

Safety and efficacy of Chinese minimally invasive percutaneous nephrolithotomy in the management of renal stones ≤ 2 cm: a single-center experience

Published : 12 November 2019

Abstract

Background

The goal for using smaller caliber instruments in PNL was to reduce the access-related complications and to decrease morbidity. The objective of this study was to evaluate the safety and efficacy of Chinese minimally invasive percutaneous nephrolithotomy (MIPNL) in the treatment of renal stones ≤ 20 mm.

Results

Sixty-seven patients completed the study protocol. The mean age was 41.10 ± 13.99 years (range 18–68 years). There were 43 (64%) male and 24 (36%) females. The mean stone size was ranged from 78.5 to 439.6 mm² (mean \pm SD 172.48 ± 69.54 mm²). The overall SFR was (82%). Twelve (18%) needed post-MIPNL auxiliary procedure, in the form of second MIPNL in 3 (4.5%) cases, SWL in 7 (10%), and RIRS in 2 (3%) cases. The intraoperative complication was present in four patients (5%) include bleeding necessitate blood transfusion in one patient (1.5%) and renal collecting system perforation 3 (4.5%). The postoperative complication was urine leakage 5 (7.5) and fever in 6 (9%) of patients.

Conclusion

Chinese MIPNL is safe and effective method for treatment of renal stone ≤ 20 mm size with satisfactory SFR and low complication rate when SWL failed or contraindicated. It is considered a feasible treatment alternative to standard PNL, in the absence of flexible URS or miniature nephroscope.