

Artigos Internacionais

Congenital Intrathoracic Right Kidney in an Adult

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Abstract

Congenital anomalies of the kidneys, including abnormal migration, are frequently encountered and probably related to the complex embryogenesis of this organ. Intrathoracic kidney is the least common of all renal ectopias. The diagnosis of intrathoracic kidney should be considered in the presence of a posterior mediastinal mass on chest x-ray. This is a case report of a 25-year-old asymptomatic female admitted to a medical service for investigation of opacity at the right base of the chest discovered accidentally on a routine chest x-ray scan. The opacity was subsequently identified as renal ectopia on a chest CT scan.

Key words: intrathoracic kidney, renal ectopia, ectopic kidney

Introduction

Thoracic kidneys in adults may be given one of the following three diagnoses: traumatic diaphragmatic hernia, congenital diaphragmatic hernia or congenital ectopic kidney (1). The prognosis and treatment differ for each diagnosis. Intrathoracic ectopic kidney is a very rare congenital malformation due to abnormal migration of the kidney. In fact, it is the least common of all renal ectopias (0.5-5 % of cases) (2, 3, 4).

Thoracic kidney occurs twice as frequently in males as in females (5,6). The organ usually presents totally normal structure and functioning (7).

Diagnosis is established with pyelographic and tomographic scans. Images show an abnormally shaped excretory system with longer-than-usual ureters, allowing differentiating thoracic kidney from other posterior tumors, such as neurogenic masses, including neuro-

blastoma, ganglioneuroma, neurofibroma, neuroenteric cysts and foramen of Bochdalek hernia (8).

Case Report

A 25-year-old female patient previously submitted to routine medical examination as part of a job application procedure presented a chest x-ray showing an abnormal shadow superimposed on the heart silhouette (Figure 1). The patient had no other complaints. A plain thoracic x-ray scan revealed a sharply outlined mass measuring 7.5 cm in the posterior-medial portion of the right lung, which was later confirmed by chest CT scan to be a congenital intrathoracic kidney (Figures 2 and 3). The kidney was morphologically normal. The physical examination was unremarkable. No major thoracic or abdominal trauma or prior complaints of respiratory or

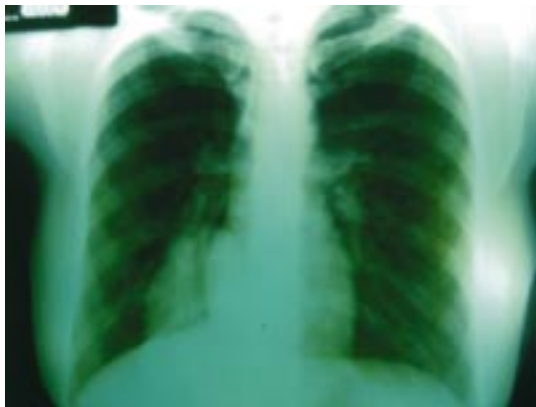


Figure 1 – Chest x-ray showing opacity at the right base

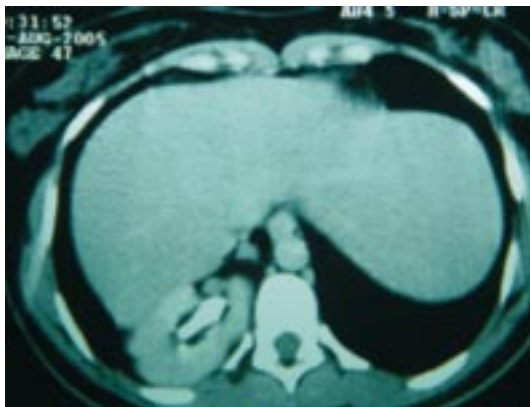


Figure 2 – Chest CT scan showing intrathoracic kidney

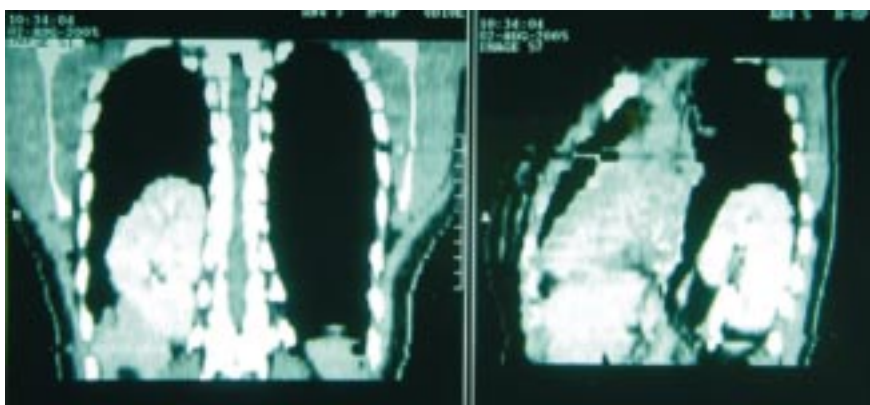


Figure 3 – Details of coronal and sagittal CT scan with thoracic cuts showing intrathoracic right kidney.

urologic illness were reported. Urinalysis and serum urea and creatinine levels were both normal.

Comments

Ectopic kidneys are usually found in the pelvic region, but intrathoracic renal ectopia is extremely rare (11). The first case of thoracic kidney reported in a live individual was that of a 43-year-old woman diagnosed by Wollfromm using retrograde pyelography (9). Prior to 1987, only 94 cases had been reported (10). It is most frequently reported in the left hemithorax (5,6). The low incidence of right renal ectopia is explained by the early fusion of the pleuroperitoneal channel on the right side and by the presence of the liver as a barrier (10).

The diagnosis of intrathoracic kidney should be considered whenever a posterior mediastinal mass is observed on a chest x-ray. The radiographic appearance of a thoracic kidney is somewhat like that of posterior mediastinal masses, such as foramen of Bochdalek hernia, sequestration and neurogenic masses, but requires

confirmation by intravenous urography or even by thoracic CT scan (11). In the differential diagnosis, intrathoracic renal ectopia may be distinguished from traumatic or congenital intrathoracic kidney associated with diaphragmatic hernia by CT or MRI scans providing the precise sub-diaphragmatic or supra-diaphragmatic position, thereby avoiding extensive investigations. Though a rare condition, it should be considered upon initial assessment of urologic patients with no detectable kidney in the abdomen or pelvis.

Unlike pelvic kidneys, intrathoracic kidneys are usually asymptomatic and discovered accidentally (11). Complications are rare; thus, most cases of congenital intrathoracic kidney do not require any specific treatment.

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