

Ureteroscopy-Assisted Retrograde Nephrostomy (UARN) for Percutaneous Nephrolithotomy (PCNL)

Introduction and Objective: To determine the impact of ureteroscopy-assisted retrograde nephrostomy (UARN) during percutaneous nephrolithotomy (PCNL).

Materials and Methods: From April 2009 to September 2011, a total of 50 patients underwent PCNL for large renal stones (stone burden > 2 cm). In these patients, we performed UARN in the Galdakao-modified Valdivia position for 27 patients (UARN PCNL) and ultrasonography-assisted percutaneous nephrostomy in prone position for 23 patients (prone PCNL).

Results: UARN PCNL significantly improved the stone-free rate (81.5% vs 52.2%) and rate of residual stones (< 4 mm, 92.6% vs 65.2%, $P < 0.05$). Median operation time was significantly shorter for UARN PCNL, at 160 min, compared to 299 min for prone PCNL ($P < 0.001$). There was one intraoperative complication in prone PCNL: hemorrhage resulted in stopping initial treatment, but was cured conservatively. Postoperative complications included high grade fever that persisted for 3 days in 2 UARN PCNL patients (7.4%) and 6 prone PCNL patients (26.1%). Clavien grading scores showed significantly lower postoperative complications for UARN PCNL compared to prone PCNL.

Conclusion: UARN facilitates a higher stone-free rate, shorter operating time, and fewer complications during PCNL.