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CASE REPORT

HORSE SHOE KIDNEY WITH BILATERAL STAGHORN CALCULUS: A RARE PRESENTATION

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ABSTRACT: Horseshoe kidney (HSK) is the most common renal anomalies. Bilateral staghorn calculi in HSK are rare and management is challenging. Anatomic consideration is important in choosing treatment modality. We report a case of bilateral staghorn calculus and its management. We report a case of bilateral staghorn calculus due to its rarity and challenge associated with its management.
KEYWORDS: Horseshoe kidney, staghorn calculi.

INTRODUCTION: Horseshoe kidney (HSK) is most common of renal fusion anomalies. HSK is associated with genitourinary anomalies such as hypospadias, undescended testis, pelviureteric junction obstruction, ureterocele etc. Stone formation is common in horseshoe kidney, but bilateral staghorn calculi are rare. Metabolic defect leading to stone formation in HSK are hypovolemia, hypercalciuria and hypocitraturia. Management of bilateral staghorn horseshoe kidney, stag horn calculi is challenging.

CASE REPORT: An eighteen year male presented with bilateral flank pain off and on for last 2 years associated with dysuria and hematuria since one month. Physical examination revealed no abnormalities. Urinalysis showed hematuria and pyuria but no growth in culture and sensitivity. Hematological and biochemical profile including renal function test was normal. Excretory urography showed normal horse shoe kidney with staghorn stone in both moieties along with hydronephrosis (figure 1, 2). The patient underwent open pyelonephrolithotomy on right side followed by left Pyelonephrolithotomy after one month (figure 3). In post-operative course three units of blood was transfused and small residual stone on left side was managed with ESWL.

DISCUSSION: Most common of all renal fusion anomalies, horse shoe kidney has been reported in 0.25% of the population. Mostly asymptomatic but most commonest complication of horseshoe kidney is urolithiasis with an incidence of 20-60%.[1,2] The association of horseshoe kidney with staghorn calculus is rare.[3,4] Though stone management in horseshoe kidney is challenging but percutaneous nephrolithotomy (PCNL) has established as procedure of choice with maximal stone clearance rate.[5] In a study in 16 patient with stone in horse shoe kidney there was 93% stone clearance with minimal complication.[6] Anatomic consideration such as aberrant vasculature adjacent bowel, medial location and pelvicalyceal architecture must be considered in choosing treatment modality.[7] In series of 37 patient with renal calculi in horse shoe kidney which include three staghorn stone, Raj et al concluded PCNL is an effective means of kidney stone management in this complex patient population.[8] However, PCNL is technically challenging, usually requiring upper pole access and flexible nephroscopy due to altered anatomical relationships of the fused renal units. But there

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are studies which have reported lower stone free rate after PCNL in comparison to open pyelonephrolithotomy patient with staghorn calculi in horse shoe kidney was 44 times more likely to have lower stone free rate after PCNL than a patient without staghorn calculi in horse shoe kidney.[9]

The present case was managed by open surgery rather than PCNL due to surgeon preference but in the end result was satisfactory with almost complete stone clearance without any complications. Therefore open surgery still has a role in the management of horse shoe kidney with staghorn calculi as and when indicated.

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Fig. 1: X-Ray KUB showed bilateral staghorn calculi

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Fig. 2: Intravenous pyelography revealed horseshoe kidney with functioning moiety

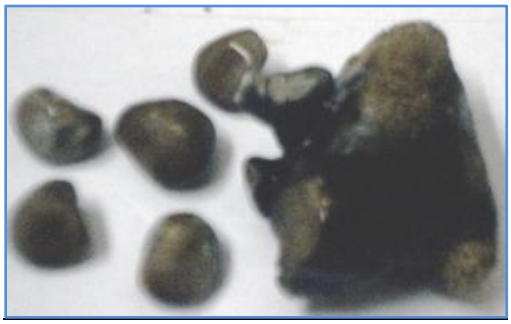

Fig. 3: Multiple calculi retrieved during surgery

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