

Staghorn Calculus with Duplex Pelvicalyceal System

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Abstract: Duplex pelvicalyceal system is characterised by presence of two separate pelvicalyceal system with complete or incomplete duplication of ureter. It is seen in 1% of adult population. 75 year old male patient presented with right sided intermittent colicky pain in flank since 1 year. History of recurrent episodes of urinary tract infection in the past 1 year. Tenderness present in right lumbar region on bimanual palpation. Large staghorn calculus of size 1.9× 1.4× 2.4cm seen in lower moiety of the right sided pelvicalyceal system with moderate hydronephrosis on CECT abdomen +pelvis. Evidence of large staghorn calculus in lower moiety of duplex pelvicalyceal system intraoperatively. Pyelolithotomy with D-J Stenting with Pyeloureterostomy. In patients with Duplex pelvicalyceal system, increased chances vesicoureteric reflux, ureteroureteric reflux which leads to increased chances of stone formation particularly in lower moiety of duplex pelvicalyceal system.

Keywords: Duplex pelvicalyceal system, lower moiety, moderate hydronephrosis, Large staghorn calculus, Pyelolithotomy, D-J Stenting with Pyeloureterostomy, vesicoureteric reflux

1. Introduction

Duplex pelvicalyceal system is characterised by presence of two separate pelvicalyceal system with complete or incomplete duplication of ureter. It is seen in 1% of adult population.

2. Case

- **Present history:** 75 year old male patient presented with right sided intermittent colicky pain in flank since 1 year.
- **Past history:** History of recurrent episodes of urinary tract infection in the past 1 year associated with non obstructing bilateral renal calculus since 8 months.
- **Examination:** Conscious oriented. P-88/min, BP-130/90mmhg Tenderness present in right lumbar region on bimanual palpation.

3. Investigation

- **ULTRASOUND:** A Single large echo reflective calculus approximately 2cm×2cm with acoustic shadowing seen in lower pole of right pelvi ureteric junction with multiple echo reflective calculi of size 3 to 4mm.
- **CECT abdomen +pelvis:** Large staghorn calculus of size 1.9× 1.4× 2.4cm seen in lower moiety of the right sided pelvicalyceal system with moderate hydronephrosis.

4. Management

Surgery: Evidence of large staghorn calculus in lower moiety of duplex pelvicalyceal system. *Open Pyelolithotomy with D-J Stenting with Pyeloureterostomy (reconstruction of duplex pelvicalyceal system done).

5. Discussion

Staghorn calculus also referred as coral calculus. Seen more commonly in patients with recurrent urinary tract infection,

renal tract anomalies, spinal cord injuries, ileal ureteric diversion etc. It is composed of calcium-ammonium-magnesium phosphate. Duplex pelvicalyceal system seen in 1% of adult population. It occurs as an autosomal dominant inheritance. In patients with this there is increased chances. In patients with this there is increased chances vesicoureteric reflux, ureteroureteric reflux which leads to increased chances of stone formation particularly in lower moiety of duplex pelvicalyceal system.

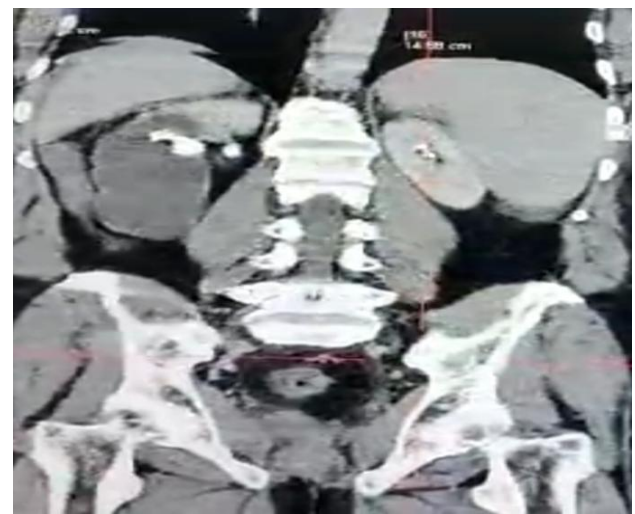


Figure: Showing right renal calculus in lower moiety of duplex pelvicalyceal system with hydronephrosis



Figure: Showing common ureteric channel of right duplex pelvicalyceal system

abnormalities and a bifid pelvicalyceal collecting system: a family study. Br. J Urol.1977 Apr; 49 (2): 97-107.



Figure: Showing intra-operative pic of duplex pelvicalyceal system with D-J stent



Figure: Showing Staghorn Calculus

6. Conclusion

So we conclude that there is increased risk of renal calculi formation in patients with renal tract anomalies compared to normal healthy adult population

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