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Functional medicine

About a case of ureteropelvic junction obstruction in L-shaped cross-fused kidney

Walid Jallouli*, Ahmed Sellami, Kays Chaker, Mokhtar Bibi, Mohamed Ali Ben Chehida, Mohamed Mourad Gargouri, Karem Abid, Sami Ben Rhouma, Yassine Nouira

Department of Urology, La Rabta Hospital, Tunisia

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Introduction

Crossed renal ectopia is a rare congenital malformation in which one kidney is located on the side opposite from which its ureter inserts into the bladder. The majority of crossed ectopic kidneys are fused to the ipsilateral kidney. The L-shaped kidney is one of the six forms of crossed renal ectopia with fusion; these include unilateral fused kidney (inferior ectopia), S-shaped kidney, lump kidney, L-shaped kidney, disc kidney, and unilateral fused kidney (superior ectopia).

Case report

A 40-year-old woman, primigravida, first visited our hospital at 22 weeks due to a fever and left flank pain. These symptoms had begun 3 days prior to her visit. She reported several episodes of urinary-tract infections in the past. Her past surgical history was irrelevant to this case. She had no significant family history. Upon physical examination, the patient presented hyperthermia (39 °C), tachycardia (120 beats per minute), and blood pressure of 110/85 mmHg. There was suprapubic tenderness and left flank tenderness at percussion. Gynecological examination was normal. Analytical evaluation revealed an elevated white blood cell (25*10) with 71% neutrophils, an elevated protein C reaction (150 mg/dl). Urine tested positive for leucocytes and proteinuria but negative for red blood cells. The patient was admitted with the diagnostic of acute pyelonephritis and treatment was started empirically with ampicillin after urine and blood culture were performed. Despite treatment, the fever persisted and the patient's condition did not improve. Urine culture was positive for E. Coli. Antibiotics had been ineffective in controlling pyosepsis. Retrograde ureteral catheterization via cystoscopy was unsuccessful. After percutaneous nephrostomy, prompt clinical improvement was observed. Abdominal pelvic CT and antegrade pyelogram showed a Crossed Fused Ectopic Pelvic Kidney with ureteropelvic junction obstruction (Fig. 1). With this radiological diagnosis, the patient was subjected to open pyeloplasty using **posterior lumbotomy.** Intraoperative finding was a UPJO associated with aberrant vessels and crossed fused ectopic kidney. She underwent **dismembered** pyeloplasty combined with appropriate transposition of the UPJ in relation to aberrant vessels. Histology showed defective circular muscle fibres with excessive collagen deposition, consisted with UPJ obstruction. Intravenous urogram at 8 months showed no hydronephrosis (Fig. 2). The patient is well in 36 months of follow-up.

Discussion

Crossed renal ectopia is an uncommon condition in which one kidney crosses the midline to the opposite side of the spine. The embryological development of crossed renal ectopia is not clear, and several hypotheses have been put forward such as faulty development of the ureteric buds or vascular obstruction to the ascent of the permanent kidney.[1] The ectopic kidney is most often mal rotated, and situated. Below the normal kidney, both kidneys are usuallay fused together, in such as a way that the upper pole of the lower kidney is fused with the lower pole of the upper one. After horse shoe kidney, crossed fused ectopia of kidneys is the most frequent fusion abnormality of the urinary tract with a male predominance of 3:2.[1] Wilmer, in 1938, first categorized the fusion anomalies of the kidney and McDonald and McClellan, in 1957, included crossed ectopia with fusion, crossed ectopia without fusion, solitary crossed ectopia and bilateral crossed

* Corresponding author.
E-mail addresses: jallouliwalid1@gmail.com (W. Jallouli), chakerkays@gmail.com (K. Chaker).

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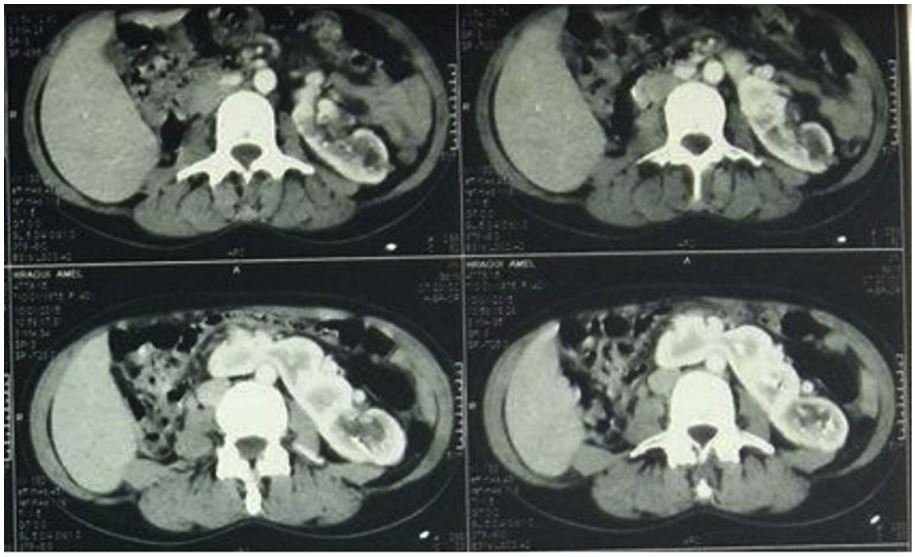

Fig. 1. Abdominal pelvic CT and antegrade pyelogram showed a Crossed Fused Ectopic Pelvic Kidney with ureteropelvic junction obstruction.

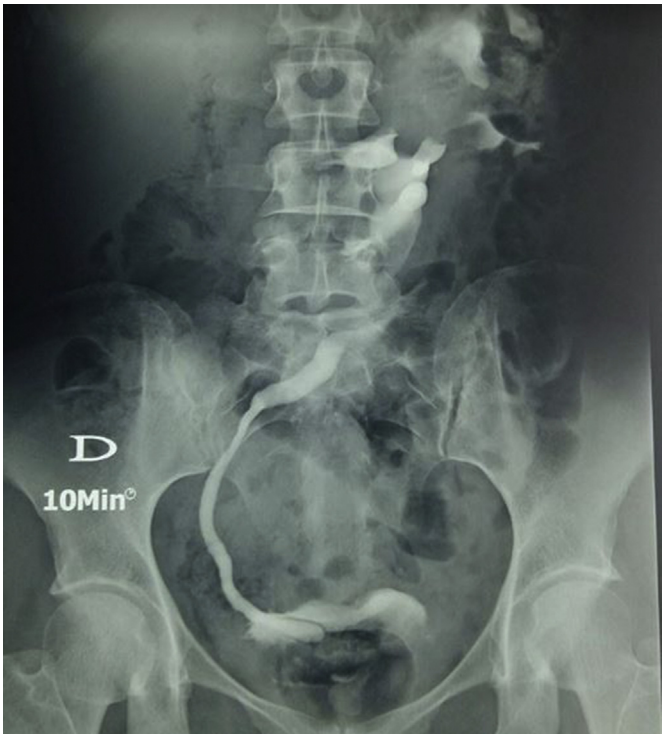

Fig. 2. Intravenous urogram at 8 months showed no hydronephrosis.

ectopia in a modified classification.[2] The currently accepted classification, which helps in understanding the embryology, renal ascent and rotation, is depicted in figure, these abnormalities are clinically significant because approximately half the patients manifest complications e.g, hydronephrosis, infections and nephrolithiasis.[2] The incidence of crossed renal ectopia estimated at 1 in 1000 live births.[3] Crossed ectopia without fusion is much rarer and occurs in 10–15% of all crossed ectopic kidneys.[3] Very few cases of solitary crossed renal ectopy have been reported. There seems to be a slight preponderance of this anomaly in males and the kidneys are more often found on the right side.[1] Crossed ectopic kidney may be discovered at any age, but is most frequently found in the third decade of life. The incidence of PUJO in horeshoe and ectopic kidneys ranges from 25% to 33% and from 22% to 37%, respectively. No data are available in the literature regarding the incidence of PUJO in fusion anomalie other than horseshoe kidneys.[4] Plyeloplasty in crossed fused ectopic kidneys poses a technical challenge to the surgeon performing a minimally invasive procedure. The specific problems are abnormal pelvic location of the kidneys (in close proximity to major vessels and pelvic viscera), abnormal vasculature suppling the kidneys, and proximity of the normal ureter to the dilated renal pelvis on the affected side. Surgical management in the form of excision of stenotic ureteropelvic segments, trimming of a redundant pelvis, transposition of aberrant vessels, and ureteropelvic anastomosis are the basic principals of management. The minimally invasive treatment of these patients is feasible with laparoscopic and robotic pyeloplasty.[5]

Conclusion

Crossed fused renal ectopia is mostly detected incidentally during investigation for other problems. It is more common in boys. The left moiety crosses over to the right in the majority of cases. And, when urological problems are associated, they require appropriate surgical management.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

References

1. Patel TV, Singh AK. Crossed fused ectopia of the kidney. *Kidney Int.* 2008;73:662.
2. McDonald JH, McClellan DS. Crossed renal ectopia. *Am J Surg.* 1957;93 995-100.
3. Chung SD, Chueh SC, Chiang HS, Liao C-H. L-shaped cross-fused kidney with stone. *Urology.* 2009;73(1):61–62.
4. Shailesh S, Veereshwar B, Arun K, Rakesh K. Crossed fused renal ectopia: challenges in diagnosis and management. *J Indian Assoc Pediatr Surg.* 2013;18(1):7–10.
5. Modi P, Goel R, Dodia S. Case report: laparoscopic pyeloplasty with pyelolithotomy in crossed fused ectopia. *J Endourol.* 2006;20:191–193.