Feasibility of Felt Pledgets Application for Renorrhaphy after Laparoscopic Partial Nephrectomy

Introduction and Objective: Laparoscopic partial nephrectomy (LPN) has become a well-established treatment for selected renal malignancies. The objective of our study was to explore the feasibility of the application of haemostatic pledgets during renorrhaphy after LPN and evaluate its efficacy.
Materials and Methods: Between 2010 and 2011, 42 patients underwent LPN as a treatment for renal tumors. Tumor size and location was assessed by contrast enhanced CT scan. All procedures were performed by a single surgeon. According to the surgeon's preference, robotic assistance was used for 4 of the cases. LPN was performed with cold scissors and a Maryland dissector, using ultrasound assistance to evaluate tumor depth. During renorrhaphy, a rolled tabotamp was placed on the tumor bed; 2/0 Vycril sutures, secured with 5mm Hem-o-lok clips, were used to perform the renorrhaphy. There were 7,9x7,9mm (5/16"x5/16") felt pledgets (BARD) placed between the Hem-o-lok clips and the renal parenchyma on both needle entrance sites, in order to limit cortical bleeding. Warm ischemia time (w.i.t.), estimated blood loss (EBL), OR time, post-operative complications and hospital stay were recorded.
Results: Patient and tumor characteristics are described in table 1. Mean w.i.t. was 21±5min, mean OR time 151±52min, while EBL was 162±56cc. Surgical complications were recorded in 11/42 (26%; Clavien-Dindo classification: II-III). Three patients experienced post-operative ileus, 3 had a urinary leakage, 1 a wound infection and 4 tumor bed bleeding: of these, 2 required blood transfusions, 1 was managed by embolization and 1 underwent nephrectomy. Mean length of stay was 2 days.
Conclusion: In our experience, the application of haemostatic felt pledgets during renorrhaphy after LPN is feasible and safe. This technique may reduce cortical bleeding; therefore, it could ameliorate surgical outcomes and reduce complications of LPN. Further studies are needed to confirm our findings.

Table 1

Number of patients M F	42 31 11
Age (yrs) (Mean ± SD)	65 ± 10
Creatinine (mg/dL) (Mean ± SD)	1.19 ± 0.53
ASA Score 1 2 3	 9 28 5
Tumor size (cm) (Mean ± SD)	2.9 ± 1.1
Tumor Localization Hilar Polar	 13 29
Tumor growth Exophytic Endophytic	 30 12