Fibrin glue v sutured bolster: lessons learned during 100 laparoscopic partial nephrectomies.

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Abstract:

PURPOSE: Laparoscopic partial nephrectomy (LPN) is performed with marked technical variations. We defined the limits of sutureless LPN and determined which closure technique is best in a particular situation.

MATERIALS AND METHODS: During 100 consecutive LPNs fibrin glue products were used for closure in the first 75 (group 1) and sutured bolsters were applied when the collecting system (CS) or renal sinus was entered in the final 25 (group 2).

RESULTS: In groups 1 and 2 hand assisted laparoscopy was used in 72% vs 40% of cases and hilar clamping was used in 27% vs 92%, respectively. Mean tumor size was 25 vs 26 mm, tumor depth was 11 vs 13 mm, distance to the renal sinus was 9 vs 5 mm, operating room time was 185 vs 210 minutes, estimated blood loss was 398 vs 247 cc and hospital stay was 2.9 vs 2.6 days in groups 1 and 2, respectively. Overall postoperative hemorrhage and urine leakage occurred in 9% and 2% of patients, respectively. Tumors associated with postoperative hemorrhage/leakage tended to be larger (35 vs 24 mm, $p = 0.007$) and closer to the renal sinus (0.5 vs 8.2 mm, $p = 0.02$). Postoperative hemorrhage or urine leakage occurred in 41% of the 17 patients in group 1 with CS or renal sinus entry but in only 2 of the 58 (3.4%) without entry ($p < 0.0001$). In group 2 hemorrhage/leakage occurred in 11% of the 18 patients with CS or renal sinus entry (vs same subset in group 1, $p = 0.04$).

CONCLUSIONS: LPN with closure using fibrin glue products provides adequate hemostasis when the CS or renal sinus is not entered. When the CS or renal sinus is entered, a sutured bolster is recommended.