IL3: 招請講演 3

LAPAROSCOPIC VERSUS OPEN PARTIAL NEPHRECTOMY IN 200 CASES

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Purpose: Laparoscopic partial nephrectomy is emerging as a promising minimally invasive approach for nephron-sparing surgery. We compare the perioperative outcomes and short-term follow up following laparoscopic and contemporary open partial nephrectomy for renal tumor at a single institution.

Materials and Methods: Since 1999, 200 patients underwent partial nephrectomy for renal tumor at the Cleveland Clinic by either laparoscopic (N = 100) or open surgical (N = 100) techniques. All consecutive patients with a solitary renal tumor up to 7cm in size who were candidates for nephron-sparing surgery were included in this retrospective comparison. Since our laparoscopic technique was based on our established open technique, both surgical techniques were similar: transient renal hilar vascular control, renal surface hypothermia (if necessary), tumor excision with an adequate margin, pelvicalyceal suture-repair (if necessary), control of transected intrarenal blood vessels with specific suture-ligatures, and suture-repair of the renal parenchymal defect over a bolster. Demographic, intraoperative, postoperative, and short-term follow-up data were retrospectively compared between the 2 groups.

Results: Median tumor size was 2.8cm in the laparoscopic group and 3.3cm in the open group (p = 0.005). In the laparoscopic and open groups, the location of the tumor was peripheral in 66% and 67% of cases, and in 35% and 33% of cases, respectively (p = 0.83). In the laparoscopic and open groups, the indication for partial nephrectomy was elective in 59% and 46% of cases, and imperative in 41% and 54% of cases, respectively (p = 0.001). Comparing the laparoscopic versus open groups, median surgical time was 3 hrs. vs. 3.9 hrs. (p < 0.001), and blood loss was 125 ml vs. 250 ml (p < 0.001). Pelvicalyceal suture-repair was done in 67% of patients in the laparoscopic group. Mean warm ischemia time was 28 min. vs. 18 min. (p < 0.001). In the laparoscopic and open groups, median analgesic requirement was 20.2mg morphine sulfate equivalent vs. 252.5mg (p < 0.001), hospital stay was 2 days vs. 5 days (p < 0.001), and convalescence averaged 4 weeks vs. 6 weeks (p < 0.001). Overall, complications occurred in 29 patients in the laparoscopic group and 30 patients in the open group (p = 0.55). Median preoperative serum creatinine (1.0 mg/dL vs. 1.0 mg/dL) and postoperative serum creatinine (1.2 mg/dL vs. 1.1 mg/dL) were similar between the groups (p = 0.99). Pathology confirmed renal cell carcinoma in 75% of patients in the laparoscopic group and 85% in the open group (p = 0.003). The parenchymal margin of resection was positive in 2 laparoscopic cases and no open cases (p = 0.11): median width of margin was 4mm in each group (p = 0.11). Over a median follow-up of 5.9 months in the laparoscopic group and 1.6 months in the open group (p < 0.001), no patient developed a local or port-site recurrence. No kidney was lost due to warm ischemic injury in this study.

Conclusion: Open surgical partial nephrectomy is the established standard for nephron-sparing surgery. Our data suggest that laparoscopic partial nephrectomy is emerging as an equally efficacious cancer operation, albeit with decreased patient morbidity. Although an advanced procedure, laparoscopic partial nephrectomy, with increasing experience, can be safely and efficaciously applied to various renal tumors, even those deeply infiltrating the renal parenchyma.