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Clinical vignette

^{99m}Tc-DMSA Scintigraphy Revealed a Unilateral Multicystic Anomaly in a Horseshoe Kidney

Sara Shakeri[1], Fatemeh Farahmandfar[1], Sadegh Moradian[2], Ramin Sadeghi[1]
[1]Nuclear Medicine Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
[2]Department of Radiology, Amiralam Hospital, Tehran University of Medical Sciences, Tehran, Iran

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Introduction

Although most patients with multicystic dysplastic kidney (MCDK) don't show any serious sequelae [1], some rare problems and potential risks are reported such as mass effect, hypertension, and malignant transformation [2–4] or contralateral urinary tract abnormalities such as vesicoureteral reflux (VUR) and uretropelvic junction obstruction [5]. Precise assessments are necessary for planning treatment in order to optimize the outcome [6]. In most cases, the typical presentation of the disease is a palpable mass lateral to midline that can be confidently diagnosed by the US alone, or in combination with CT scan or MRI [1]. ^{99m}TC-DMSA is a very sensitive modality for assessment of cortical function in dysplastic kidneys [7]. This functional imaging added precise information to other postnatal assessment modalities in MCDK cases [8].

Case report

A 6-month-old male infant with a history of unilateral antenatal cystic abnormality in the right kidney on the prenatal screening US was referred for further evaluation. Re-evaluation of the kidneys with the US, at 3 months of age showed a horseshoe kidney (HSK) with normal left moiety and evidence of multi-septate cysts on the right side of the kidney (Fig. 1). The most probable diagnosis was an HSK with unilateral multicystic dysplasia in the right moiety. Due to the uncertainty of the diagnosis of the dysplastic kidney in our case, renal scintigraphy with ^{99m}Tc-DMSA was requested [9]. ^{99m}Tc-DMSA renal

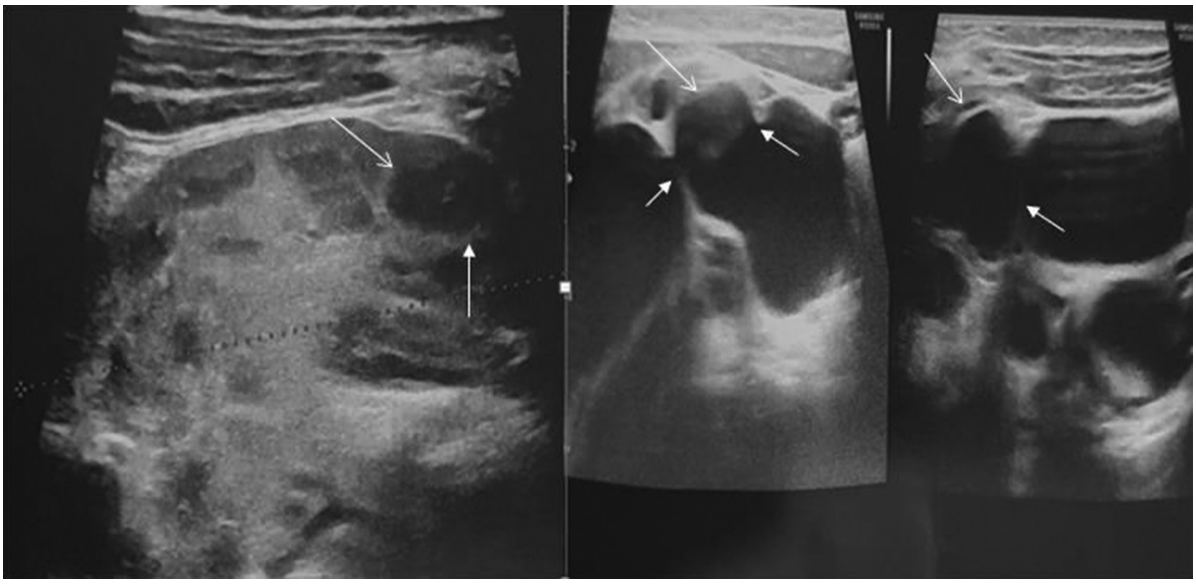

Figure 1. US showed a horseshoe kidney with normal left moiety and multi-septate cysts on the right side of the kidney (arrows)

Correspondence to: Ramin Sadeghi, Nuclear Medicine Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
e-mail: sadeghir@mums.ac.ir

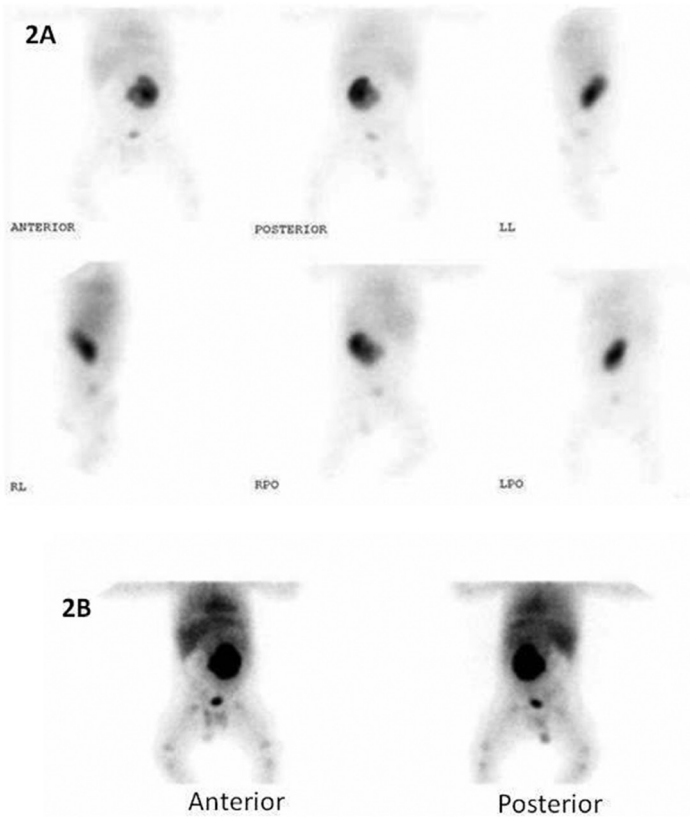

Figure 2. ^{99m}Tc-DMSA scintigraphy showed an HSK kidney with normal radiotracer distribution in the left moiety extended to a band-like activity in the midline and a large photopenic area on the right side (2A) which is more apparent on the anterior/posterior views with higher intensity for better visualization (2B)

scan proved the diagnosis of multicystic changes in a HSK (Fig. 2). Our patient was asymptomatic and underwent close follow up.

Discussion

HSK as the most common renal fusion anomaly in children [10] is associated with other congenital anomalies such as urinary tract infections, and VUR [6]. Although MCDK is the most common renal cystic disease [6], multicystic dysplastic changes in one half of a horseshoe kidney are very rare and reported only in a few case studies in the literature to date [10–12]. To the extent of our knowledge, this is the first time that ^{99m}Tc-DMSA scan is reported in this setting. DMSA scan in MCDK is helpful for determining function of both kidneys and possible complications in contralateral kidney such as VUR associated scars [10].

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