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Medium-Term Stone Recurrence after zero-fragment transperitoneal Laparoscopic Pyelolithotomy Compared with Percutaneous Nephrolithotomy for Large Single Renal Pelvis Stones

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Abstract

Purpose: To compare medium-term stone recurrence between laparoscopic pyelolithotomy (LP) and .percutaneous nephrolithotomy (PCNL)

Material and methods: 98 patients who underwent PCNL or LP (2015-2019) for large single renal pelvis or staghorn stones (≥ 2 cm) were selected. The stone-free rate was evaluated using a computed tomography scan at one month and then, ultrasonography at six months intervals during the first year and annually thereafter for up to three years. Time-to-stone recurrence was compared .using the Kaplan-Meier estimate. Hazard ratio was estimated by Cox regression

Results: The one month stone-free rate was 93.88% in the LP group vs. 79% in the PCNL group (P = .03). The mean overall time-to-stone recurrence was 31 (CI:24-34) months in the LP vs. 28 (CI: 23-32) in the PCNL groups (P = .02). Cox regression analysis showed that PCNL increased the risk of stone recurrence with a hazard ratio of 2.3 (CI: 1.1 - 5.3) compared to the laparoscopy. (p = .03) In

subgroup analysis, time-to-stone recurrence in those without previous history of intervention was estimated at 31 (CI: 27 to 35) months in the LP vs. 25 (CI:16 to 34) in PCNL groups (= 0.04). Subanalysis with a BMI cutoff of 25 kg/m2 showed an overall time-to-stone recurrence of 34 (CI:30 to 37) months in the LP group and 28 (CI:22 to 33) months in the PCNL group (= 0.04) in those with .BMI higher than 25 kg/m2

Conclusion: Medium-term time to stone recurrence was in favor of LP compared with PCNL for large .single renal pelvis or staghorn stones

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