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# A case report of knotting of DJ stent

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## ABSTRACT

*The insertion of an indwelling ureteric stent is a routine procedure in urology.Complication secondary to these stents are common like recurrent UTI, stone formation. Knot formation within the urinary system is an extremely rare condition with less than 15 cases reported in literature.Nineteen year old female patient admitted with complaint of pain in right loin, radiating to groin and burning micturition for 6 months off and on.A plain KUB radiograph, Ultrasonography, IVP revealed a staghorn calculus of 3 cm with three calculi of 10 mm in right pelvicalyceal system with hydroureter and hydronephrosis.Open right pyelolithotomy with double J stenting was done. On 1st postoperative day, knotted DJ stent was detected in plain radiograph. Patient's CT urography revealed coiled up stent in dilated urinary system. One tip was in lower calyx and the other tip was in midureter with knotting at lower end. Early diagnosis of knotted stent and timely intervention via minimal access instruments like ureteroscopy can prevent major and fatal complication like urosepsis and renal shutdown.No guidelines exist for successful management of knotted stent. Under spinal anaesthesia, in the lithotomy position a guidewire was inserted in the ureter. An 8f rigid ureterosope was advanced; the stent end was grasped with basket and progressively extracted under direct vision as well as via guidance with basket IITV. By gentle continuous traction, the stent was slowly pulled until complete stent was removed. Any ureteral injury was excluded via dye injection. On the first postoperative day, patient was discharged without any complication.*

**Introduction:**

The insertion of an indwelling ureteric stent is a routine procedure in urology. Many different ureteral stent configurations are available, including single-J, double-J, and multilength stents. Complication secondary to these stents are common like recurrent UTI, stone formation. Knot formation within the urinary system is an extremely rare condition with less than 15 cases reported in literature.[1] First case report on knotted stent in literature was by Groeneveld[2]. Corbett et al[3] and Flame et al[4]reported two cases, a 4 year girl and 86 year old patient, respectively. Quek et al[4], reported a case in which the knot was formed in the middle of the stent and Eisner et al[5], depicted a patient who had two separate knots at both ends.

**Case report:**

Nineteen year old female patient admitted with complaint of pain in right loin, radiating to groin and burning micturition for 6 months off and on. The symptoms were more intense for last 15 days. A plain KUB radiograph, Ultrasonography, IVP revealed a staghorn calculus of 3 cm with three calculi of 10 mm in right pelvicalyceal system with hydroureter and hydronephrosis. The routine investigations were within normal limits. Open right pyelolithotomy with double J stenting was done. On 1st postoperative day, knotted DJ stent was detected in plain radiograph. Post operative events were unremarkable. Patient was followed up weekly upto one month and then readmitted. Renal function test and urine culture report were normal. Patient's CT urography revealed coiled up stent in dilated urinary system. One tip was in lower calyx and the other tip was in midureter with knotting at lower end ( fig 1). Under spinal anaesthesia, in the lithotomy position a guidewire was inserted in the ureter. An 8f rigid ureterosope was advanced, the stent end was grasped with basket and progressively extracted under direct vision as well as via guidance with basket IITV. By gentle continuous traction, the stent was slowly pulled until complete stent was removed. Any ureteral injury was excluded via dye injection. On the first postoperative day, patient was discharged without any complication.

**Conclusion:**

No guidelines exist for successful management of knotted stent. Sometimes, the stent may knot inside the ureter, representing a therapeutic challenge with the potential risk of avulsion. Various methods of treatment like combination of retrograde ureteroscopy with continuous traction[6],holmium laser to break center of knot[9], percutaneous removal[7,8], failure of which needs open surgery for retrieval of knotted stent. Early diagnosis of knotted stent and timely intervention via minimal access instruments like ureteroscopy can prevent major and fatal complication like urosepsis and renal shutdown.

**Figure 1**

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