Case Report

Bochdalek hernia with intrathoracic kidney

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ABSTRACT

Bochdalek hernia is a congenital diaphragmatic defect that allows abdominal viscera to herniate into the thorax. Intrathoracic kidney is a very rare finding representing less than 5% of all renal ectopias. A 20 year old female presented with complaints of dry cough since 15 days and intermittent fever of 4 days duration. As part of routine investigation chest X-ray was done which showed a left retro-cardiac homogenous opacity, rest of the lung field appeared normal. Abdominal ultrasound showed the right kidney to be normal, left kidney was not visualized. Computed tomography scan demonstrated left-sided Bochdalek hernia with the left kidney within the thorax. An IVP was done to confirm the diagnosis. Many a times intrathoracic kidney is confused with a thoracic mass and the patient undergoes a battery of unnecessary investigations, surgical interventions and image guided biopsies for the same, hence to avoid this we are reporting this case.

KEY WORDS: Diaphragmatic-hernia, kidney, thoracic

INTRODUCTION

Bochdalek hernia is a congenital posterior lateral diaphragmatic defect, which allows abdominal viscera to herniate into the thorax. Intrathoracic ectopic kidney accounts for 5% of all renal ectopias and its association with congenital diaphragmatic hernia has been reported to have an incidence of only 0.25%. This condition is common in males and in 80–90% on the left side.[1,2]

We report a case of a female who had a left thoracic kidney associated with left Bochdalek hernia.

CASE REPORT

A 20 year-old female presented with complaints of dry cough for 15 days and intermittent fever of 4 days duration. No history of abdominal pain or increase in frequency or burning micturation. There was no significant past history of any abdominal trauma. The patient does not have any siblings and her mother denied any history of infections or drug abuse during pregnancy. Her menarche was at 13 years and there were no menstrual irregularities. As part of routine investigation chest X-ray was done which showed a left retro cardiac homogenous opacity [Figure 1]. Rest of lung fields appeared normal. Abdominal ultrasound (US) showed the right kidney to be normal; left kidney was not visualized. Computed tomography scan demonstrated left-sided Bochdalek hernia with the left kidney within the thorax. An IVP was done to confirm the diagnosis. Many a times intrathoracic kidney is confused with a thoracic mass and the patient undergoes a battery of unnecessary investigations, surgical interventions and image guided biopsies for the same, hence to avoid this we are reporting this case.

DISCUSSION

The posterolateral defect in the diaphragm through which abdominal organs might herniate into the thorax...
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was first described by Vincent Alexander Bochdalek, a Czech anatomist in 1848, hence bears his name Bochdalek’s hernia. It occurs more frequently on the left side. This is presumably due to the fact that the pleuroperitoneal canal closes earlier on the right side, or due to the narrowing of the right pleuroperitoneal canal by the caudate lobe of the liver. It is common in males than in females in the ratio 2:1. The ectopic kidney is usually pelvic, iliac, abdominal, thoracic, contra lateral, or crossed. Ectopic kidney is slightly common on the left side as was the case in our patient. The intrathoracic location of an ectopic kidney is the rarest with a reported incidence of 5% of all ectopic kidneys.

The association of a Bochdalek hernia and intrathoracic renal ectopia is even rarer at 0.25%. During embryogenesis the developing kidney which is located in the pelvis moves upwards to fuse with the adrenals; and thereby this ascent is arrested. Sometimes, this upward progression of the developing kidney does not stop at its designated point and thus the kidney reaches into the thorax. One of the reasons ascribed to this disorderly ascent is the delay in closure of the developing diaphragm. The ectopic kidney has been known to be associated with many other defects ranging from acromelic frontonasal dysplasia to Williams syndrome.

However there were no other deformities in this patient. In majority of individuals, the thoracic kidney is benign and asymptomatic. It is most often detected incidentally on chest imaging or at the time of thoracotomy for a suspected mediastinal tumor. In such patients the symptoms and X-ray picture might be easily confused for pleuritis, pulmonary tuberculosis, or pneumothorax especially in the pediatric age group. Chest radiographs are not appropriate, CT scan and MRI would be better for diagnosing diaphragm defects. Intra-venous pyelography or renal scintigraphy usually clarifies the diagnosis. As such an incidentally detected intrathoracic kidney which is asymptomatic does not require any active intervention. Its clinical significance lies in its potential to be confused as a pathological thoracic mass leading to its erroneous excision.

Diagnosis of both these conditions thoracic ectopic kidney and Bochdalek hernia can be reached if and only if there is a high degree of suspicion on the part of the treating physician. Usually Bochdalek hernia is detected incidentally, but very rarely patients might present as an acute emergency due to the strangulation of herniated abdominal contents.

We are presenting this case because of its rarity in reported literature.

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