

The tubeless percutaneous nephrolithotomy – Advantages and safety

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Introduction: Tubeless percutaneous nephron-lithotomy (PCNL) represents an alternative technique to the standart PCNL that replaces the nephrostomy tube with the internal ureteral drainage. Hereby was evaluated and compared the results of tubeless PCNL versus standart PCNL.

Methods: A retrospective study was performed on 89 patients with pyelocalyceal lithiasis that underwent percutaneous nephrolithotomy between January 2007 - March 2010 in urological department. Patients were divided in two groups and the results were compared: 40 patients in which standard PCNL was performed and 49 patients who were offered tubeless PCNL. Were evaluated parameters such as calculus size, overall procedure duration, intra and postoperative bleeding, postoperative analgesia, "stone free" status and postoperative hospital stay. Study inclusion criteria: a single trajectory acces, absence of major perforation and bleeding, patient without complex branched stones and no need for a second look. Study exclusion criteria: more the one trajectory of PCNL, complex lithiasis, associated morbidity (cardiovascular diseases, chronic kidney diseases, pregnancy, etc.).

Results: In the group of patients that underwent tubeless PCNL: the mean stone burden of the calculus was 3,35 cm² ($\pm 0,67$), postoperative hemoglobin values drop on average with 1,85 g/dl ($\pm 0,80$), average postoperative hospital stay was 3,2 days ($\pm 1,02$), the average analgesics requirement was 241 \pm 22,9 mg ketoprofen intravenous (50 mg twice daily), patients returned to normal activity in 11 day ($\pm 1,65$). An 92,6% stone free rate was achieved. In the group of patients that underwent standard PCNL: the mean stone size was 4,63 cm² ($\pm 0,88$), mean postoperative hemoglobin drop was 2,4 g/dl ($\pm 0,76$), the mean lenght of postoperative hospital stay was 5,1 ($\pm 1,37$) days, there was a need for multimodal analgesia (343 \pm 32,3 mg ketoprofen associated with metamizol 1-2 phial/day), patients returned to normal activity in 16 days ($\pm 2,24$), an 90,3% stone free rate was achieved. The average duration of the surgical intervention was 49 minutes for the tubeless PCNL and 56 minutes for standard PCNL.

Conclusions: Tubeless PCNL is a safe and efficient alternative technique to standard PCNL that reduces the number of the hospitalization days, decreases the postoperative discomfort and the necessary of analgesic and may be used in selected cases. Both techniques were safe and effective for the management of renal calculi.