

Strategies and Techniques for the Treatment of Concomitant Gallbladder and Common Bile Duct Stones: An Economic Dilemma Only?

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Abstract

Background: Single stage laparoendoscopic rendez-vous (LERV), single-stage laparoscopic common bile duct exploration – cholecystectomy (LCBDE), and two-stage endolaparoscopic (LC-ERCP) management of cholecystocholedocholithiasis can be performed with similar short and long-term outcomes. This multicentric study retrospectively examined the outcome and hospital costs of one-stage vs. sequential two-stage strategies of treatment.

Methods: From January 2013 to December 2016, all the patients affected by cholecystocholedocholithiasis and treated at 2 different medical centers (General surgery and senology Unit - Policlinico Vittorio Emanuele Hospital and G.B. Morgagni Hospital, Catania - Italy) were enrolled in a retrospective study. Measures of outcome were hospital costs, postoperative morbidity and length of hospital stay. The 3 different approaches to cholecystocholedocholithiasis were retrospectively compared: two-stage endolaparoscopic (LC-ERCP) (Group A), laparoendoscopic rendez-vous (LERV) (Group B), and laparoscopic common bile duct exploration (LCBDE) (Group C) that includes laparoscopic trans-cystic common bile duct exploration (LTC-CBDE) and laparoscopic direct common bile duct exploration (LD-CBDE)

Results: A total of 204 patients met the study criteria. One-stage laparoscopic management using a direct common bile duct exploration approach (LD-CBDE) was the least expensive option when compared to LTC-CBDE (LTC-CBDE 1480 € versus LD-CBDE 1264 €, $p < 0.001$). However, two-stage LC-ERCP appears to be, according to our experience, the least expensive of all (998 €). The rendezvous technique group demonstrated a better overall efficacy with a complete clearance of the bile duct in 100% of the cases, as compared to the 80% of the LC-ERCP group and 72% of the LCBDE. Postoperative morbidity was 5% in the LC-ERCP group versus 9.75% in the LERV group, and 3.12% in the LCBDE group, respectively. The average length of hospital stay was 7.7 days and 17, and 11.8 days in the LERV, LCBDE, and LC-ERCP, respectively.

Conclusions: According to our experience, the Rendezvous technique provides the best strategy for the treatment of cholecystocholedocholithiasis in terms of clearance of the biliary duct, hospital stay, morbidity and costs. Randomized trials should be designed to confirm these findings.

Key words: laparoscopy, choledocholithiasis, rendezvous, choledocotomy, sequential technique, one-stage technique, cost-analysis