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CONGENITAL MID URETERAL STRICTURE PRESENTING AS PRENATAL HYDRONEPHROSIS

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Congenital mid ureteral strictures are rare. While the diagnosis is typically made after a symptomatic or febrile urinary tract infection, we report a case in which this condition was suspected prenatally.

CASE REPORT

A 36-year-old woman, gravida V, para IV, underwent routine fetal ultrasound at 24 weeks of gestation, which demonstrated a slightly enlarged left kidney with a fluid filled cystic structure at the cephalad pole. Amniotic fluid was normal and no other abnormalities were noted. A repeat prenatal ultrasound at 32 weeks of gestation revealed mild dilatation of the left renal pelvis (15 mm.), which emptied into a mildly dilated ureter. The proximal ureter measured 7 mm. in diameter but was not visualized at the bladder level (fig. 1).

The bladder emptied and filled normally, no ureterocele was appreciated and male external genitalia were seen.

A 9-pound 11-ounce male was delivered vaginally, with Apgar scores of 8 and 9. The neonate was initially placed on prophylactic antibiotics. Ultrasound of the kidneys and bladder at age 1 week showed a duplex left kidney with upper pole dilatation and a dilated proximal ureter. Voiding cystourethrogram was normal. At age 2 weeks a mercaptoacetyltriglycine renal scan was performed to evaluate for an obstructive left upper pole moiety. This scan demonstrated a split function of 45% in the right kidney and 55% in the left kidney, with the left upper pole contributing 20% of ipsilateral function or 11% of total renal function. The upper pole was obstructed with a half-time of 55 minutes.

At age 2 months the patient underwent cystoscopy and retrograde pyelography to define the anatomy further and to evaluate for a ureterocele or ectopic ureter. During cystoscopy 2 orifices were seen within the bladder. The left orifice was noted to be laterally positioned. Examination of the prostatic urethra revealed an ectopic orifice that was easily intubated first with an angle tipped guide wire and then with a ureteral catheter. A retrograde pyelogram performed through the ectopic orifice showed a left mid ureteral stricture with significant proximal hydroureteronephrosis (fig. 2). Due to the obstruction associated with adequately function-



FIG. 1. Fetal ultrasound at 24 weeks of gestation reveals dilated upper pole collecting system with dilated proximal ureter.



FIG. 2. Retrograde pyelogram shows mid ureteral stenosis

ing renal tissue at the upper pole, an upper to lower ureteroureterostomy was performed.

Pathological evaluation confirmed the presence of a mid ureteral stricture. Following an uneventful postoperative course, a repeat renal scan demonstrated prompt drainage of the upper and lower poles. The left upper pole contributed approximately 10% of total renal function with a half-time of 16 minutes.

DISCUSSION

While prenatal hydronephrosis is seen in only 1% of all pregnancies, an anatomical obstruction will be found in approximately 50% of these cases.¹ The obstruction is usually at the ureteropelvic junction or ureterovesical junction associated with a primary megaureter. We report a case of prenatal hydronephrosis in which the diagnosis of a mid ureteral abnormality was suggested during an ultrasound performed at 32 weeks of gestation.

Congenital mid ureteral strictures are usually erroneously diagnosed as megaureter or ureteropelvic junction obstruction.² They may be caused by improper recanalization, insufficient vascular supply, persistent ureteral folds or a ureteral bud abnormality.³ When found in duplex collecting systems,

treatment options include heminephrectomy, ureteroureterostomy/pyelostomy and ureteral reimplantation. Docimo et al reported on 7 children with mid ureteral strictures.³ Two of these cases presented with prenatal hydronephrosis and 5 with urinary tract infections. Preoperative recognition of these lesions with antegrade or retrograde studies confirmed the diagnosis in 5 cases, thus, permitting a modified surgical approach and treatment with ureteroureterostomy. In our case a mid ureteral anomaly was suspected prenatally and confirmed postnatally with sonography, renal scan and retrograde pyelography. Due to a high level of suspicion, and proper diagnosis, viable upper pole renal tissue was adequately preserved.

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