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Wondering intrathoracic kidney: First case in the literature

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Abstract

We report a case of intrathoracic kidney that has additional congenital anomalies and an interesting follow up. A 30 month old female patient with history of spinal dysraphism, anterior ectopic anus who were followed up for recurrent urinary tract infection by Tc-99m dimercaptosuccinic acid (DMSA) scintigraphy is presented. An interesting observation was noticed in her follow up that the left kidney displaced between two different time point static renal images into the left thorax. To our best knowledge, this is the reported first case of wondering intrathoracic kidney observed in Tc-99m DMSA follow up.

Keywords

Intrathoracic; ectopia; kidney; DMSA.

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Introduction

Intrathoracic kidney is the rarest congenital anomaly of the kidneys [1]. This anomaly is usually asymptomatic however presents with dyspnea in case of additional Bockdalec hernia and needs surgical intervention in that case [2]. Tc-99m DMSA renal scintigraphy definitely indicates the localization of the ectopic kidneys and intrathoracic kidney as well. In this case report we want to present our different observation intrathoracic left kidney moving through chest in follow up scan compared to previous one.

Case Reports

A 30 month old female patient with history of operation due to spinal dysraphism,

anterior ectopic anus and recurrent urinary tract infection was referred to our department for static renal imaging. Tc-99m DMSA scintigraphy was performed by intravenous administration of approximately 1 mCi (37 MBq/according to body weight) Tc-99m DMSA and imaging by gamma camera Siemens e.cam e.soft (SPECT Gamma Camera). Anteroposterior and both anterior and posterior oblique projection images of the first Tc-99m DMSA scintigraphy [Fig. 1] showed no significant anomaly related to the kidneys besides a little bilateral dysmorphism. However follow up Tc-99m DMSA scintigraphy showed significant dislocation of left kidney into the left hemithorax [Fig.2]. Additionally on corresponding MR images [Fig. 3] on coronal T2W fast spin echo images, left kidney was displaced to the hemithorax.

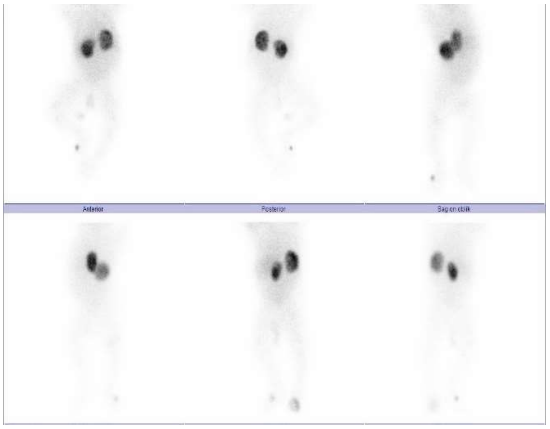

Fig. 1. Anteroposterior, right and left anteroposterior oblique projection Tc-99m DMSA images at first presentation.

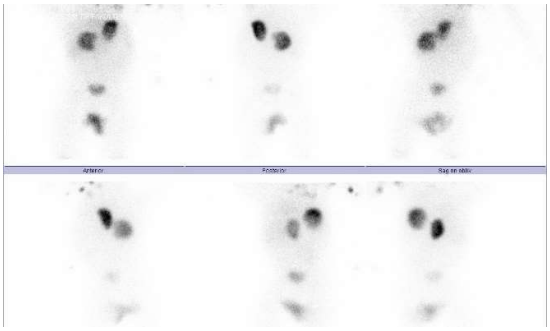

Fig. 2. Anteroposterior, right and left anteroposterior oblique projection Tc-99m DMSA images at two years follow up.

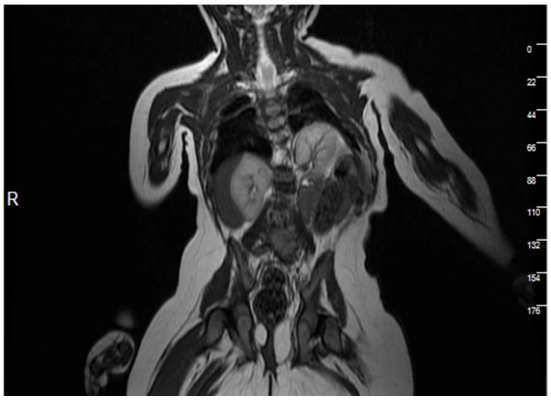

Fig. 3. On coronal MRI T2W fast spin echo images, left kidney is displaced to left hemithorax.

Discussion

This case report shows an exceptional case with different location of kidneys and moving kidney through thorax as the first case in the literature. There is several case reports of intrathoracic kidney incidentally found in other scintigraphies (Tl-201 myocardial perfusion scintigraphy, radionuclide cisternography) in adult patients [3, 4]. There is only one case series

in the literature with five cases; in that study two out of five cases required surgery due to additional bowel hernia and one patient for bilateral intrathoracic kidney due to respiratory compromise [5]. Another indication for surgery is dyspnea due to respiratory dysfunction.

In other previous case reports renal cell carcinoma and ureteropelvic junction obstruction of intrathoracic kidneys have been demonstrated thus these patients may need further investigation with dynamic renal scintigraphy. This case was presented due to recurrent urinary tract infection probably due to her additional anal anomaly. Although a recent report have shown a case with acquired intrathoracic kidney after trauma [6] upper dislocation of a kidney to the hemithorax without an underlying pathology or trauma is extremely rare. As far as we know this is the report of the first case with wondering intrathoracic kidney.

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