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Case Report
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# Crossed Fused Ectopic Kidneys in Elderly: An Unusual Presentation

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## Abstract

We report a case where a 68 year old lady who presented to our Geriatric outpatient service with fever, pain in the right lower abdomen since 20 days. There was a finding of crossed fused ectopic kidneys in this patient. Usually this is an unusual congenital malformation of the urinary tract. It may be found on autopsy. In such cases both kidneys are placed unilaterally i.e. on one side or fused. Since it is asymptomatic, it is found incidentally on imaging studies.

We came across this case of crossed fused ectopic kidneys. In our report one kidney was lower than the other kidney. Initially we thought it was a cake kidney but on closer inspection and imaging studies it was found to be crossed fused left to right ectopia. This was incidentally found during the workup for abdominal pain for this 68 year old lady. A detailed history and examination and imaging were done for this patient. Post this she was provided with medications and regular follow-up without active intervention. The patient remained clinically stable.

**Keywords: Renal ectopia; Uroepithelial Tumors; Nephrolithiasis**

## Case Presentation

A 68 year old female presented to the outpatient department of Geriatrics with fever since 20 days, intermittent, mild to moderate associated with chills, symptomatically relieved with medications. The patient had a fever spike one day prior to presentation. The fever was mild, not associated with chills or rigors. Patient also had complaints of breathlessness on exertion for the past 15 to 20 days [Modified Medical Research Council (MMRC) Dyspnea Scale grade II], not associated with Orthopnea, Paroxysmal Nocturnal Dyspnea (PND) and chest pain or palpitations. She also had a history of pain in abdomen near the right flank with burning on passing urine with increased frequency. No history pointing to any possible uterine prolapse. The patient did not have a prior history of nausea or vomiting, headache, body ache, loose stools, urinary incontinence. The patient is a known case of COPD on treatment. Patient had no history of cerebrovascular accident, ischemic heart disease, diabetes mellitus, Tuberculosis or Koch's contact.

On clinical examination, there were no significant abdominal findings. As part of her evaluation, she underwent imaging studies with complete blood count showing leukocytosis with neutrophilic predominance [19070/c.mm; N- 91%]. Urinalysis showed 25 to 30 Pus cells and 2 to 3 epithelial cells per high power fields. Serum creatinine was 0.84 mg/dL. Ultrasonography (Figure 1, 2) revealed right sided crossed fused ectopic kidneys. No family history of a congenital anomaly was reported by the patient. There was an empty left iliac fossa, presence of crossed fused ectopic kidneys on the right side which measured 9.8 cm × 4.0 cm and 7.0 cm × 3.5 cm. A Contrast enhanced CT abdomen was performed which showed crossed fused ectopia with left kidney located below right kidney with fusion of inferior pole of right kidney with superior pole of left kidney with normal rotation (Figure 3). Good function with delayed excretion of right kidney was noted. Also the left ureter crossed the midline from right to left normally draining into left vescicoureteric junction. Other significant investigation findings include chest X-ray Posteroanterior (PA) view which showed hyperinflated lung fields with bronchiectatic changes in lower zones bilaterally with apical pleural thickening, consistent with an obstructive pulmonary pathology. A diagnosis of a acute/chronic Urinary Tract Infection (UTI) with an acute exacerbation of Chronic Obstructive Pulmonary Disease (COPD) was made. The patient was started on antibiotics (Ceftriaxone) and steroids (Hydrocortisone) along with nebulised Ipratropium bromide and Budesonide along with oral Deriphylline and Montelukast-Levocetirizine fixed-dose combination. Patient responded well to treatment and was discharged on urinary antibiotics with instructions to follow up after 7 days.

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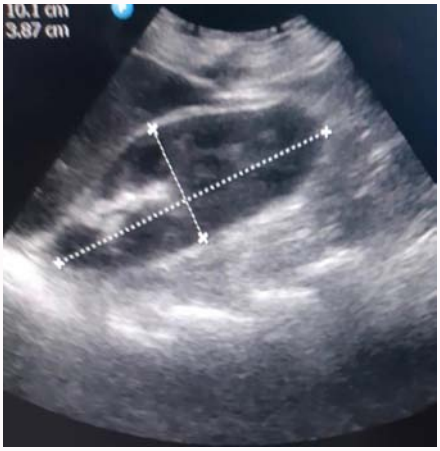


**Figure 1:** (Left) is USG image of the larger of the 2 fused kidneys measuring 10.1 cm × 3.87 cm.

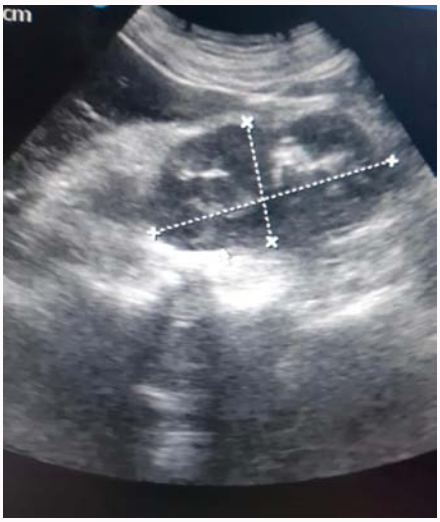


**Figure 2:** (Right) is USG image of the smaller of the 2 fused kidneys measuring 7.2 cm × 3.5 cm.

## Discussion

Crossed ectopic kidney is a rare congenital malformation which is believed to arise from an aberrant development of the metanephric blastema along with the ureteric bud in the period between 4 to 8 weeks of intrauterine life. The estimated prevalence of this rare entity is about 1:2000 as observed in autopsy series. This malformation is observed to have a male preponderance with an observed male-to-female ratio of 3:2 [1]. It is an incidental finding on imaging in about 20% to 30% of patients [2]. The relevance of this anomaly in clinical practice originates from the fact that it is associated with recurrent urinary tract infections, nephrolithiasis and increased risk of uroepithelial tumors, which have been seen to arise between third and fourth decades of life and thus require long term follow up and management [3-5]. Crossed Renal Ectopia [CRE] is classified as: crossed renal ectopia with or without fusion, unilateral crossed renal ectopia (with unilateral renal agenesis), and bilateral crossed renal ectopia (without fusion). In cases of CRE, the left to right ectopia is more common (the left kidney crossing to the right side). Also males are more susceptible as compared to females. Most cases will shows unilateral fused kidney with inferior ectopia with the upper pole of the crossed ectopic kidney fusing with the lower pole of the orthotopic ipsilateral kidney. Both renal pelvis may be anterior [1]. CRE is rarely reported in the literature. This is primarily because it remains an elusive clinical entity without producing any signs and symptoms. This can be proved by the case reports in cadavers. Many congenital anomalies are associated with CRE with fusion such as vaginal, TAR syndrome, renal dysplasia and a single ureter [2-5]. The exact cause of CRE is unknown. However the size and shape and position of the kidneys will depend on time and amount of fusion [6,7].

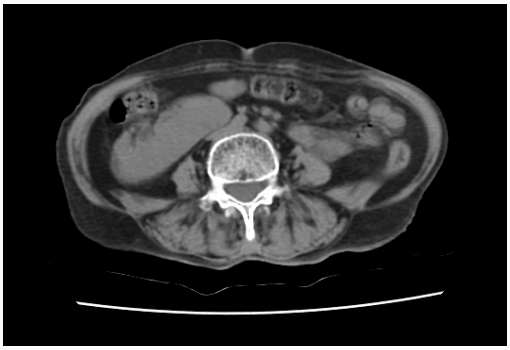

**Figure 3:** CT scan of abdomen showing crossed fused kidneys.

Generally these cases are diagnosed incidentally since they are asymptomatic. But such patients if symptomatic may present with abdominal or flank pain, a palpable mass in abdomen, there is no specific treatment of such anomalies except treating the associated symptoms.

Many investigations like CECT, Magnetic Resonance Imaging (MRI) or Intravenous Pyelography (IVP) and renal scintigraphy can be used for diagnosis but Multi Detector Computed Tomography (MDCT), urography is the best investigation of choice [1,8].

But our patient had abdominal pain near the right flank with burning on passing urine with increased frequency, which could also be due to a small calculus or more commonly non specific [9]. Our patient did well with analgesics and antibiotics. Routine follow up was advised for the patient.

Our case is unique in that we report an elderly female who had presented in her late sixties with urinary sepsis and crossed fused renal ectopia was detected incidentally.

## Conclusion

1. Crossed fused renal ectopia is an uncommon entity found incidentally. They are usually silent and found only on autopsy unless associated with other malformations or obstruction or infections.

2. We report a case of a 68 year old female who was detected having Crossed fused renal ectopia, a rare presentation in elderly.

3. Hence we wish to inform clinicians regarding such anomalies and plan treatment depending on presentation and anomaly.

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