Bilateral ectopic pelvic kidney associated to left ureteropelvic junction syndrome: A case report

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ABSTRACT

Bilateral ectopic pelvic kidney is an exceptional finding and it may be associated rarely with other abnormalities of the kidney such as uretero-pelvic junction syndrome. We report a case of bilateral ectopic pelvic kidney revealed by left flank pain with a left uretero-pelvic junction syndrome and a right ureteral duplication proved by computed tomography. A MAG3 renal scintigraphy was performed confirming the obstructive uretero-pelvic junction. An open left Anderson-Hynes pyeloplasty was performed without objectifying, preoperatively, any extrinsic compression without any postoperative complication. This case emphasizes on the possibility of the reconstructive management in such cases.

1. Introduction

Bilateral ectopic pelvic kidney is an extremely rare finding. It can be associated exceptionally with other malformations of the kidney such as vesico-ureteral reflux (VUR), uretero-pelvic junction syndrome (UOJS) and other upper urinary tract abnormalities which make the surgical management of pathologies more difficult and risky.

2. Case presentation

We, herein, report a case of a 39-year-old male, from Tunis, with a history of a ligation of a persistence of the right peritoneal-vaginal duct with evacuation of a hydrocele at the age of 9 and an episode of a left acute pyelonephritis treated medically one year ago, who presented to the emergency with left flank pain with no fever or hematuria. Physical examination ruled out any abnormality. Routine investigations and plain urinary tract were normal. A computed tomography revealed a bilateral ectopic pelvic kidney associated to a right ureteral duplication and a left pelvicaliceal dilation measured at 33mm due to an uretero-pelvic junction syndrome (Fig. 1).

A diuretic Tc-99 m mercaptoacetyltiglycine (MAG3) renal scintigraphy showed reduced tracer excretion by the left kidney, increased intrarenal transit time and slow clearance from dilated pelvis not responding to diuretic injection and the right kidney showed normal tracer uptake and excretion. Left kidney GFR was 32% vs. 68% for the right kidney (Fig. 2).

The patient underwent a left Anderson-Hynes pyeloplasty through a pelvi-abdominal approach with insertion of a double J stent. Surgical exploration has highlighted a dilated pelvis with a unique pedicle from a primitive iliac artery and no evidence of extrinsic compression of adjacent structures (Fig. 3). The patient was discharged after 5 days and the double J stent was removed after 1 months post operatively. No complication was noted during follow-up.

3. Discussion

The ectopic pelvic kidney is a rare abnormality found in 1/3000 person and it can be bilateral in 10% of the cases. The dilation of the upper urinary tract is associated especially due to UPJ syndrome in 50% of the cases, VUR in 25% or the malrotation itself in 25%.

Ultrasonography is mainly useful in antenatal diagnosis of kidney malformation. In this case, abdominopelvic CT-scan confirmed the diagnosis of bilateral ectopic pelvic kidney, the left hydronephrosis and the right ureteral duplication in addition to the evaluation of the renal function.

Renal MAG3 scintigraphy helps evaluating the location of the kidneys, their function and the presence of an obstruction even after diuretic administration which in our case demonstrates the presence of a left obstructive urinary stasis with normal renal function with a history of a homolateral acute pyelonephritis.

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Surgical management of UPJ syndrome is indicated in obstructive or complicated cases which can lead to nephrectomy. Open surgical pyeloplasty is mainly chosen if the GFR is superior to 10% since it has higher success rates up to 95% comparing to endourological techniques such as antegrade laser endopyelotomy and balloon dilation. In spite of abnormal location and surgical challenges, laparoscopic and robotic reconstructive management of UPJO is also feasible and efficient.

4. Conclusion

The association of an ureteropelvic junction syndrome with an ectopic pelvic kidney is an extremely rare finding which can be diagnosed in the antenatal period. CT-scan is very useful in the pre-surgical planning phase. Reconstructive surgical management of such a complex malformation should be considered in cases with normal renal function.

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Mohamed Fares Daoud: Writing – original draft, Investigation.
Abdallah Chaachou: Project administration, Writing – review & editing. Mahdi Marrak: Data curation, Software. Mehdi Raboudi: Resources. Mohamed Dridi: Supervision. Samir Ghozzi: Validation.

Declaration of competing interest

We have no conflicts of interest to disclose.

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References

1. Gleason PE, Kelalis PP, Husmann DA, Kramer SA. Hydronephrosis in renal ectopia: incidence, etiology and significance. J Urol. 1994;151:1660–1661.
2. Ergashev P Kobiljon, Chung Jae Min, Lee Sang Don. Pediatric laparoscopic pyeloplasty of pelvic ectopic kidney with UPJO - a case report. Urol Case Rep. 2021; 34, 101507.
3. Joshi M, Parekar S, Shah H, et al. Role for magnetic resonance urography in the diagnosis of single-system ureteral ectopia with congenital renal dysplasia: a tertiary care center experienced in India. J Pediatr Surg. 2009;44:1984–1987.
4. Manikandan R, Saad A, Bhatt RJ, Neilson D. Minimally invasive surgery for pelviureteral junction obstruction in adults: a critical review of the options. Urology. 2005;65:422–432.
5. Muller CO, Blanc T, Peycelon M, El Ghoneimi A. Laparoscopic treatment of ureteropelvic junction obstruction in five pediatric cases of pelvic kidneys. J Pediatr Urol. 2015;11(6):353.