

Kidney stone in a patient with a horseshoe kidney and cutaneous ureterostomy

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Abstract: *The horseshoe kidney is a rare anatomical anomaly. It is a major source of stone formation and urinary tract infection, and flexible ureteroscopy is of great value in treating these stones. We report here the case of a 62-year-old patient with a history of stented ischaemic heart disease, arterial hypertension, spina bifida with dorsolumbar scoliosis and lumbosacral meningocele, surgery for a retentionist bladder with placement of a cutaneous ureterostomy on a single right kidney during childhood, Follow-up in urology for mono J catheter change every year and follow-up for chronic renal failure. A CT scan revealed a 13 mm ureteral calculus with upstream ureteropyelocal dilatation in a horseshoe kidney. The patient underwent flexible ureterorenoscopy with fragmentation of the stone.*

Keywords : Horseshoe Kidney, Renal Failure, Ureteropyelocal Dilatation.

INTRODUCTION

The horseshoe kidney is a malformation of the upper urinary tract in which the kidney is U-shaped. This appearance most often results from the fusion of the lower poles of the right and left kidneys on the midline. The horseshoe-shaped kidney is located very low in the abdominal cavity. The horseshoe kidney may be an isolated anomaly or part of a more complex malformative syndrome. More than 30% of patients remain asymptomatic throughout their lives and this anatomical feature is discovered by chance during a radiological examination. The horseshoe-shaped kidney can lead to pyelonephritis and renal lithiasis, which may be accompanied by dilatation of the urinary tract or vesico-ureteral reflux. [1]

Key words: Horseshoe kidney, renal failure, ureteropyelocal dilatation.

OBSERVATION

This is a 62-year-old patient with a history of ischaemic stented heart disease, arterial hypertension, spina bifida with dorsolumbar scoliosis with lumbosacral meningocele, allergy to latex and furadantine, recurrent urinary tract infection and surgery for a retentionist bladder with placement of a cutaneous ureterostomy on the right single kidney during childhood.

Follow-up in urology for replacement of a single catheter every year, followed by nephrology for moderate chronic renal failure with creatinine clearance of around 45 ml/min under supervision. The patient had recently been admitted to the nephrology department for acute renal failure with a chronic background, with creatinine levels of 226 µmol per litre and creatinine clearance of 25 ml/min. The infectious disease work-up was negative.

The CT scan requested by the nephrologists revealed a 13 mm ureteral calculus with upstream ureteropyelocal dilatation on a horseshoe-shaped kidney.

The patient underwent flexible ureterorenoscopy with fragmentation of the stone using a fibre laser, with the following parameters: Energy 1.2J, Frequency 20 HZ, Power 24W; extraction of all the stone fragments using the dormia forceps; a mono J catheter was inserted at the end of the procedure. (Figures 1,2,3,4)

The follow-up showed an improvement in renal function, with creatinine levels at 130 µmol per litre and creatinine clearance at 44 ml/min. Diuresis averaged 1500ml/24h.



Figure 1: Placement of access sheath with introduction of flexible ureterorenoscopy.



Figure 2: Fragmentation of the calculation using laser fibre.

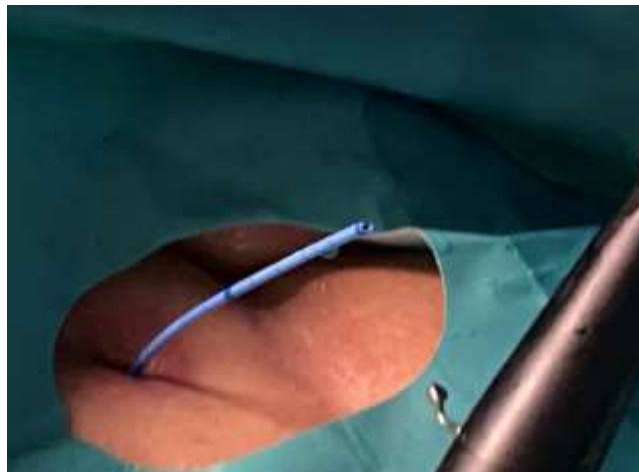


Figure 3: Placement of mono J probe after the end of the operation.



Figure 4: Optical check of correct positioning of the mono J probe at the end of the operation.

DISCUSSION

The horseshoe kidney is a rare anatomical anomaly. The ectopic position of the kidney and the high insertion of the ureters represent a management challenge. The development of holmium-YAG laser lithotripsy, improvements in active deflection, and the miniaturisation of flexible ureterorenoscopy (USSR) have made it possible to treat lithiasis in this situation. [2] URSS has benefited from enormous technical progress, and today this technique is a validated option for the treatment of certain kidney stones, with a success rate of 85-90% [3].

CONCLUSION

The USSR combined with the holmium laser is a highly effective minimally invasive endo-urolological technique, which can be proposed as one of the modalities for treating stones on horseshoe-shaped kidneys. The results obtained appear to be comparable to those of NLPC for small-volume stones (< 15 mm), with a low complication rate and a short hospital stay.

REFERENCES

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