

Surgical and Functional Outcomes of Repeat Partial Nephrectomy on a Solitary Kidney

Introduction and Objectives: Local recurrence of renal cancer after partial nephrectomy is 2-3%. When it does recur, radical nephrectomy is performed in almost all cases because difficulties can be encountered with all aspects of reoperative surgery. However, patients with only a solitary kidney would have to go on hemodialysis if they lose that kidney, unless the kidney and kidney function can be preserved by repeat partial nephrectomy. We examined outcomes in patients with repeat partial nephrectomy on a solitary kidney.

Materials and Methods: Until March 2011, 460 patients with renal tumors underwent partial nephrectomy in our department. Of these patients, the seven who underwent repeat partial nephrectomy on a solitary kidney are the subjects of this study.

Results: The study group of five men and two women, with a mean age of 67 years (range 52 to 79) was followed from the first partial nephrectomy to recurrence. It took a mean time of 33 months (range 19 to 149) for the tumors to recur. All of these recurrence tumors had developed from the same excision locality as the previous time. The median tumor diameter was 17 mm (range 14 to 30). Median estimated blood loss was 220 ml (range 40 to 2785) and median operating time was 200 minutes (range 156 to 440). Renal hilar clamping for renal ischemia and surface hypothermia with ice slush during tumor dissections was performed in six patients with a median cold ischemia time of 59 minutes (range 21 to 90). The mean serum creatinin level three months after surgery was 1.48mg/dl (range 1.05 to 2.02). Renal function was preserved in all cases. Postoperative complications occurred in two patients, including one urinary tract infection and one acute tubular necrosis. Patients were discharged from hospital after a median postoperative period of seven days (range 5 to 17).

Conclusions: Repeat partial nephrectomy is technically feasible. Performing a repeat partial nephrectomy rather than a radical nephrectomy may have many health benefits for patients with a solitary kidney, because most patients retained sufficient function to avoid hemodialysis. We think that repeat partial nephrectomy is technically challenging but is associated with better functional and oncological outcomes.