

The Efficacy and Safety of Tubeless Percutaneous Nephrolithotomy

Introduction and Objective: Tubeless percutaneous nephrolithotomy (PCNL) represents an alternative technique to the standard PCNL that replaces the nephrostomy tube with the internal ureteral drainage. Hereby we evaluate and compare the results of tubeless PCNL versus standard PCNL.

Materials and Methods: A retrospective study was performed on 467 patients with pyelocalyceal lithiasis that underwent percutaneous nephrolithotomy between January 2007 and March 2011. Patients were divided in two groups and the results were compared: 190 patients in which standard PCNL was performed and 277 patients who were offered tubeless PCNL.

Results: In the group of patients that underwent tubeless PCNL: the mean stone burden of the calculus was $3.35 \text{ cm}^2 (\pm 0.67)$, postoperative hemoglobin values drop on average with $1.85 \text{ g/dl } (\pm 0.80)$, average postoperative hospital stay was 3.2 days (± 1.02) , patients returned to normal activity in 11 days (± 1.65) . A 92.6% stone free rate was achieved. In the group of patients that underwent standard PCNL: the mean stone size was $4.63 \text{ cm}^2 (\pm 0.88)$, mean postoperator hemoglobin drop was $2.4 \text{ g/dl } (\pm 0.76)$, the mean length of postoperative hospital stay was 5.1 (± 1.37) days, patients returned to normal activity in 16 days (± 2.24) , an 90.3% stone free rate was achieved.

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.