Unilateral Ectopic Kidney in Pelvis: A Case Report

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Abstract: Abnormalities of the kidney and/or urinary tract are common, and are more common in males than females [1]. Present Study is a case discovered in the department of General surgery at King Fahad specialist Hospital (KFSH), Al-Qassim- Saudi Arabia, during routine check up as Case of Acute appendicitis, we found an ectopic kidney that appears in Computed tomography (CT) scan with contrast. The estimated incidence of an ectopic kidney varies by location: one normal and one pelvic kidney - 1 in 3000[2]

Introduction

The embryological development of the kidney begins early in the 4th week of gestation and during the 6th and 8th weeks the lobulated embryonic kidneys ascend from the pelvic region upwards along the posterior abdominal wall to their normal position and undergo a 90° axial rotation from horizontal to medial. An ectopic kidney results from incomplete, excess or abnormal ascent. If during the process of ascent the kidneys come into contact, a horseshoe kidney or crossed renal ectopia will result.[3]

Case Report

a 13 year-old, Saudi male, medically free, came to the general surgery (GS) clinic at KFSH complaining of right Iliac Fossa Pain, associated with anorexia, vomiting. His lap investigation within normal ranges & CT scan, showed:

- Ectopic, malrotated left kidney, seen at Left pelvic region with hydrenephrosis, cyst or any focal lesion detected with normal site, size and shape of the Right kidney.
- Inflammatory appendicular mural wall thickening with peri-appendicular fat stranding and minimal free fluid, its diameter about (11)mm, with mural edematous changes
- Normal pancreatic density with no focal lesion.
- Normal CT study of both adrenal glands, aorta and IVC
- No focal lesion detected on either liver or spleen with average size.
- Patent well opacified SMV, PV, SV as well as IVC and hepatic veins.

Discussion

An ectopic kidney is classified into an abdominal, lumbar or pelvic kidney based on its location in the posterior abdominal cavity. It is rare in the thoracic cavity.[5] Factors that may prevent orderly movement of the kidneys include ureteral bud maldevelopment, defective metanephric tissue, genetic abnormalities, maternal illness and teratogenic causes.[6] Although a simple ectopic kidney is seldom responsible for symptoms, the association with malrotation of the renal pelvis with a calculus increases the risk of hematuria, hydrenephrosis, and stone formation with colicky pain, as in the present case.[6,7]

Ectopic kidney is often associated with other abnormalities. The most common problem associated with an ectopic kidney is vesicoureteric reflux (VUR) which occurs in up to 85% of children.[8] Pelviureteric junction (PUJ) obstruction is present in 33-52%.[9] This is frequently due to a high insertion of the ureter on the renal pelvis, malrotation of the kidney or an anomalous blood supply which obstructs the collecting system. Renal calculi are also seen in this condition.
The contralateral kidney is abnormal in as many as 50% of patients. Contralateral renal agenesis occurs in 10%. Additional malformations of the cardiovascular, respiratory, genital or skeletal systems are common. Skeletal anomalies are most commonly scoliosis and hemivertebrae. Genital malformations in females including duplication of the vagina, bicornuate uterus and hypoplasia or agenesis of the uterus or vagina may cause problems during menstruation, conception, and pregnancy. The most common genital anomalies in males are hypospadias and cryptorchidism.(4,5,6)

In our case there was no right kidney anomaly or. The left kidney was Ectopic, malrotated, seen at Left pelvic region with hydronephrosis, cyst or any focal lesion detected. The blood supply of an ectopic kidney can vary. There can be more than one aberrant artery and aberrant arteries can originate from the abdominal aorta, common iliac artery, external iliac artery or inferior mesenteric artery.(8)

References
2. Ectopic kidney, Dr Henry Knipe and Dr Avni K P Skandhan et al.