Case Report

Ureteropelvic junction obstruction presenting after antireflux surgery

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Abstract Ureteropelvic junction obstruction (UPJO) and vesicoureteral reflux (VUR) are two of the most common urologic problems in children that sometimes coexist simultaneously in a patient. However, presentation of UPJO after VUR treatment is rare. We will present two cases and discuss diagnostic and therapeutic aspects of the condition.

Key Words: Surgery, ureteropelvic junction obstruction, vesicoureteral reflux

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INTRODUCTION

Ureteropelvic junction obstruction (UPJO) and vesicoureteral reflux (VUR) are two of the most prevalent urological abnormalities; therefore, it is not uncommon to see these two entities simultaneously in a patient. When the primary diagnosis is UPJO, the incidence of VUR is around 10%,[1] but when patients with VUR are being evaluated, only 0.75-3.6% of them will turn out to have simultaneous UPJO.[1,2]

Rarely, UPJO manifests itself after VUR treatment, making long-term follow-up after anti-reflux surgery prudent. We add two cases after both endoscopic and open surgery.

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CASE REPORTS

Case 1

A 1-year-old male infant was referred because of non-visualization of the left kidney and "lower pole hydronephrosis" of the right kidney on the ultrasound study during a work-up for irritability. His voiding cystourethrogram (VCUG) revealed a left crossed

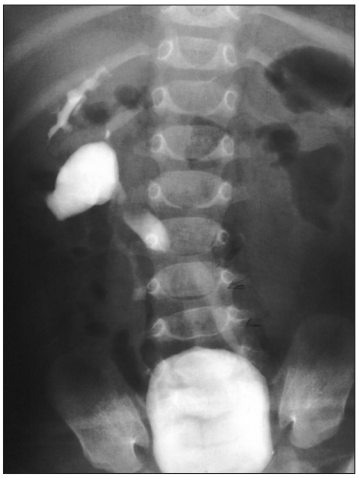

Figure 1: Voiding cystourethography showing bilateral dilating reflux and left crossed ectopia

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ectopic kidney and bilateral VUR [Figure 1]. The patient was placed on prophylaxis but an episode of break-through urinary tract infection (UTI) occurred. Thus, we opted for bilateral open reimplantation (Politano-Leadbetter). A few months after operation, a severe hydronephrosis gradually developed in the lower pole of the fused kidneys and antero-posterior (AP) diameter increased from 10 to 18 mm. Radionuclide cystography (RNC) showed resolution of reflux but the crossed ectopic kidney was obstructed on Lasix renogram with retention of radiotracer up to 3 h after Lasix injection [Figure 2]. A successful dismembered pyeloplasty was done for him.

Case 2

A 2-year-old girl underwent bilateral suburteric injection of Vantris for bilateral grade 4 VUR and recurrent febrile UTI with complete resolution of her VUR after 3 months. However, the AP diameter of her right kidney increased from 10to 15 mm [Figure 3]. Obstruction was documented by Lasix renogram[Figure 4] and after a successful dismembered pyeloplasty, the AP diameter decreased to 7 mm [Figure 5].

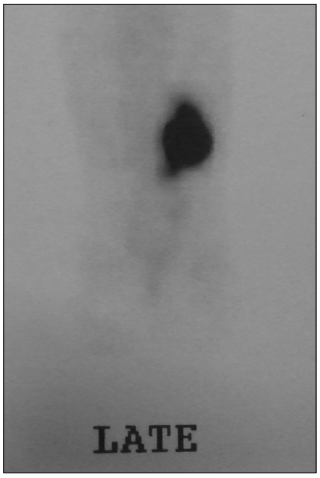

Figure 2: Lasix renogram showing radiotracer retention in the crossed ectopic kidney

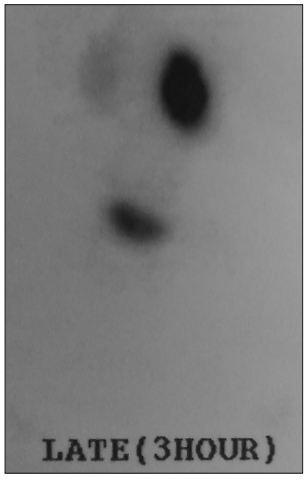

Figure 4: Lasix renogram showing radiotracer retention in the right kidney

DISCUSSION

High-grade VUR can increase the risk of UPJO up to 5-folds,[3] probably because of tortousity, kinking, and periureteritis at the UPJ.[4] This entity is suspected when the degree of dilatation in renal pelvis is disproportionate to that of the ureter, the contrast does not fill the renal pelvis thoroughly or if does so, the pelvis does not empty after voiding during a VCUG.[5]

When UPJO is suspected in a patient with VUR, the Lasix renogram should be performed along with bladder drainage by a Foley catheter; unless, reflux of the radiotracer will make the interpretation of the test difficult.

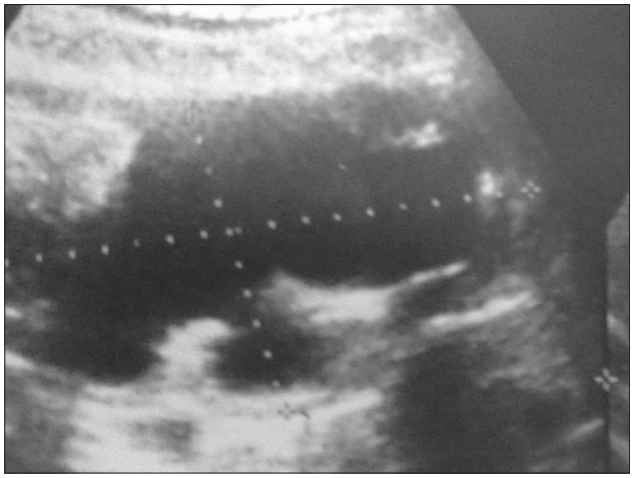

Figure 3: Severe right hydronephrosis after antireflux surgery

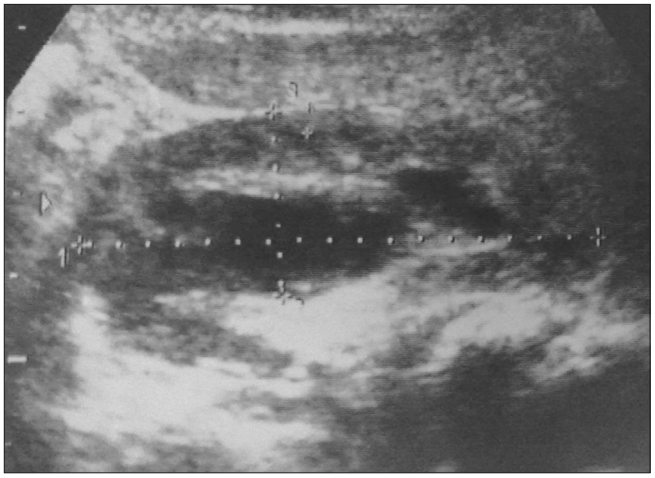

Figure 5: Improved hydronephrosis after pyeloplasty

Sometimes, however, the degree of renal pelvis dilation is minimal and there is no ureteral tortousity or kinking to raise suspicion for concomitant obstruction, as was the case in our patients. This scenario has been reported previously after open ureteral reimplantation[4,5] but not after endoscopic treatment of VUR.

Byrne reported a case of intermittent UPJO that was unmasked after endoscopic antirefluxsurgery[6] but in our cases, the obstruction was fixed.

In a patient with high-grade VUR, minimal pyelectasis could be attributed to the dilating effect of VUR. However, long-term follow-up is necessary after reflux correction to discover any ureteropelvic or ureterovesical junction obstruction that may ensue.

Flashner reported cases of nonobstructive upper tract dilation that later became obstructive.[7] It is not clear that obstruction in the reported cases is because of natural history of some dilation from nonobstructive toward obstructive or as Hollowell believes, primary antireflux surgery might provoke UPJ decompensation.[8]

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