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Retrograde intrarenal surgery for urinary stone disease in patients with solitary kidney: A retrospective analysis of the efficacy and safety

Shinnosuke Kuroda

Yokohama City University Medical Center, Japan

Objectives: To compare outcomes of retrograde intrarenal surgery for urolithiasis between patients with solitary kidneys and patients who have single-side urolithiasis with bilateral kidneys.

Methods: We retrospectively analyzed outcomes of retrograde intrarenal surgery in solitary kidney patients (group A) carried out during 2007-2014 and in patients with bilateral kidneys with comparable stone burdens (group B). Stone-free status was defined as no residual fragment on computed tomography 1 month later.

Results: There were 19 patients in group A (mean age 62.5 ± 18.4 years, range 14-76 years). The mean stone diameter and burden were 6.0 mm (range 3-24 mm) and 10.42 ± 6.92 mm, respectively. The stone-free rate was 94.7% and no repeat procedure was required. The glomerular filtration rate tended to rise post-surgery (postoperative day-1: 48.67 ± 15.92 mL/min, 100.2%, $P=0.940$; postoperative month-1: 51.32 ± 16.90 mL/min, 105.7%, $P=0.101$) compared with preoperative rates. The stone-free rate and surgery time were not significantly different between the two groups, although post-surgical hospitalization time was longer for group A (4.05 vs. 3.08 days, $P=0.037$). The change in glomerular filtration rate was not significantly different between groups A and B (postoperative day-1: $+0.101$ vs. $+0.547$ mL/min, respectively, $P=0.857$; postoperative month-1: $+2.749$ vs. 3.161 mL/min, respectively, $P=0.882$). No significant difference was found in terms of complication rate.

Conclusions: Retrograde intrarenal surgery in solitary kidney patients is as safe and effective as in bilateral kidney patients.

Biography

Shinnosuke Kuroda has completed his graduation from Yokohama City University School of Medicine. He has worked at Ohguchi Higashi General Hospital in Japan from 2014 to 2015. He has published more than 10 papers about male infertility and urolithiasis.

shinnosuke_1014@yahoo.co.jp

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