

Being Right, but in the Wrong Place: Kidney in the Thorax

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A ten month old female child presented with complaints of fever and cough for five days with unremarkable physical examination findings. The chest radiograph showed opacity in the right posterior mediastinum without an air bronchogram. To delineate the nature of this opacity, ultrasonography (USG) was performed, which unexpectedly revealed the opacity to be of renal origin. The USG showed right kidney in the right posterior mediastinum with empty right renal fossa, with right posterior diaphragmatic defect and a normally situated left kidney. Contrast enhanced computerised tomography (CECT) scan of chest and abdomen confirmed the above findings along with the normal functioning of the right kidney. [Figures 1a and 1b]. Ureter exited the thorax through the inferior vena caval opening. Renal blood vessels showed no aberrant origin or drainage. The renal function tests were normal. As the child did not have any renal or pulmonary complications, the management was limited to thoracoscopic closure of diaphragm without replacement of the kidney in the abdomen.

Ectopic kidney is detected in one in 900 autopsies [1]. It results from the disruption of the normal embryological ascent of the kidney from pelvis to renal fossa [1]. Locations of ectopic kidney can be pelvis, iliac, abdominal or thoracic cavity or it can cross to the contralateral side [1]. Among all of these, thorax is the rarest location (<5% among all renal ectopia, incidence of five/million births) [1,2]. Thoracic kidneys usually function normally and are detected incidentally on a chest radiograph [1,2,3]. Ultrasonography and CT scan are the investigations of choice [3]. CT scan has an additional benefit of providing the renal

functional assessment through the excretion of the contrast, though the best functional assessment is provided by renal scintigraphy [3]. Though ectopic kidneys are more prone to develop hydronephrosis and calculi than normal kidneys, thoracic kidneys have lesser incidence of these complications due to straight course of the ureter and better urinary drainage [3,4]. Normally functioning, uncomplicated, asymptomatic thoracic kidney does not require any management [2,4]. Urological or pulmonary complications in these patients warrant intervention [2,4]. The ectopic thoracic kidney can be mistaken for other posterior mediastinal masses like tumors or paraspinal abscesses, consequences of which can be perilous, as it can lead to unnecessary procedures or even accidental removal of a normally functioning kidney [2].



Fig. 1a: Computed tomography scan (axial view) of chest showing kidney in right posterior mediastinum



Fig. 1b: Computed tomography scan (coronal view) of chest and abdomen showing right kidney in the thorax on the right side with left kidney in the abdomen.

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