LETTERS

Two cases of pancake kidney: a rare fusion anomaly initially diagnosed as horseshoe kidney in prenatal ultrasound

Dear Editor,

Pancake kidney is one of the rarest types of crossed-fused renal ectopia, a congenital anomaly of the kidney and urinary tract (CAKUT). In pancake kidney anomalies, the kidneys are located in the pelvic area, fused along both upper and lower poles, creating a disc-shaped mass[1]. Each lobe retains its separate collecting system, while the pancake kidney gets blood supply from branches of the abdominal aorta or the common iliac artery[1].

We report two cases of a 4.5-month-old boy and a 2.5-month-old boy with evidence of a horseshoe kidney in the prenatal ultrasound performed at 22 and 36 weeks of gestation, respectively. The prenatal history was otherwise unremarkable. The 2.5-month-old boy had a remarkable family history since his paternal grandfather had a hypoplastic left kidney, and his maternal first cousin was diagnosed with a congenital solitary kidney. Postnatal ultrasounds in the first month of life indicated a horseshoe kidney located in the pelvic area in the first case and a crossed fused ectopia (the right kidney was in the pelvic area in a transversal position, the left kidney was located in the right iliac fossa in a vertical position, fused in the upper pole to the medial border of the right kidney) in the second case. The corticomedullary differentiation was normal. A Technetium-99m dimercaptosuccinic acid (Tc-99m DMSA) scan conducted in both cases showed an image of two kidneys fused along their inner border with no clear boundaries between them, a pattern compatible with pancake kidney diagnosis.

Both patients were asymptomatic. Creatinine (Cre) levels were at the normal upper limit at diagnosis (first patient: Cre 0.4 mg/dl and second patient: Cre 0.42 mg/dl, normal range 0.2-0.4 mg/dl). The patients had no urinary tract dilatation and remained free of urinary tract infections during the first two years of life; thus, no voiding cystourethrography was carried out. They are being conservatively treated as no symptoms, deterioration of renal function, or other congenital anomalies have been found during a two-year follow-up.

Usually, patients with Pancake kidney are asymptomatic, and the diagnosis is mainly accidental in adult life[2]. Only a few cases are diagnosed in infancy, mainly due to evidence in prenatal ultrasound[3]. Ultrasonography is the first-line imaging method for ectopic kidneys[1]. However, there is often a misdiagnosis of horseshoe kidneys[1], as in our case. In children, an abnormal ultrasound is commonly followed by renal scintigraphy to confirm the diagnosis.

Treatment guidelines are unavailable for crossed-fused renal ectopia, and asymptomatic patients are managed conservatively. However, a long-term follow-up is mandatory, mainly using ultrasound scans, since pancake kidney has rarely been associated with complications, such as an increased risk for urinary tract infections, urolithiasis, and vesicoureteral reflux[1]. Deterioration of renal function is not observed in these anomalies[1]. Patients must be informed of the increased risk of complications, the predisposition to malignancy, and the risks of iatrogenic trauma.

In summary, we describe two cases of pancake kidneys diagnosed early in infancy via renal scintigraphy, initially misdiagnosed as horseshoe kidneys in prenatal ultrasounds, with a benign clinical course during a follow-up of two years.

Keywords: Pancake kidney, prenatal ultrasound, Technetium-99m dimercaptosuccinic acid scan

Conflict of interest
None

References:

1. Lomoro P, Simonetti I, Vinci G, Fichera V, Prevedoni Gorone MS. Pancake kidney, a rare and often misdiagnosed malformation: a case report and radiological differential diagnosis. J Ultrasound. 2019; 22: 207-213.
2. Singhal PM, Vats M, Agarwal M, Neogi S. Pancake kidney: an incidental finding in a young man. BMJ Case Rep. 2018; 2018: bcr2018226751.
3. Walther A, Cost NG, Garrison AP, Geller JI, Alam S, Tiao GM. Renal rhabdomyosarcoma in a pancake kidney. Urology. 2013; 82: 458-460.

Kosmeri C, Soukia A, Siomou E

Department of Pediatrics, University Hospital of Ioannina, Ioannina, Greece

Corresponding author: Kosmeri Chrysoula, MD, PhD, University Hospital of Ioannina, Stavros Niarchos Avenue, 45500 Ioannina, Greece, e-mail: chrisa.kosmeri@gmail.com