Bilateral congenital ureteric strictures: A case report
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Section: Paediatric radiology
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Patient: 12 years, male

Clinical History:
Antenatally diagnosed bilateral hydronephrosis with dilation of the upper ureters.

Imaging Findings:
The patient was first imaged in utero for a routine ultrasound anomaly scan at 20 weeks gestation. At this time the renal pelves were noted to be "plump" bilaterally. At birth, further ultrasound imaging (Figs.1&2) confirmed bilateral hydronephrosis with dilation of the upper ureters, and prophylactic antibiotics were started. A micturating cystourethrogram (MCUG) at twelve days of age was normal. (Fig.3) A DTPA at two months of age demonstrated relative right renal function of 56% with reasonable drainage following furosemide.(Fig.4)

The patient was followed closely with conservative management and serial imaging with alternating ultrasound and MAG 3 renograms each year. There was no progression of the findings until approximately 11 years of age. (Figures 5-7: MAG 3 renograms at 1, 3.5 and 11 years of age respectively, note furosemide was given part way through study at 1 and 3.5 years but at onset of study at 11 years of age.) At this time, although the patient remained asymptomatic, significantly more hold up in both ureters was demonstrated on a MAG 3 renogram.

A cystoscopy and ureteroscopy was performed, which demonstrated a normal bladder, vesicoureteric junction and distal ureters but it was not possible to reach the mid-ureter or pass the stenotic segment (shown on retrograde urography in figures 8 and 9). Bilateral ureteroplasty with excision of the strictures was then performed, and histology confirmed bilateral mid-ureteric strictures. The patient was subsequently followed up with further imaging, which confirmed improvement in drainage, and he remains well.

Discussion:
Congenital mid ureteric strictures are very rare, are usually unilateral and are well recognised to present a challenging diagnosis [1-5]. We are aware of only two previous reports of bilateral mid-ureteric strictures in the world literature [6, 7].

Of the two previously reported cases of bilateral mid-ureteric stricture in the literature, one case [6] presented previously undiagnosed at 8 years of age, with moderate renal impairment, gross hydronephrosis and upper ureteric obstruction bilaterally. The second [7] presented in a manner much more similar to the case we describe, with prominence of the renal pelves on an antenatal ultrasound examination. In this case, however, a MAG3 renogram performed at one month of age demonstrated left sided obstruction and also necessitated prompt intervention. There may be a further single case of bilateral congenital mid-ureteric strictures presenting in near adulthood. A 15-
year-old girl has been reported, who presented with a two year history of left loin pain and was found to have hydronephrosis and hydrourerter secondary to a left sided mid-ureteric stricture, in association with an atrophic right kidney and blind ending right ureter on retrograde pyelography [8]. The authors suggest that she may originally have had a more severe right-sided stricture.

The case we describe is different from these three cases in that, while there was a degree of hold up, there was never complete obstruction on either side. Consequently, the possibility of conservative management remained and surgical correction was deferred until it was technically far less challenging. As with other causes of bilateral obstruction, there is clearly a need for great caution, but conservative management, in conjunction with appropriate follow up appears to have been successful without demonstrable harm to the patient.

**Differential Diagnosis List:** Bilateral congenital mid ureteric stenoses.

**Final Diagnosis:** Bilateral congenital mid ureteric stenoses.

**References:**


Figure 1

Description: DTPA at 2 months of age. Origin:
Description: MAG 3 Renogram at 1 year of age. Origin:
Description: MAG 3 Renogram at 3.5 years of age. Origin:
Figure 4

Description: MAG 3 Renogram at 11 years of age. Origin:
Description: Left hydronephrosis and hydroureter Origin:
Description: Right hydroureter and hydroureter Origin:
Figure 7

Description: Selected MCUG images

Origin:
Description: Origin:
Description: Right side retrograde urography showing strictured segment of ureter with upstream dilation of system. Origin:
Description: Left side retrograde urography showing strictured segment of ureter with upstream dilation of system. Origin: