

ERCP-Induced Acute Necrotizing Pancreatitis: Is It a More Severe Disease?

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Summary: Acute necrotizing pancreatitis (ANP) is an uncommon but serious complication of endoscopic retrograde cholangiopancreatography (ERCP). This study compares the severity, clinical course, and long-term outcome of ERCP-induced ANP with ANP induced by other causes. A review of 72 consecutive patients with ANP treated surgically at the Mayo Clinic identified ERCP as the cause in 6 patients (8%). Compared to the remaining 66 patients, the post-ERCP group had higher APACHE II scores on admission (mean, 13 vs. 10) and more extensive pancreatic necrosis (mean, 55 vs. 47%). The post-ERCP group had a higher rate of infected necrosis (100 vs.

75%) and required earlier necrosectomy after the onset of pancreatitis (9 vs. 13 days). The rate of postoperative pancreatic and enteric fistulae was also higher (50 vs. 33%). Although the mortality rate in the post-ERCP group was lower (17 vs. 29%), they were significantly younger (50 vs. 62 years; $p = 0.02$) and all the survivors had residual long-term morbidity. ANP is more severe when ERCP-induced; infection introduced during the ERCP may, in part, account for this severity. **Key Words:** Endoscopic retrograde cholangiopancreatography—Complications—Necrotizing pancreatitis—Infection—Severity—Outcome.

Acute pancreatitis is the most common complication of endoscopic retrograde cholangiopancreatography (ERCP), occurring in ~1% of patients undergoing the procedure in most large series (1-5) [0-40% in smaller series (6,7)]. The majority of patients have a mild course, with rapid resolution of symptoms and no sequelae, but severe disease is well recognized. Although uncommon, acute necrotizing pancreatitis (ANP) is a particularly serious complication of ERCP and is the main determinant in mortality in post-ERCP pancreatitis. There are few specific reports on ERCP-induced ANP (8,9) and details are limited, as the number of patients affected is relatively small.

Many factors such as direct mechanical trauma, hydrostatic forces, chemical effects of the contrast agent injected under pressure, microbial contamination, and thermal injury have been implicated as potential causes of post-ERCP pancreatitis (10). While the pathogenesis

of acute pancreatitis after ERCP or other causes remains elusive, it has been our clinical impression that ERCP-induced ANP tends to be a more fulminant disease than ANP induced by other causes. For this reason, the aim of this study was to compare the disease severity, clinical course, and eventual outcome of ANP induced by ERCP versus ANP induced by other causes, as managed at a tertiary referral center.

PATIENTS AND METHODS

The medical records of all consecutive patients diagnosed with ANP and treated surgically at the Mayo Clinic, Rochester, MN, U.S.A., from 1983 to 1995 were reviewed. Patients with ANP were identified by dynamic, contrast-enhanced computer tomography (CT), and features of the acute pancreatitis and its complications were classified in accordance with the Atlanta Conference (11). Only the patients with pancreatic and/or peripancreatic necrosis, all proven intraoperatively, were included. The records of those with ERCP-induced ANP were carefully reviewed in relation to the ERCP, and their clinical course and outcome were compared with those of the remaining patients.

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