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Urolithiasis in renal transplantation recipients

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Objectives: Urinary stone formation is a rare complication in renal transplantation recipients. Unlike general population, the diagnosis is likely to be delayed due to graft denervation. And urolithiasis could lead to graft failure. In this study, we aimed to identify the incidence of urolithiasis and their characteristics.

Methods: We retrospectively studied 1366 renal transplantation recipients who underwent transplantation surgery at Seoul St. Mary's Hospital between January 2009 and December 2018. By medical record review, patients who were treated for urolithiasis were enrolled.

Results: During study period, there were 12 patients who were diagnosed with symptomatic urolithiasis with functioning allograft. Overall incidence was 0.87%. Mean age of diagnosis was 53.4 years. Of 12 patients, 9 patient were males. 8 patients received transplantation from live donors (66.7%). Mean duration from transplantation to diagnosis of urolithiasis was 19 months. Stone composition study was performed in 7 patients. Common composition of stones was uric acid stone (5 patients, 41.6% and 4 of them were mixed with calcium based stone). The other patients revealed calcium oxalate stone and struvite stone. In 5 patients, stone passed through after ESWL. And 5 patients received ureteroscopic removal procedure. 1 patient experience spontaneous stone passage and the other patient required cystoscopic stone removal because of large size of stone. Mean time from diagnosis to treatment was 9.8 days. No significant differences were observed between mean estimated glomerular filtration rate before and after treatment ($p=0.071$).

Conclusions: Urinary stone formation in renal transplantation recipients is a rare complication (0.87%). Prompt diagnosis and treatment, and stone-preventive management can prevent adverse effects on renal graft outcome.