

Gallbladder Motility and Acute Pancreatitis

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A recent survey of acute pancreatitis in Italy based on 1,005 patients with acute pancreatitis reported that the etiology of the disease indicates biliary origin in 60% of patients [1]. Another study focused on the recurrent form of pancreatitis [2] and found that of the 1,068 patients with acute pancreatitis enrolled in five European countries, 288 (27%) had recurrent pancreatitis; the majority (79%) were men, with a mean age of 43 years (range 16-95 years) and, as regards the etiology, gallstones were the cause of recurrent pancreatitis in 25% of the cases. It is also important to emphasize that a substantial number of patients with 'idiopathic' pancreatitis may have small gallstones which were undetected by abdominal ultrasound or computed tomography [3]. From a practical point of view, therapeutic problems have been empirically proposed. Even if cholecystectomy is the main therapeutic option in patients with gallstones, some authors have proposed the use of ursodeoxycholic acid in order to prevent further attacks of acute pancreatitis having a biliary origin [4, 5]; others have suggested that endoscopic sphincterotomy may be an option, especially in patients considered unfit for surgery [6, 7, 8]. Why patients with gallstones, especially those with biliary sludge [9] develop acute pancreatitis remains an open issue. Small gallstones, enlarged cystic ducts, impacted stones of normal dimensions, and a functioning common channel have been demonstrated to be predisposing local etiologic factors in the development of gallstone pancreatitis [10].

McMahon and Shefta have [11] reported that numerous small stones having an irregular shape appeared to be more common in patients who had suffered acute pancreatitis, and may be a factor in the pathogenesis of the attack. Diehl *et al.* [12] support these findings which demonstrate that patients with at least one gallstone smaller than 5 mm in diameter have more than a 4-fold increased risk of presenting with acute biliary pancreatitis. Why do patients with small gallstones develop acute pancreatitis? An answer to this question comes from a recent study carried out in The Netherlands [13]. The authors compared postprandial gallbladder motility using ultrasonography and, after subsequent cholecystectomy, numbers, sizes, and types of gallstones, gallbladder bile composition, and cholesterol crystallization in 21 gallstone patients with previous pancreatitis and 30 patients with uncomplicated symptomatic gallstones. The authors found that gallbladder motility was stronger in patients with pancreatitis than in patients with uncomplicated symptomatic gallstones (minimum postprandial gallbladder volumes: 5.8 ± 1.0 vs. 8.1 ± 0.7 mL; $P=0.005$). Patients with pancreatitis often had more sludge (41% vs. 13%; $P=0.03$), and a greater number of small gallstones than patients with symptomatic gallstones (smallest stone diameters: 2 ± 1 vs. 8 ± 2 mm; $P=0.001$). Crystallization also occurred much faster in the bile of patients with pancreatitis ($P<0.001$), possibly because of higher mucin concentrations. No significant differences were found in type of gallstones, relative biliary lipid content, cholesterol saturation

index, bile salt species composition, phospholipid class, total protein or immunoglobulin (G, M, and A), haptoglobin, and alpha-1 acid glycoprotein concentration. The conclusions drawn from this study are important because they have demonstrated that patients with small gallstones and/or preserved gallbladder motility are at increased risk of pancreatitis because the stones could more easily migrate from the gallbladder to the common bile duct if gallbladder contraction is preserved. The potential benefit of prophylactic cholecystectomy or alternative therapeutic options should also be considered in these patients who are unfit for surgery; however, in these patients “wait and see” option should never be tolerated.

Keywords Cholangiopancreatography, Endoscopic Retrograde; Cholecystectomy; Cholecystolithiasis; Cholelithiasis; Gallstones; Pancreatitis; Risk Factors

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