Predictive Factors of Severe Clinical Outcome in Patients with ERCP-Related Perforation

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Background/Aims: Endoscopic retrograde cholangiopancreatography (ERCP) related perforation is a very fatal complication. We investigated the factors predictive of an increased severity of clinical outcome of ERCP-related perforations.

Methods: We retrospectively assessed outcomes of 15,452 ERCP procedures performed in 9,295 patients from January 1, 2004, to December 31, 2008, at Asan Medical Center. Severe clinical outcome was defined as a more than 14 days of unplanned hospital stay or intensive care unit management or surgery.

Results: Perforations occurred following 55 ERCP. Five were scope-related, and all required surgery. In the other 50 perforations that not associated with scope itself, 11 cases (22%) showed severe clinical outcomes. The factors predictive of severe clinical outcomes of these cases included intra-peritoneal air (odds ratio [OR] 15.31; 95% confidence interval [CI], 3.07-76.30), extra-abdominal air (OR 32.38; 95% CI, 4.94-212.13), and peritonitis (OR 21.71; 95% CI, 2.10-224.27). Patient age, endoscopic sphincterotomy, bile duct stricture, and long procedure time, all of which have been shown to be risk factors for ERCP-related perforations, did not affect the severity of clinical outcome. Even perforation site except bowel wall and perforation mechanism also made no significant difference in clinical outcome. There was no deceased patients in all perforations.

Conclusions: Scope-related perforation of the ERCP is a fatal complication requiring surgery. In perforations that were not scope related, the presence of intra-peritoneal or extra-abdominal air or peritonitis were predictive of a more severe clinical course, including a long hospitalization, intensive care unit management, or even surgery.

Key Words: ERCP; Perforation; Outcome; Predictive factors