

Renal Auto Transplantation and Pyelovesicostomy for Intractable Metabolic Stone Disease

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Introduction: Auto transplantation with pyelovesicostomy is an alternative solution for patients with a heavy metabolic stone burden who may be dependent on narcotics, and need frequent urologic interventions. The natural history of these metabolic stone problems is associated with frequent urinary tract infections and a decline in renal function over time.

Methods: Auto transplantation and pyelovesicostomy were done for six kidneys in four patients with cystinuria (n=5) and uric acid stones (n=1). 5 kidneys with stone burden at the time of surgery that needed bench extraction of residual stones. All patients had a nephrostomy and Foley placed after the procedure. Mean age of 29.6 years old. There were 3 female and 1 male patients. 2 of the female patients have both kidneys treated. All were Caucasians. All patients have prior stone treatments with a mean treatment (which include ESWL and J insertion) of 3-4/year. 2 of the patients have 2-3 episodes of UTI per year which doesn't require hospitalization. All patients have been on narcotics, number with prior ESWL and tubes. Preoperatively the patients had a Serum creatinine mean of 1.08ug/ml (0.7-1.4) and eGFR (aMDRD) 69.75ml/min (59.2-100)

Results: All six kidneys were successfully auto transplanted through 1 midline incisions. Mean follow up of 26 months (12-60 mos) with mean cold ischemia time of 4 hours and 7 minutes. 5 kidneys had a single artery and single vein. Mean hospital stay was 6.3 days. All patients continued to pass stone debris. Only 1 patient on one kidney needed one intervention in one year. All patients were weaned off narcotics by 8 weeks. The same 2 patients continue to experienced UTI but with decrease episode to about 1 per year, of which none require hospitalization. There was no new onset Hypertension. There were no post-operative complications. Serum creatinine were 1, 0.9, and 1.1 mg/dl at 6, 12, 24 months respectively. Mean eGFR were 77.3, 75.1 and 63.25 ml/min at 6, 12, 24 months.

Conclusion: With Careful selection, renal auto transplantation with pyelovesicostomy is a reasonable option for patients with metabolic stone burden; which preserves renal

function and improves the quality of life by reducing the frequency of subsequent clinical stone events and the requirement for narcotics. Stone Passage continues to occur after pyelovesicostomy. However, it often consists of small granules that are passed spontaneously and cause few symptoms.