(Refer to page 381)

Answer: Horseshoe kidney

During normal embryological development the kidneys rotate in such a way that the ureters leave the kidney from its medial aspect and the axes of the kidneys diverge. This results in one kidney on either side of the retroperitoneum, with a single ureter connecting to the urinary bladder. However, a number of congenital renal fusion anomalies may occur, including the horseshoe kidney. In the vast majority of cases the fusion occurs between the lower poles of the kidneys. [1] The connecting tissue, termed the isthmus, may be either fibrosis or functioning renal parenchymal tissue.

A horseshoe kidney is the commonest of all renal fusion anomalies. The incidence is approximately 1:400. It is nearly always sporadic, with a few uncommon syndromic associations, such as trisomy 13, 18 and 21.

Typical associations include preponderance to calculi formation, pelvis ureteric junction (PUJ) obstruction, recurrent infection, injury during trauma and malignancy. The incidence of both Wilms tumour and transitional cell carcinoma of the renal pelvis are greater in a horseshoe kidney. [2]

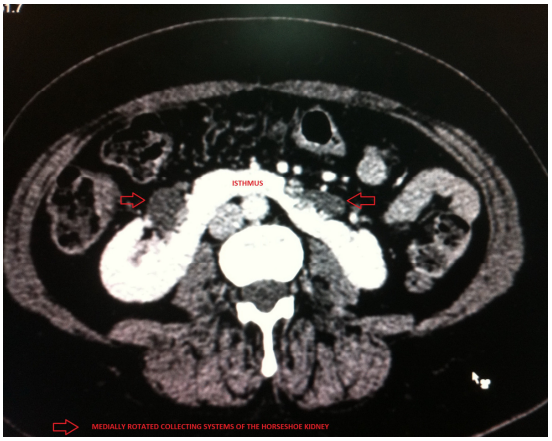

Fig. Axial CT showing the malrotation of the renal pelvis of the kidneys (arrows) and substantial isthmus

Computed tomography scan is the most reliable imaging method of assessing for congenital renal anomalies, although magnetic resonance imaging (MRI), catheter angiography and micturating cysto-urethrogram (MCUG) may play a role or be the first modality on which the diagnosis was identified. [3]

No treatment is required for a horseshoe kidney and in fact, their presence is often identified incidentally in adulthood. However, one must be aware of the associations with this fusion anomaly and be cautious if surgical intervention, such as percutaneous nephrolithotomy (PCNL) is to be performed.

REFERENCES

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