CASE REPORT

Crossed Fused Renal Ectopia-Inferior Ectopia Type

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Abstarct

Crossed Fused Ectopia a rare condition is presented here with a discussion on its clinical presentation dignosis and management

Key Words

Congenital Deformaity, Renal Ectopia, Kidney

Introduction

Crossed ectopia is a uncommon condition in which a kidney is located on the side opposite to the side where its ureter inserts into bladder (1). Crossed ectopic kidneys are fused to their ipsilateral mate in more than 90% of cases. Crossed ectopia without fusion is rare (1 in 75,000 autopsies) as compared to the fused crossed ectopia with fusion (2). We here by present a case of crossed fused renal ectopia-inferior type.

Case Report

A 35 year old male patient presented with history of pain in left lumbar region for the last one month.General physical examination and Routine laboratory investigations were normal. Ultrasound revealed absence of kidney on right side and a large left kidney which possible represents the unilateral fused kidney. Intravenous pyelography revealed that there is unilateral (large) fused kidney on left side with no kidney on right side. Ureter draining the upper moiety i.e. left kidney drains into urinary bladder on the left side and the ureter draining the lower moiety (embryologically right kidney) crosses the midline and drains into the right side of urinary bladder.Diagnosis of Crossed Fused Renal Ectopia (inferior ectopia type) or Crossed Renal Ectopia with fusion (inferior ectopia type) was thus established.

Discussion

Crossed ectopia is more often seen on left side, as was the case in the present patient. In crossed fused ectopia the kidney is located on the opposite side from its ureteral orifice, and the crossed kidney usually lies inferior to the normal kidney. The various fusion anomalies are designated as (i) unilateral fused kidney with inferior

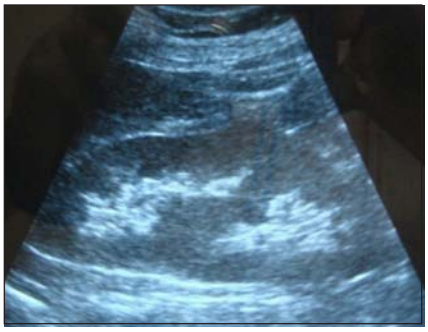

Fig 1. Longitudinal USG Image reveals a Large Unilateral Fused Kidney (left side)

Fig 2. Intravenous Pyelography (15 minutes) Film Reveals Fused Kidney on Left Side with no Nephrogram on right side. Ureter of the Upper Moiety (Left Kidney) Draining in to Bladder on Left Side and Ureter Draining the Lower Moiety Draining the Lower Kidney on Left Side with no Nephrogram on Right Side. Ureter of the Upper Moiety (Left kidney) Draining in to Bladder on Left Side and Ureter Draining the Lower Moiety Draining the Lower Moiety(Embryologically Right Kidney) Draining in to Bladder on Right Side After Crossing Midline

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ectopia (ii) sigmoid or S shaped kidney;(iii) lump or cake;(iv)L-shaped or tandem ; (v) disc, shield, or doughnut; and (vi) unilateral fused kidneys with superior ectopia (3). This classification lends some order to an understanding of the embryology of renal ascent and rotation. Although the the first case of crossed ectopia was described by Pamaroulus in the year 1654 A.D., yet the complete embryology of this entity was understood in later part of 2oth century (3). Fusion of a crossed ectopic kidney is related to the time when it comes in contact with its mate and the crossed kidney usually lies caudal to its normal counterpart on that side. Ascent of the ectopic renal unit probably lags behind because of crossover time although migration of each kidney begins simultaneously. This results in joining of the superior pole of ectopic kidney with the inferior aspect of the normal kidney (3). Further Ascent or migration of the fused kidneys continues until the uncrossed kidney reaches its normal location or one of the retroperitoneal structures prevents further migration. The extent of fusion and rotation usually decides the final shape of the fused kidneys (3). A medially positioned renal pelvis always indicates that fusion occurred after rotation whereas anteriorly placed pelvis suggests fusion occurred before rotation (3).Inferior Ectopia is seen in more than two third of unilaterally fused kidneys. The upper pole of the crossed kidney is attached to the inferior aspect of the normally positioned mate. The occurrence of an associated anomaly in crossed renal ectopia, excluding solitary renal ectopia is low (1-6). The most frequent anomalies associated with crossed ectopia are imperforate anus (4%), skeletal abnormalities (4%), and septal cardiovascular defects(3) . Associations of crossed ectopia with obstruction urolithiasis, infection, hypospadia, cryptochidism, urethral valves, multicystic dysplasia have also been observed (3). Most of the presenting symptoms of crossed renal ectopia are nonspecific and most cases remain asymptomatic through their life and are diagnosed incidentally (3, 7-9). It is important to be aware of presence and association of crossed renal ectopia to avoid iatrogenic injuries to the kidneys and/or the ureters during abdominal & pelvic surgeries (5,7,10).Renal ultrasonography is good radiological modality to demonstrate the presence of fused ectopia (6,7,8, 10,11).The sonographic examination usually reveals absence of kidney in contralateral renal fossa or pelvis and fused kidneys on the ipsilateral side (with a anterior or posterior notch and different orientations of collecting systems) (6). Intravenous pyelography (IVP) reveals the absence of kidney on contralateral side and fused kidneys on the ipsilateral side (3,6,7,10). Additional information about origin, course and insertion of ureters is also provided by IVP. Renal Scintigrahy can also give information about the functioning of the kidneys (6). Computed Tomography (CT) provides good orientation about the anatomy of kidneys and can help in deciding the surgical approach (4, 5, 8, 10). Crossed ectopia with fusion is now considered a predisposing factor for obstruction, infection (rarely reflux nephropathy) and many neoplasms of the urinary system (Renal cell carcinoma, transitional cell carcinoma and Wilm's tumour,), therefore imaging studies have presently become very important for the evaluation of such cases (4,10,12).

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