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Current Trends in The Surgical Management of Acute Pancreatitis

Surgeons usually get involve in the management of acute pancreatitis when gallstone is the aetiological factor or when some local complications develop. Several surgical articles about acute pancreatitis published during the past few years emphasized mainly on the new trends of treatment of gallstone pancreatitis and the management of necrotizing pancreatitis. This editorial article provides an overview of recent studies regarding these two aspects, and the author's opinion on some controversial issues of acute pancreatitis based on evidences from such studies.

Management of gallstone pancreatitis

The concept of minimally invasive surgery has expanded rapidly since the introduction of laparoscopic cholecystectomy, and this concept has now being applied to manage patients with gallstone pancreatitis.

Early report of the benefit of endoscopic ampullary decompression in patients with gallstone pancreatitis¹ led to randomized clinical trials and it has now become clear that bile duct decompression by early endoscopic retrograde cholangiopancreatography and endoscopic sphincterotomy (ERCP & ES) is beneficial, especially in patients with predicted severe pancreatitis or with concurrent obstructive jaundice². At least three randomized clinical trials of ERCP & ES have been published and supported the concept. Although the benefit of ERCP & ES is now clear, the controversial point that should be concerned is the appropriate time for the procedure. A recent and interesting study on the natural course of gallstone pancreatitis showed that duration of

ampullary obstruction can be used to determine the severity of acute pancreatitis³. Among 146 patients with gallstone pancreatitis, 97 had impacted stones at the ampulla of Vater at exploration whereas 49 patients had patent ampulla. The duration of ampullary obstruction among patients with impacted stones was defined as the time elapsed between the onset of symptoms and exploration, and for those with patent ampulla, the time between the onset of symptoms until the appearance of signs of ampullary disobstruction. The incidence of severe pancreatitis was significantly higher in group with impacted stone as opposed to that with patent ampulla (19.7% vs 6.1%, $p < 0.01$). For patients whose duration of obstruction lasted less than 48 hours, the incidence of severe pancreatitis was low : 8.1% for those with duration of obstruction less than 24 hours and 10.6% for those with duration of obstruction being between 25 and 48 hours. When duration of obstruction exceeded 48 hours, the incidence of severe pancreatitis was 84.6% and nearly all patients had necrotizing pancreatitis. Based on this study, it seems to be safe to treat patients with gallstone pancreatitis conservatively during the first 24 hours after the onset of symptoms. However if obstruction is not resolved by the second day, ERCP & ES or surgical intervention should be carried out.

After resolution of the acute attack, the aim of subsequent treatment is to prevent further attack of pancreatitis and this is achieved by means of removal of the gallbladder. Ricci and colleagues recently reported the result of combined ERCP & ES and laparoscopic cholecystectomy (LC) in 57 patients with acute gallstone pancreatitis. The overall morbidity was 8.9% and without any mortality⁴.

Therefore the current trend in the treatment of acute gallstone pancreatitis is now shifting toward minimally invasive surgery; i.e. a combination of ERCP & ES and LC.

Management of necrotizing pancreatitis

Pancreatic necrosis is the most devastating complication of acute pancreatitis. Management of this complex condition has improved dramatically over the past decade, and mortality rates are now reported approximately 20% instead of the 50%-70% as reported in the 1970s^{5,6}. Despite of this improvement, infectious complications of pancreatic and peripancreatic necrosis are still the major cause of mortality.

Though it is still debatable whether necrosectomy is necessary in sterile pancreatic necrosis, removal of necrotic pancreas and peripancreatic tissue is already established as an essential part of treatment of infected pancreatic necrosis⁷⁻⁹. The controversial point is the best timing of necrosectomy; whether it should be done early or at the late stage of the disease or should it be done only after failure of conservative treatment. Two interesting studies on necrotizing pancreatitis showed that it took approximately one week for the demarcation between healthy pancreatic tissue and necrotic pancreas to occur^{10,11}. Moreover, a prospective randomized study from Mexico showed

that patients (n=25) underwent early necrosectomy (within 48-72 hours of onset) had higher mortality rate than that of patients (n=11) underwent late necrosectomy (at least 12 days after onset)¹². Looking at the data retrieved from these studies, intensive conservative treatment should be delivered to patient during the first week of onset of acute pancreatitis and necrosectomy should be avoided during this period. If the conditions become worse after this first week of treatment and abdominal CT scan shows evidences of necrotic pancreas, surgeon should determine the possible benefit of surgical necrosectomy (definite surgical role in infected necrosis).

Following initial removal of necrotic tissue, three subsequent operative techniques have been documented: 1) immediate closure of the abdominal wound over drains; 2) open or semi-open packing, and 3) staged debridement with closure over irrigation drains (continuous lesser sac lavage). Each method has advantages and disadvantages^{6,13,14}, but results from recent studies favour the last option^{13,15}.

In conclusion, data available from several recent investigations may now be applied to establish some guidelines of surgical treatment of acute pancreatitis. However, one should beware that the clinical course of acute pancreatitis of different aetiology varies, and some guidelines of treatment should be limited to certain cause.

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