

Safety For Using Fluorescent Cholangiography In Robotic Single Incision Cholecystectomy In Both Acute And Chronic Cholecystitis

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Background : The purpose of this study is to evaluate efficacy of fluorescent cholangiography for obtaining clear visualization of biliary structure and reduce bile duct injury in chronic and acute cholecystitis during robotic single incision cholecystectomy(RSIC).

Methods : A retrospective and single-center study included patients with chronic and acute cholecystitis who underwent RSIC with indocyanine green (ICG) fluorescence administration performed from May 2020 to August 2021. ICG was injected intravenous at a dose of 0.25 mg/kg. Efficacy was categorized and recorded according to the degree of visibility of each biliary structure (GB, cystic duct, common hepatic duct, common bile duct) during surgery.

Results : A total of 182 patients were included, of which 17 (9.3%) had acute cholecystitis and 165 (90.7%) had chronic cholecystitis. cystic duct (CD), common hepatic duct (CHD), and common bile duct (CBD), critical view of safety (CVS) were identified with ICG in 165(100%) and 16(94.1%) of chronic and acute cholecystitis, respectively. The duration of obtaining CVS (37.0 ± 40.0 min vs. 16.95 ± 15.26 min, $p < 0.01$) and total operation time (104.12 ± 56.95 vs. 58.43 ± 20.25 , $p = 0.005$) were longer in the acute cholecystitis group than in the chronic cholecystitis group. But, the rate of GB perforation during operation, complication rate and hospital stay length were no significantly difference two groups. Especially, there was no bile duct injury in both groups.

Conclusions : Fluorescent cholangiography using ICG before cholecystectomy may considered as a useful technique to clear identify and help in the visualization of biliary structure for safe cholecystectomy in acute severe inflammation patients and may helpful for expanding the indications for robotic single port cholecystectomy.

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