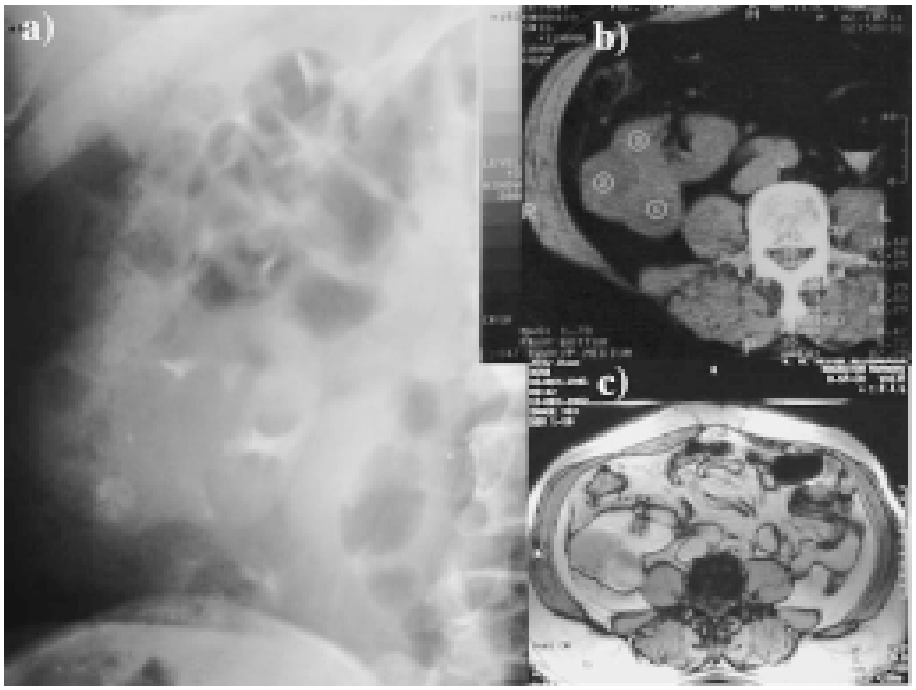
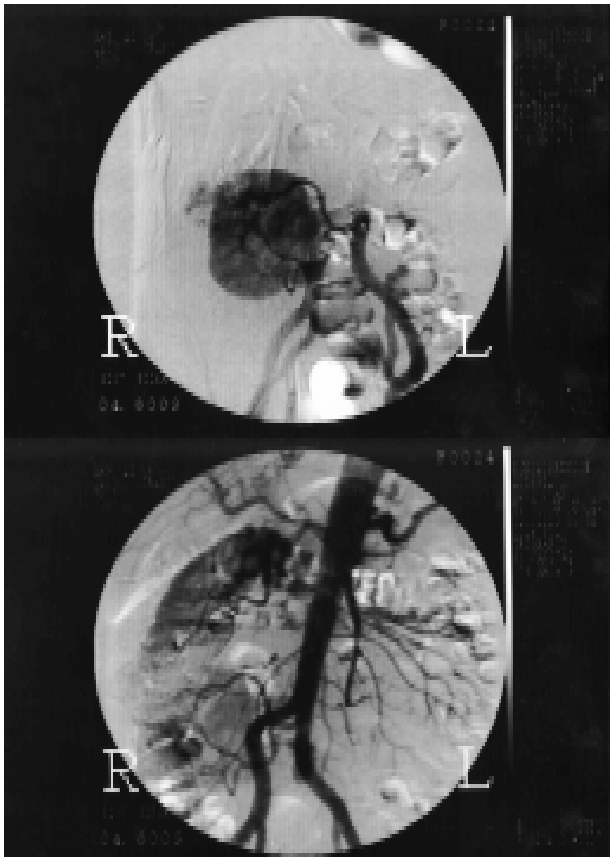


Fig. 1. (a) IVP showing both kidneys and their collecting systems on the right side with tumor mass laterally; (b) CT; and (c) MRI showing fused kidneys and tumor mass next to the line of fusion.



fusion of the kidneys. The autopsy incidence has been calculated to 1 *per* 2000[1]. There is a slight male predominance (3:2), and the left-to-right crossover occurs more frequently, as in this case[1]. Most patients are asymptomatic although there may be an increased risk of urinary tract infection and renal calculi. Cases of malignant tumors in such anomalies are extremely rare[2-4]. The surgical approach to ectopic and especially fused kidneys merits caution because of the uncertain anatomy, and division of the isthmus usually is necessary to gain access to the tumor and surrounding lymph nodes. Vascular studies must be performed preoperatively to assist in operative planning and ensure proper interruption of the blood supply of the tissue to be resected. According to our experience, angiographic study is considered essential to confirm renal anomaly, tumor situation, and to plan surgical approach because vascularization varies from case to case. Radical nephrectomy with isthmus division adapted to neoplasic localization through transperitoneal approach remains the essential treatment.

Fig. 2. Renal angiography showing drainage of the tumor originating from the crossed left kidney.

References

1. BAUER SB. Anomalies of the upper urinary tract. In: WALSH PC, RETIK AB, VAUGHAN DE Jr, WEIN AJ Jr, eds. Campbell's urology. Philadelphia: WB Saunders, 2002:1900.
2. BOLTON DM, BOWSHER WG, COSTELLO AJ. Renal cell carcinoma in both moieties of crossed fused ectopia. Aust N Z J Surg 1993;63:662-3.
3. SUGITA S, KAWASHIMA H, NAKATANI T, YOSHIMURA R, WADA S, SUGIMURA K, KISHIMOTO T. Renal cell carcinoma in an L-shaped kidney. Int J Urol 2000;7:236-8.
4. TSUNOE H, YASUMASU T, TANAKA M, KAI N, NAITO S. Resection of an L-shaped kidney with renal cell carcinoma using a microwave tissue coagulator. Int J Urol 2001;8:459-62.

Sažetak

RIJEDAK SLUČAJ KARCINOMA BUBREGA U BOLESNIKA S KRIŽANOM DISTOPIJOM I FUZIJOM: RADIOLOŠKA I KIRURŠKA PROBLEMATIKA

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Križana distopija bubrega je neoubičajena anomalija koja se rijetko susreće u kliničkoj praksi. Incidencija tumora u ovim anomalijama iznimno je rijetka. Prikazan je slučaj karcinoma bubrega u bolesnika s križanom distopijom i fuzijom bubrega. Bolesnik je uspješno liječen djelomičnom nefrektomijom s razdvajanjem fuziranih bubrega. Raspravlja se o dijagnostičkoj i terapijskoj problematici ove rijetke bolesti. Prema našim saznanjima ovo je četvrti prikaz slučaja u literaturi.

Ključne riječi: *Karcinom bubrežnih stanica – dijagnostika; Karcinom bubrežnih stanica – kirurgija; Bubreg – nenormalnosti; Bubrežne neoplazme – patologija*