

Laparoscopic Appendectomy Using A Linear Stapler To Appendicular Stump Closure
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Introduction: Laparoscopy is a gold standard procedure in the operations of gall bladder. To date, clips and monopolar electrocautery were indispensable factors of these operations. It was observed that different energy source instruments, which appeared parallel to technological advances, had some advantages of comfort, time and cost and could replace clips and monopolar electrocautery in the operations of laparoscopic cholecystectomy.

Material and Method: A total of 60 patients who have been operated for gallstones between July 2010 and January 2011 in Keçiören Education and Research Hospital were included into the study. Patients were divided into three groups. Thereby, in Group A (20 patients), cystic duct and artery were sealed using laparoscopic clips (LK) and gall bladder was dissected from the hepatic bed using electrocautery. In Group B (20 patients), cystic duct and artery were sealed using Harmonic scalpel and gall bladder was dissected from the hepatic bed using Harmonic scalpel (HS). In Group C (20 patients), cystic duct and artery were sealed using Bipolar vessel sealer and gall bladder was dissected from the hepatic bed using Bipolar vessel sealer (BVS). After the operation, pressure of the cystic duct opening in the gall bladders obtained was measured using a specific device. Groups were compared for the parameters, including operation duration, amount of drain, cystic duct opening pressure and cost.

Results: When the operation duration was compared between the groups, it was found to be $31,5 \pm 11.1$ minutes in Group B, 33.1 ± 10 minutes in Group A, and $36,5 \pm 9.9$ in Group C; as a result, the difference between Group B and Group C was statistically significant ($p < 0.04$), whereas the differences between other groups were not statistically significant ($p > 0.57$). Duration of drain monitoring was similar in Group B and C, with the values of 1.8 ± 0.7 and 1.85 ± 0.8 days, respectively, and shorter in Group A, with a value of 1.1 ± 0.3 days. Cystic

duct opening pressure was highest in Group A with 324.0 ± 23.4 mmHg, and was 317.5 ± 24.8 mm Hg in Group B and 311.0 ± 22.9 mm Hg in Group C. accordingly, this difference between Group A, B and C was not statistically significant and p values were respectively $p=0.32$, $p=0.34$, $p=0.36$. For all of these 3 groups, the cost of the instruments used was calculated. Total and per-case cost analysis were done and, as a result, total cost was found to be 900\$, 2900\$, 1800\$ and per-case cost was found to be 45 \$, 145 \$, 90 \$.

Conclusion: In the surgery of laparoscopic cholecystectomy, different energy source instruments may be safely used after a cautious dissection and sealing realized in the cystic duct. Today, the most important limitation of comfortable and safe laparoscopic cholecystectomy seems to be its higher cost.