Case Report

Intrathoracic Kidney within Bochdalek Hernia: A Diagnosis of High Index Suspicion

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ABSTRACT. Intrathoracic kidney is a rare developmental anomaly representing <5% of all ectopic kidneys. Here, we present a case of a 60-year-old woman who presented with nonspecific abdominal pain for two years, on and off in nature. She was investigated and found to have intrathoracic kidney within Bochdalek hernia. The idea of presenting the case is to have familiarity with this rare condition and keep a high index of suspicion to diagnose the same.

Introduction

Ectopic kidney refers to a kidney that is situated in any location other than the anatomical renal fossa. Ectopic kidneys occur at a frequency of one in 1000 births. Of the total ectopic kidneys, thoracic location accounts for around 5%. In addition, the association of a Bochdalek hernia and intrathoracic renal ectopia is even rarer at 0.25%. Here, we report a case of a 60-year-old woman with intrathoracic kidney with Bochdalek hernia.

Case Report

A 60-year-old female presented with a complaint of abdominal pain, on and off for the past two years. No other symptoms were reported. Vitals were normal and no significant observation on physical examination. Blood and urine examination were normal. Posteroanterior chest radiograph showed raised right hemidiaphragm and the presence of air-filled bowel loops in the right thoracic cavity (Figure 1). Computed tomography (CT) of the chest showed the presence of the right intrathoracic kidney, small intestine, and large intestine in the right posterolateral aspect of the thoracic cavity (Figure 2). The nuclear scan showed the right intrathoracic kidney (Figure 3). The kidney was found to be normally functioning. As there were no complications directly from a hernia or the ectopic kidney, the patient was treated symptomatically and discharged with follow-up on an outpatient basis, after informing about the anomaly and appropriate counseling.
Discussion

The developing kidney which is located in the pelvis moves upward to fuse with the adrenals during its development. Sometimes, this ascent of the developing kidney fails to arrest at its designated point, and thus, the kidney reaches into the thorax. Such abnormal ascent of the kidneys into the thoracic cavity could be possibly due to the delay in the closure of the developing diaphragm. There could be several other anomalies, ranging from acromelic frontonasal dysplasia to Williams syndrome, which could be linked to the ectopic kidneys. Most of the time, the thoracic kidney is asymptomatic, and this abnormality is detected accidentally, most of the time during investigations done for other disorders. Investigations such as CT scan or magnetic resonance imaging could be helpful in detecting and could be confirmed using intravenous pyelo-

Figure 1. Chest radiograph showing raised right hemidiaphragm and the presence of air-filled bowel loops in the right thoracic cavity.

Figure 2. Computed tomography (a and b) showing the presence of the right intrathoracic kidney, small intestine, and large intestine in the right posterolateral aspect of the thoracic cavity.

Figure 3. Nuclear scan showing right intrathoracic kidney.
graphy or renal scintigraphy. Such abnormality, if asymptomatic, may not require any treatment unless complicating any other viscera. Occasionally, it may be erroneously considered as an intrathoracic mass.

The posterolateral defect in the diaphragm through which abdominal organs herniate into the thorax is known as Bochdalek’s hernia. The pleuroperitoneal canal closes earlier on the right side, and hence, it is more common on the left. The Bochdalek’s hernia is usually asymptomatic but can present as an acute emergency in case of obstruction or strangulation of herniated bowel contents. Both thoracic ectopic kidney and Bochdalek hernia need a high index of suspicion for reaching the diagnosis. In the present case, the patient reported on and off abdominal pain with no other symptoms and was managed with symptomatic treatment.

Although most of the time the herniated kidneys are asymptomatic, there are several reports where patients present with symptoms respiratory distress, cough, epigastric burning, abdominal pain, etc. In a recent case report and literature review, Sarac et al reported more than 20 cases of intrathoracic ectopic kidneys within Bochdalek hernia. Both the left and right sides both males and females were found to be affected with this abnormality. Other organs such as small intestine, colon, hepatic lobes, and spleen were also found to herniated along with the kidneys. In the present case, small intestine and large intestine were also herniated within the thoracic cavity.

Conclusion

Although there are previously reported cases of the intrathoracic ectopic kidney with Bochdalek hernia, reporting of such cases may help understand its occurrence and trend. This may help to make the clinicians familiar with this, to aid in diagnosing this rare presentation in clinical practice.

Conflict of interest: None declared.

References

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