

## AB096. Cause analysis of double J tube retention and the study of endoscopic minimally invasive management

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**Background:** To analyze the common causes of double J tube retention and to explore the safety and effectiveness of endoscopic minimally invasive management of double J tube retention.

**Methods:** The clinical data of 34 patients with difficult extubation of double J tube under conventional cystoscope from November 2012 to March 2018 in our center were retrospectively analyzed, including 22 cases of double J tube indwelling in the operation of upper urinary calculi and 12 cases due to ureteral stenosis and obstruction. Patients were diagnosed as double J tube retention according to the medical history, combined with abdominal plain tablets (KUB) plain film, total abdominal CT and other imaging findings. Among them, double J tube was located in the left side of ureter in 15 cases, right side in 15 cases, bilateral in 4 cases, with an average retention time of 10.64 months (0.5 to 72 months). The minimally invasive endoscopic technique was performed alone or in combination with cystoscopy, ureteroscopy and percutaneous nephrolithotomy.

**Results:** Seventeen cases with peri-tube stone formation and 10 cases of double J tube displacement resulting in retention and difficulty in extubation. Four patients had

forgotten extubation after discharge. Two patients with severe urinary tract infection underwent stents replacement after anti infection treatment. One case of severe hematuria accompanied by bladder spasm led to failure of extubation. All stranded double J tubes were successfully removed, of which 14 cases were removed by ureteroscopy, 12 by cystoscopy or ureteroscopic lithotripsy, and 8 cases were removed by the combination of cystoscopy, ureteroscopy and percutaneous nephroscope. The average operation time was 68.5 minutes (14 to 275 minutes). No case was transferred to open surgery. Except for a small amount of hematuria, there were no severe complications such as ureteral perforation, laceration and nephrectomy. Two patients developed hyperthermia after operation and the body temperature returned to normal with active anti-infection treatment. Residual stones were found in 4 patients after operation. The average postoperative hospital stay was 2.7 days (1 to 12 days).

**Conclusions:** The peri-tube stone formation and displacement of double J tube after long term indwelling are the main reasons for the retention of double J tube. According to the patient's condition, it is safe and effective to remove the stranded double J tube through minimally invasive endoscopic technique alone or in combination with cystoscopy, ureteroscopy and percutaneous nephroscopy. Moreover, it is necessary to strengthen the management of patients with double J tube indwelling, so as to avoid double J tube being left behind.

**Keywords:** Double J tube; reasons for retention; difficulty in extubation; endoscopic minimally invasive management

doi: 10.21037/tau.2018.AB096

**Cite this abstract as:** Yang G, Zhou Y, Shen T, Tang C, Yi X, Dong J, Zhang Z, Zhou W. Cause analysis of double J tube retention and the study of endoscopic minimally invasive management. *Transl Androl Urol* 2018;7(Suppl 5):AB096. doi: 10.21037/tau.2018.AB096