Title: Prenatal Diagnosis By Ultrasound In Two Different Cases Of Urinary Abnormalities

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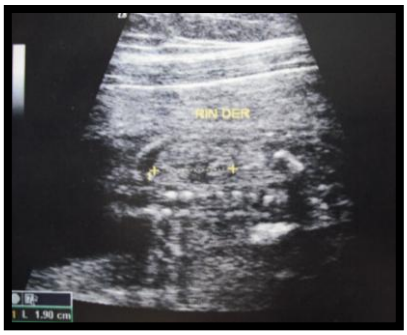
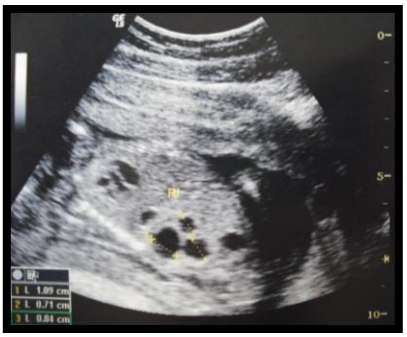
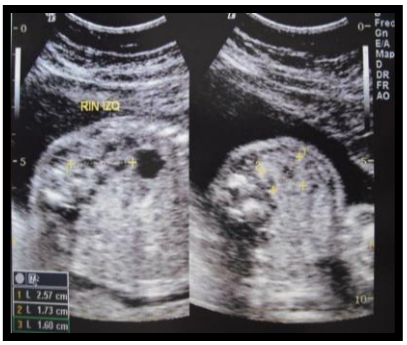
Case report

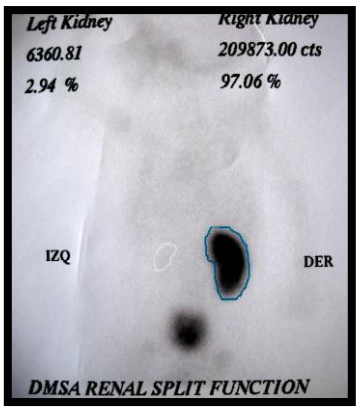
A 28-year-old Argentinian primigravida was referred to our prenatal department at 11.4 weeks of a single live gestation for a routine anatomic survey. None of the patient`s parents reported any family history of congenital malformations. Biometry was consistent with the stated gestational age but the nuchal translucency was in percentile 98th according to gestational age and LCC. Male gender. No other alteration was detected in this examination. The patient performed another ultrasound exam at week 17.3 finding in right kidney (19 x 10 x 9 mm) an anterior-posterior diameter of renal pelvis of 7.3 mm and in left kidney (21 x 13 x 15 mm) three liquids collections of 11, 7 and 8 mm. The





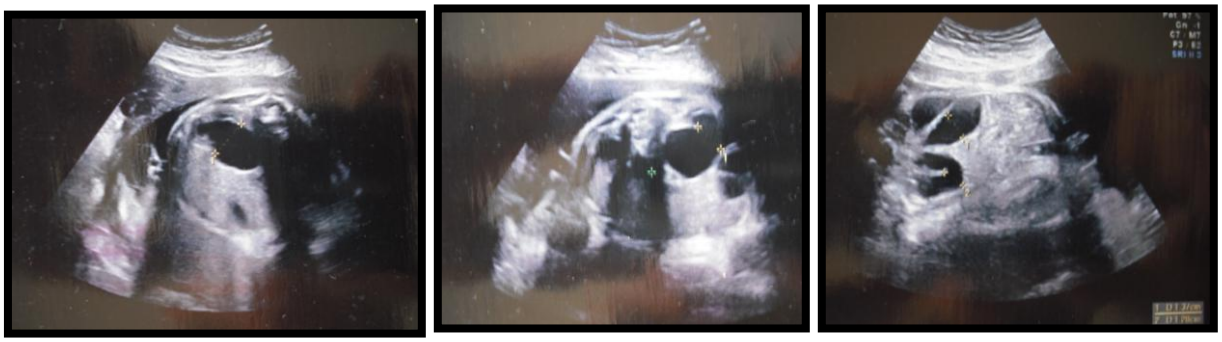


bladder had normal characteristics. At week 28 both kidneys were normal size and growth, with an AP diameter in right kidney of 5.4 mm, and the persistence of the liquids collections on the left kidney. At week 35.1 no liquids collections were found on the left kidney but appeared a difference in size between both kidneys (RK: 39 X 24 X 23 mm / LK: 22 X 17 X 15 mm) and the AP diameter was 7 mm on the right kidney. Postnatal ultrasound exam after two months birth showed: RK: 73 X 34 X 34 mm AP diameter: 11 mm. LK: 16 x 9 x 10 mm AP diameter: 4 mm. Renal scintigraphy Tc99 demonstrated a renal function of 95% on the right kidney and less than 3% on the left kidney. The presence of vesicoureteral reflux was not demonstrated. No surgery was required. The



diagnosis of ureterovesical junction obstruction was confirmed by CUM.

A 37 year-old Argentinian primigravida was referred to our prenatal department at 29.2 weeks of a single live gestation for a routine anatomic survey. Neither parent reported any family history of congenital malformations. Biometry was consistent with the stated gestational age and the amniotic fluid was normal. Male gender. The exam revealed a normal size of kidneys for gestational age and an AP diameter of renal pelvis on the right kidney of 15 mm and 17 mm on the left size. No other alteration was detected in this examination. The bladder was normal characteristics. At week 32.4 the diameter AP diameter of renal pelvis increased up to 21 mm on right kidney and 18 mm on the left one, besides the ultrasound exam also revealed a tortuous course of both ureters. Postnatal exams showed an anormal renal function, but no vesicoureteral reflux or posterior urethral valve was



detected. Bilateral ureterostomy was performed with posterior bilateral urethroplasty and reimplantation eleven months later. Anatomopathological diagnosis confirmed the presence of bilateral megaureter.

DISCUSSION

The ureterovesical junction obstruction is a sporadic abnormality characterized by hydronephrosis and hydroureter in the presence of a normal bladder. The dilated ureter is tortuous, and on ultrasound appears as a collection of cysts of variable size, localized between the renal pelvis, which is variably dilated, and the bladder, which is of normal morphology and dimension. The etiology is diverse, including ureteric stricture or atresia, retrocaval ureter, vascular obstruction, valves and diverticulum.(1)

Primary obstructive megaureter is an uncommon disease. Most of the cases are now discovered prenatally and conservative management with long term follow up are appropriated. Indications for surgery included recurrent or breakthrough urinary tract infections, decreased renal functions, and increased degree of hydroureteronephrosis. The induction of apoptosis in normal functioning myocytes of distal ureter and substitution of fibrotic tissue may contribute to the pathogenesis of primary obstructive megaureter. In carefully selected patients, ureteral tailoring and reimplantation remains a highly successful treatment modality for primary obstructive megaureter.(2)

Most cases of prenatally diagnosed, primary nonrefluxing megaureter resolve spontaneously. Grades 1 to 3 (< 15 mm RPD) hydronephrosis tend to resolve between ages 12 and 36 months. For these grades followup intervals may be progressively elongated after a pattern of improving hydronephrosis has been established. In children with grade 4 or 5 (< 15 mm), or a retrovesical ureteral diameter of greater

than 1 cm the condition may resolve slowly and require surgery.(3) With the advent of routine prenatal ultrasonography, children with uropathies are being detected prior to the development of complications such as urinary tract infection and renal damage. These complications might be averted by early diagnosis and management. Consequently, the goals in evaluating children with antenatal hydronephrosis (ANH) are to prevent potential complications and to preserve renal function. (4) On the other hand, the postnatal management of ANH is still not well defined. Classically, postnatal investigation of ANH includes US, voiding cystourethrography and isotopic renography. Nevertheless, systematic performance of invasive procedures for all infants with ANH would mean the use of unnecessary procedures with potentially harmful side effects.(5) The grading of urinary tract dilatation on postnatal US is crucial in order to establish a rational postnatal management. Two classifications have been used to rank renal pelvis dilatation. The classification proposed by Grignon, relies mainly on the APD of the renal pelvis, whereas the grading system proposed by the Society of Fetal Urology emphasizes the extent of caliceal dilatation (6)

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