Endoscopic Papillary Large Balloon Dilation - Learning From the Multicenter Series

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Purpose: The optimal indication and method of endoscopic papillary large balloon dilatation (EPLBD) for removing large common bile duct (CBD) stone is currently not well established. Our purpose is to evaluate the fatal complications of EPLBD, therefore, to demonstrate a strict indication and ideal protocol of EPLBD to avoid lethal complications.

Materials and Methods: Patients who underwent attempted removal of CBD stones by EPLBD (balloon ≥ 12 mm) with or without sphincterotomy (EST) were identified by retrospectively reviewing the medical records from Mar. 2004 to Sep. 2010 in 10 tertiary referral centers. Clinical parameters, endoscopic data, and outcomes were collected and analyzed in overall 851 patients.

Results: Mean age was 72.1±11.0 years (22~96 yr) and 480 (56.4%) women were included. Mean maximal diameter of CBD, balloon, and stone were 17.5±5.2 (6~42), 14.4±2.4 (12~25), and 14.8±5.3 (12~38.4) mm, respectively. Complete stone removal was accomplished in 793 (93.2%) and mechanical lithotripsy was required in 177 (20.8%). 143 (16.8%) patients had documented complications: bleeding, 74 (8.7%); pancreatitis, 41 (4.8%); cholangitis, 16 (1.9%); perforation, 8 (0.9%); death, 4 (0.5%). Maximal balloon diameter was the risk factor of overall complication (OR 1.14, p=0.02) and pancreatitis (OR 1.24, p=0.04) in multivariable analysis. It was worthy of notice that full EST, instead of mid-EST, had been performed before EPLBD in 1 patient who died of 12 hour-delayed massive bleeding, and immoderate balloon dilatation to distal CBD stricture had been undergone in 3 mortality cases with perforation and/or pancreatitis.

Conclusion: Strict indication and adequate method protocol are necessary in the view of preventing fatal complications. When the cautious EPLBD technique, including mid-EST or moderate balloon dilatation for distal CBD stricture, is performed in strict indication, it is effective and safe procedure for removal of large CBD stone.