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Management of Bile Duct Injuries Following Laparoscopic Cholecystectomy: Long-term Outcome and Risk Factors Infuencing Biliary Reconstruction

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Abstract
Background: Bile duct injury following cholecystectomy remains a severe complication with major implications for the patient outcome.
Aim: To assess the outcome of surgical treatment and study the risk factor infuencing biliary reconstruction in patients with bile duct injuries following laparoscopic cholecystectomy.
Methods: Between January 2005 and December 2010, 43 patients with bile duct injuries following laparoscopic cholecystectomy were treated to our center. According to Strasberg classification, the types of injuries were as follows: type A in 7 patients (16.28%), type D in 4 (9.3%), type E1 in 9 (20.93%), type E2 in 11 (25.58%), type E3 in 10 (23.25%), and type E4 in 2 (4.65%) patients respectively. Management after referral included endoscopic sphincterotomy in patients with minor lesions (Strasberg type A) and Roux-en-Y hepaticojejunostomy in 36 patients with major duct injuries (Strasberg type D and E). 55.55% of patients with major bile duct injuries have endoscopic or surgical attempts of repairs prior to referral. In case of biliary peritonitis or acute cholangitis, the reconstruction was preceded by prolonged external biliary drainage.
Results: All minor lesions were successfully treated endoscopically, with outstanding long term results. For patients with major duct injuries, the postoperative mortality and morbidity rate were 5.55% and 25%, respectively. After a median follow-up period of 34.1 (range, 12-68) months, 30 patients (88.23%) remain in good general condition (using McDonald classification) and 4 patients (11.77%) developed a late anastomotic stricture. Multivariate analyses have identified postoperative biliary leak (p=0.012) as an independent predictor factor for the occurrence of late anastomotic stricture.
Conclusions: Minor bile duct injuries can be successfully treated endoscopically if proper abdominal drainage is maintained. Roux-en-Y hepaticojejunostomy is feasible and safe with contained morbidity and durable results even when previous surgery has failed. Postoperative biliary leak is a significant predictor for poor long term outcome.
Key words: bile duct injuries, long-term outcome, risk factors, Roux-en-Y hepatico-jejunostomy

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