Subdiyafragmatik ektopik böbrek: Olgu sunumu

Subdiaphragmatic ectopic kidney: A case report

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Özet

Subdiyafragmatik ektopik böbrek nadir görülen gelişimsel bir anomalidir. Böbreğin yetişkindeki subkostal retroperitonal pozisyona yerleşmek üzere damarsal gelişimi ile yukarı çıkışındaki uzama, böbreğin yeterince gelişmemiş diyaframa baskı yapmasına ve bu ince diyafram tarafından sarılarak torasik kaviteye yerleşmesine neden olur. Burada sol subdiyafragmatik ektopik böbreği olan 22 yaşında kadın hastayı sunuyoruz. Hastanın fizik muayenesinde sadece hafif künt sol yan ağrısı mevcuttu. Bu yazıda, konjenital subdiyafragmatik böbreğin özelliklerinin tartışılması ve literatürün gözden geçirilmesi amaçlanmıştır.

Anahtar Kelimeler: Böbrek, Ektopi, Subdiyafram

Abstract

Subdiaphragmatic ectopic kidney is a rare developmental anomaly. If ascent of the kidney to its vascular ladder so as to reach its adult subcostal retroperitoneal position is prolonged, this will cause the kidney to be partially in the thoracic cavity, which will press on the incompletely formed diaphragm, leading to a thin membranous diaphragm covering it. Here, we report a 22 year old female patient with a left subdiaphragmatic ectopic kidney. On her physical examination there was only a mild blunt left lumbar pain. We aimed to discuss the features of congenital subdiaphragmatic ectopic kidney and review of the literature.

Key Words: Kidney, Ectopic, Subdiaphragma

Introduction

The kidneys are normally sited in the renal fossae in the retroperitoneal paravertebral space against the psoas muscles. Renal ectopia or an ectopic kidney occurs when it is sited outside this normal position. Renal ectopia is a rare developmental anomaly. The pathophysiology of an ectopic kidney remains unclear. During gestation, the kidney normally develops in the pelvis and ascends on its vascular ladder so as to reach its adult subcostal retroperitoneal position. Arrest in the ascent can take place at any point but is most common at the brim of the pelvis, which is located caudally in the pelvic or abdominal cavities. If the ascent is prolonged, this will cause the kidney to be partially in the thoracic cavity, which will press on the incompletely formed diaphragm leading to a thin membranous diaphragm covering it (1). Here we present a patient with a left subdiaphragmatic ectopic kidney which is an uncommon occurrence. We also discuss the features of congenital subdiaphragmatic ectopic kidneys in the light of the literature.

Case report

This is a report of a 22 year old female patient presented with intermittent spasmodic abdominal pain of acute onset started three months ago. However, a physical examination showed no abdominal pain, but intermittent blunt lumbar pain in the left side. Ultrasonography and compu-

ted tomography was performed for the diagnosis. There were no signs of an acute abdomen. Ultrasonography of the abdomen was performed which showed absence of the left kidney from its normal position, and normal right kidney in position, size, and echogenicity. A plain computerized tomography of the chest and abdomen revealed that the left kidney was in the left subdiaphragmatic region and right kidney in normal position(Fig. 1, 2). Subdiaphragmatic kidney seems normal size, parenchyma and collecting system (Fig. 1). Reasons of her symptoms were considered as nonspecific abdominal pain.

There was no history of accompanying respiratory complaints, fever, chills, and hematuria. The general and systemic examination was normal. Our patient had normal kidney function with normal electrolytes, urinalysis and blood pressure. No other associated anomalies were found in this case, including cardiovascular, pulmonary, spinal and another system.

Discussion

During development, the permanent kidney develops from two sources; the ureteric bud and the metanephrogenic cap from the intermediate cell mass of the lower lumbar and sacral region. As development proceeds, the kidneys change their position and gradually ascend up the posterior abdominal wall reaching the final position opposite the second lumbar vertebra.

Ectopic kidneys result from disturbances of kidney migration (2). A Subdiaphragmatic ectopic kidney is a rare developmental anomaly and it is the least frequent of all ectopic kidneys, occurring one in 1000 cases (3). Subdiaphragmatic ectopic kidney, as seen in our patient, is an uncommon developmental anomaly. Ectopia of the subdiaphragmatic type is more common on the left side and is more frequent in males (4). Unlike the literature in our case the patient was female. In this type of anomaly, the defect is in renal migration although the organogenesis is normal, so if the migration is prolonged the kidney will reach the subdiaphragmatic region and the diaphragm will be eventuated. Unlike pelvic ectopic kidneys, which sometimes are obstructed, have calculi or are infected, subdiaphragmatic kidneys are usually normal and asymptomatic otherwise. The symptom of our patient may not be related to urinary system pathology according to the computed tomography findings.

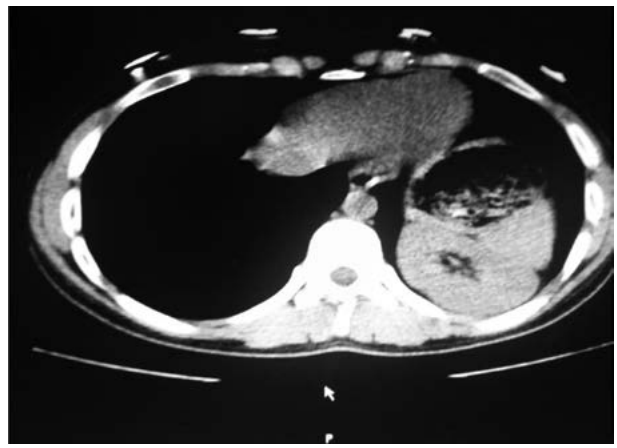

Fig 1: Axial thoracic CT scan shows the subdiaphragmatic left ectopic kidney

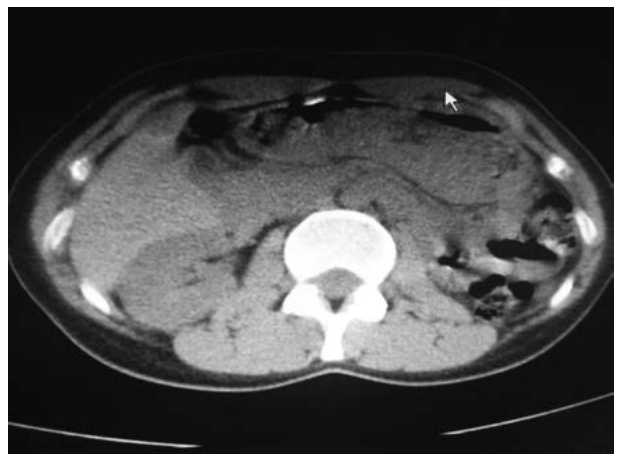

Fig 2. Right kidney is seen in normal position

This defect can be either congenital or acquired; the acquired type can be due to injury of the diaphragm as blunt trauma and road traffic accidents (5,6). Our patient had no history of trauma. Subdiaphragmatic in general, an ectopic kidney is an incidental finding of a mass in the subdiaphragmatic region on a routine chest radiograph (7). An ectopic kidney is frequently diagnosed incidentally during radiological examination it was like this in our case. Patients with subdiaphragmatic kidneys are usually asymptomatic and the condition is usually discovered incidentally during radiological evaluation for other conditions.

Other associated congenital anomalies were not found in our patient including cardiovascular, pulmonary, or spinal, but Maxwell and associates described a case with delayed excretion of contrast on the affected side

after intravenous pyelography, which is the main sign of renal artery stenosis in patients with renal vascular hypertension (8).

The literature review revealed about 200 cases, which have been published until June 1999 (9). Congenital anomalies of the urinary system affect approximately 10% of the population. Furthermore, they are usually asymptomatic and discovered incidentally. Ultrasonography, excretory urography, computed tomography, with or without contrast enhancement, and magnetic resonance imaging is helpful with differential diagnosis (10). We present a case of this rare anomaly, both discovered by chance through ultrasonography and computed tomography.

In conclusion, the possible subdiaphragmatic location of a kidney should be remembered when there is failure to demonstrate a kidney in the normal position and computed tomography must be performed.

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