

Laparoscopic choledochoduodenostomy as definitive treatment for common bile duct stones following Roux-en-Y gastric bypass surgery

Christopher Du Coin

Orlando Regional Medical Center & Bariatric and Laparoscopic Center, USA

Introduction: Bariatric surgery is well known to be a lithogenic procedure that results in increased incidences of biliary stones. However, following Roux-en-Y gastric bypass (RYGB) surgery the new gastrointestinal configuration does not permit access to the biliary system in the standard fashion. Common bile duct stones have proved to be an extreme challenge for both the surgeon and the endoscopist in this setting. We shall review the possible techniques of accessing the biliary system following bypass surgery and provide an additional mode of definitive treatment for choledocholithiasis, specifically laparoscopic choledochoduodenostomy.

Methods and Procedures: Between January 2002 and July 2012, 3030 patients underwent RYGB at our institution. With approval of the Institutional Review Board, a retrospective chart review of a prospectively collected data was completed. Patients were included into the study if they had post-operative common bile duct stones regardless of previous cholecystectomy. Treatment modality was laparoscopic choledochoduodenostomy. Data points included: age, sex, date of bypass surgery, presence of stones at primary surgery, cholecystectomy at primary surgery, body mass index (BMI) at primary and secondary surgery, date of laparoscopic choledochoduodenostomy, duration of follow up, and resolution of symptoms. Descriptive statistics were performed and data reported as mean \pm standard deviation and range.

Results: Of 3030 patients, 10 patients were found to fit the inclusion criteria for this study. There were 7 female and 3 male patients with a mean age of 49.6 ± 10.5 (range 35-65) years. The average time between primary bypass surgery and choledochoduodenostomy was 42.1 ± 33.9 (range 8-113) months. The average BMI at primary surgery was 48.5 ± 8.7 (range 38.4-67.4) kg/m² and at choledochoduodenostomy was 32.3 ± 10.9 (range 22.7-54.1) kg/m². One patient was found to have gallstones at the time of RYGB and thus treated with concomitant cholecystectomy. After choledochoduodenostomy the average post-operative follow-up period was 24.8 ± 26.9 (range 2-84) months. Patients were followed in clinic and contacted at the termination of this study. At the termination of this study no patient had symptomatic recurrence of common bile duct stones.

Conclusion: Common bile duct stones that develop status post Roux-en-Y gastric bypass surgery are a difficult pathology to treat. Various means of gaining access to the common bile duct exist such as: percutaneous transhepatic instrumentation, laparoscopic transgastric endoscopic retrograde cholangiopancreatography, transenteric endoscopic retrograde cholangiopancreatography, and both laparoscopic and open common bile duct exploration. We suggest laparoscopic choledochoduodenostomy at the time of common bile duct exploration as a definitive treatment for common duct stone pathology.

Biography

Christopher Du Coin is a chief surgery resident in the Department of Surgery at Orlando Health in Orlando, Florida. He holds a joint appointment as a resident instructor in the College of Medicine at the University of Central Florida. He received his medical degree from St. George's School of Medicine and a master's of public health from Tulane University.