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Case Report

CROSSED FUSED RENAL ECTOPIA, A RARE CASE PRESENTING WITH PAIN ABDOMEN

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ABSTRACT
Crossed fused renal ectopia essentially refers to an anomaly where the kidneys are fused and located on the same side of the midline. Crossed renal ectopia is a rare congenital anomaly most often silent. More than 90% of crossed renal ectopia is fused. We report a rare case of crossed renal ectopia presenting with pain abdomen unusual. Our patient is a 43-year-old male, previously doing well, presented with acute onset of lower abdominal pain and vomiting and mild tenderness in right iliac fossa. The clinical suspicion was that of an acute appendicitis. Computed tomography was performed with I.V iodinated contrast in early and delayed phase revealed fused crossed renal ectopia. Although crossed renal ectopia is an uncommon cause of acute abdominal pain, there should be an index of clinical suspicion in previously healthy individuals presenting with acute abdominal pain.

INTRODUCTION
Crossed renal ectopia is rare cause of abdominal pain. Most often are silent so underdiagnosed in many clinical scinario. It should be the cause of abdominal pain after other possible causes have been excluded (Gopaldas and Walden, 2008). Around 20 to 30% of cases are incidentally diagnosed (Hwang *et al.,* 2002).

CASES
A 43-year-old male presented with acute abdominal pain and vomitting. Mild tenderness was observed in right iliac fossa. This was the first episode of such severe abdominal pain. Based on the clinical examination, a diagnosis of acute appendicitis was suspected. The patient had no significant past medical history non diabetic and BP was 124/76 mm of Hg. Initial blood investigations shows mild leucocytosis. Serum urea and creatinine were normal. Chest X-ray was cleen. Abdominal X-rays reveal non specific bowel gas pattern and an illdefined small radio opacith over sacral shadow. Computed tomography (CT) scan was requested to evaluate for the cause. CT scan was performed in 128 slice CT Scanner, study was performed in three phases that is plain (figure 1), immediate iv (figure2) and delaed phase (figure 3) revealed crossed fused ectopic left to the right kidney inferiorly with lower fused left kidney showing moderate hydroureteronephrosis with a calculus in left proximal ureter .left ureter seen to cross midline with normal insertion to base of bladder in left side (figure 3).

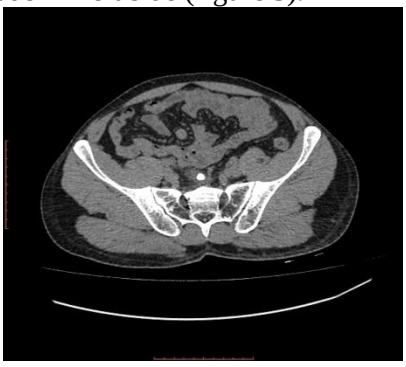

Figure 1: Noncontrast ct scan reveal left proximal ureteric calculus with ureteric wall oedema

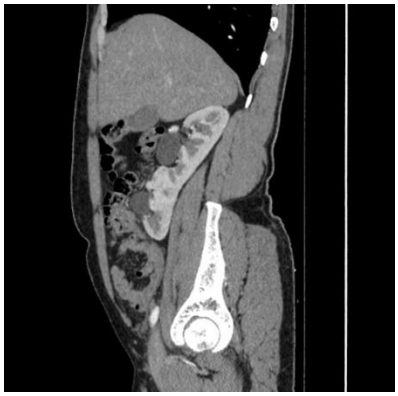

Figure 2: CECT early phase sagittal image reveal fused kidneys with anterior malrotation and normally enhancing parenchyma

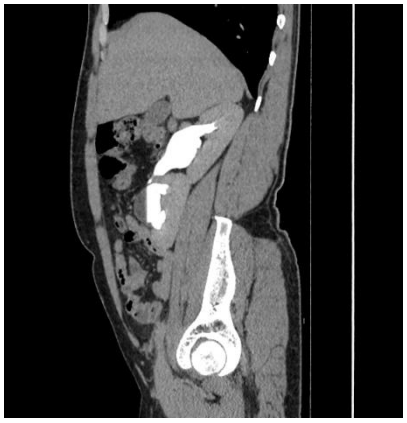

Figure 3: Delayed phase sagittal image reveal malrotation with fused left kidney

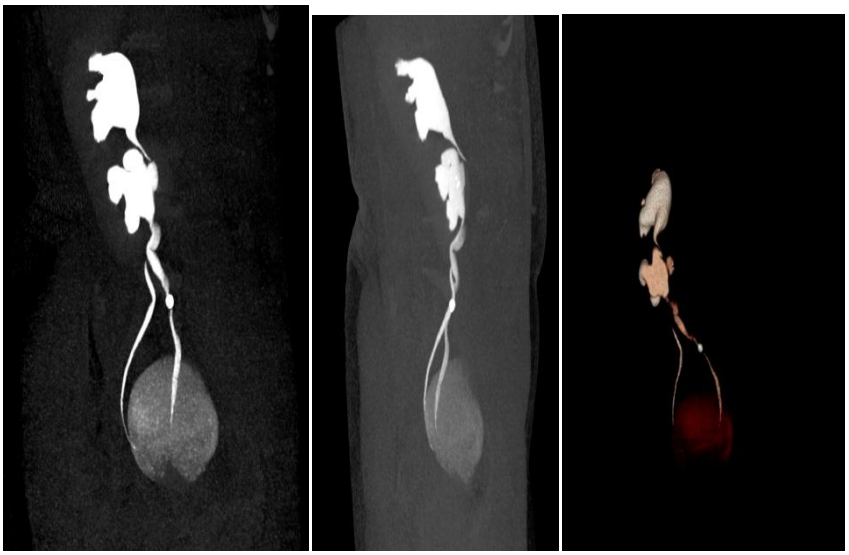

Figure 4: A(Frontal view), B(coloured overlay), C(Lateral view) Urographic 3D Images showing moderate left hydroureteronephrosis with calculus. Fusion between the kidneys spatial relation better seen

Both kidneys showed normal renal parenchymal enhancement (Figure 2). There was anterior rotation of the ectopic kidney, and the renal pelvis (figure 3).

DISCUSSION

Most cases of crossed renal ectopia are silent and are incidentally detected during autopsy, screening tests for routine diseases, or during investigation for unrelated causes (Gopaldas and Walden, 2008; Felzenberg and Nasrallah, 1991). Of these, the commonest form seen is the fusion variety, accounting for 90% of cases (Mugeiren, 1997), having reported incidence of 1 in 7,500 autopsies.

In contrast, the nonfused variety has been reported as 1 in 75,000 autopsies (Felzenberg and Nasrallah, 1991). Four types of crossed renal ectopia have been described: type A, with fusion; type B, without fusion; type C, solitary crossed; type D, bilaterally crossed. Our patient had the uncommon type B variety. In our patient pain lower abdomen was thought to be due to appendicitis because of high incidence, mild tenderness in right iliac fossa and mild leucocytosis. This is because renal ectopias are usually asymptomatic (Gopaldas and Walden, 2008).

It was after exclusion of other pathologies that the cause of abdominal pain was attributed to renal ectopia. The occurrence of symptoms is seen more commonly in males, 2 : 1, and the left-to-right variety common, accounting for 51% of cases (Winram and Ward-Mcquaid, 1959). Our patient is also a male and demonstrated the left-to-right variety. However, the presentation of acute abdominal pain was due to ureteric obstruction of left kidney was difficult to see as the calculus was poorly seen over sacrum. The renal function of both kidneys was normal, as evidenced by normal blood tests and normal renal cortical appearances after intravenous contrast administration.

Tests which can be used to Investigative Renal Ectopia

Conventional Urography: The anomaly is readily detected on conventional urography. In 90% of crossed ectopy, there is at least partial fusion of the kidneys the remainder demonstrate two discrete kidneys on the same side, crossed-unfused ectopy. An anterograde or retrograde ureterogram most often demonstrates normal bladder trigone without ureteral ectopy.

Barium Studies of the Bowel: Barium contrast studies of the bowel should be interpreted in light of bowel laxity in the region of the empty renal fossa (discussed above). In particular, distinction must be made from internal hernia.

Ultrasound: On ultrasound there may be a characteristic anterior or posterior "notch" between the two fused kidneys.

CT with Urogram: The parenchymal band joining the two kidneys can be better visualized on CT scan. Also, anatomical relationship with adjacent structures and positions of the ureter can be better assessed delayed scan done to visualize ureter reconstructed images nicely depict the three dimensional picture of entire kidney, ureter and bladder.

Radioisotope scans have been used (Lurie *et al.*, 1971) Belekar (2009) demonstrated a nonfunctioning ectopic kidney by technicium-99m dimercaptosuccinic acid Tc99mDTPA scan (Belekar, 2009). Nursal and Buyukdereli (2005) used technicium-99m dimercaptosuccinic acid (Tc-99m DMSA) static and Tc-99m DTPA dynamic isotope studies in his two cases, for assessment of function and excretion (Nursal and Buyukdereli, 2005).

If major surgery is planned, nephrotomography to define renal outlines and retrograde ureteroscopy with or without stenting are advised to define the collecting system and draining mapping (Gopaldas and Walden, 2008).

Our patient had ureteric obstruction because of the calculus which is much more common in ectopic kidneys because of poor drainage and repeated episode of infections common for these kidneys.

Acute appendicitis was suspected because mild tenderness in right iliac fossa because of the position of ectopic kidney and leucocytosis was possibly due to infection. Stone was treated by ureteroscopic removal. Patient was relieved from pain after procedure.

Conclusion

Renal tract congenital anomalies should be suspected in previously asymptomatic patients who present with acute abdominal pain. Even though not common, the ectopic kidney varieties should be thought of. In our case, we conclude that a calculus obstructing ureter was possible cause of pain.

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