Crossed fused renal ectopia associated to uretero-pelvic junction obstruction: imaging difficulties

N. Kasdallah, N.Mlika, H. Ben Salem, S. Blibech, M. Douagi.
Neonatal Resuscitation and Intensive Care Unit .
Military Hospital of Tunis. Tunisia. Faculty of Medicine of Tunis. Tunisia.

INTRODUCTION

The frequency of urogenital malformations is estimated at 5/1000 births. Crossed renal ectopia is a relatively uncommon developmental anomaly in which both kidneys are located on the same side of the body. His association with uretero-pelvic junction obstruction is less common.

OBSERVATION

We report an original case of a full term female newborn with antenatal ultrasonography diagnosis of right uretero hydrouphrosis.

-Pre-natal medical history:

- ✓Non consanguineous healthy couple
- ✓Mother : GI PI ; blood type: O+ Gestational diabetes diagnosed at 21 GA

✓Serologies :

- measles, toxoplasmosis: immune;
- syphilis, hepatitis B: negative

✓Ultrasonounds:

- At 23 GA: normal
- At 35 GA: **ovarian cyst? , dilated renal cavities, laminated parenchyma.**

-Birth:

- Spontaneous labour, vaginal delivery at 37 GA + 5 days
- Clear amniotic fluid

-Physical examination at birth

PN=3570gr; TN=51 cm, PC= 35cm

Asymptomatic

Abdominal exam: normal, **no palpable mass**, Urination +

-Imagery

✓Uro MRI at H48:

- Right kidney increased in size with a very important pyelocalyceal dilatation covering essentially the pyelon upstream, probably due to a stenosis of the pyelo-ureteral junction which is in a pelvic position.

- Left kidney can not be seen

➔**Right pyelo-ureteral pathology on a solitary kidney with important parenchymatous damage.**(fig1)

✓Renal ultrasonography at day 7:

Right kidney with normal lumbar position, Hydronephrosis, renal pelvis ureter syndrome(fig2)

-Blood work

•At day3

Urea= 5.3mmol/l (8.5 mmol/l) ; creatinemia=135 umol/l (128mmol/l) (N=21-75 umol/l) ; Na/K: 130/4.9 meq/l ; CBEU negatif , CBC normal; CRP negative ➔ **Renal failure**

-Actions taken :

➔Echo-guided nephrostomic probe (day 8) for 2 months (fig3)

-Short time evolution :

Urination : 2.77-2.9 cc/kg/h (through the nephrostomy) / no urination via normal tract

Urea 6.3➔ 10➔9.5 umol/l

Creatinimie 128 ➔ 105➔89 umol/l➔47 (4 months)

CBEU Day10 ➔ + : Candida Albicans

-Middle time evolution

✓ Tc-MAG3 scan (at one month)

Non functional left kidney (fig4)

But : Left kidney is clinically functional with a conserved urination

➔**Communication between the left and the right kidneys ?**

✓ Uro scan (at two months)

Liquid cavity at the right renal space (crossed ectopy of the left kidney ?) communicating with the dilated excreting cavity of the right kidney through two tubes. (fig5)

✓Ultrasound supervision:

At age of 4, 5, 8, 13, 15 and 18 months (tab1, fig6):

➔**Left kidney: totally cystic**

➔**Right kidney : chronic nephropathy + pyelocalyceal dilatation evoking junction syndrome**

At age 21 months

✓ Clinical evolution

- Normal development
- No more infectious episodes
- Recuperation on a part of the renal parnchyma
- Normal renal function :

Urea: 6 mm/l, creat: 32 32 umol/l, HCO3: 22, Normal EPP

✓ **Medical decision: therapeutic abstention**

CONCLUSION

The association of renal ectopia with uretero-pelvic junction obstruction lead to difficulties in the interpretation of imaging findings and makes a precise anatomic diagnosis very difficult to establish.

Fig1. Uro MRI H48

Fig3. Schematic representation of the urinary tract with the position of the nephrostomy

Fig5. Uro Scan

Fig2. Renal ultrasonography day 7

Image at 2-3 min Image at 1 min Last min of the nephrogramme

Dynamic images

Fig4. Tc-MAG3 scan

2 months

2 and 1/2 months

15 months

Fig6. Ultrasonographic evolution

Tab1. Ultrasonographic evolution

	1/10/2014 D8	9/10/2014 D8 post nephrost	03/02/2015 4 M	2/3/2015 5M	5/5/2015 8M	6/10/2015 13 M	5/1/2016 15 M
Vol	R: 63/32/18 cyst pouch L =PCD+++ 60/38 mm	R: 33/27.7/46.6 G: 3.2 cm	2 kidneys attached at the right side	2kidneys attached at the right side	R: 5.5 cm	R: 4.3 L: cystic cavity:7x4	R:6.2 L:6.6
DPC (mm) D	20	20	23	22	18	21	24
DPC G	-	Disappearance of the PC cavities	35	35	27	-	
Index mm	R:4 L 2 (indero intern pole)	R 5.2	R: 11.4	12 (NI)	R: 8 (hyperechogenecit y) L: fine tube	10	11
Uretère mm	L: 5	R : fin Pelviens non vus	R: 10	R:9	R: non vu Pelvic L:6	R: cen not be seen Pelvic L:8	R: can not be seen