Acute gallstone pancreatitis: a constant challenge for the surgeon

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Abstract

Introduction Acute pancreatitis is an inflammation of the pancreas caused by autodigestion of the gland by its enzymes. It includes a broad spectrum of pancreatic disease, which varies from parenchymal edema to necrosis. The objective of the current study was to describe the symptoms of the patients with gallstone-associated pancreatitis and to reinforce the opinion that operation, within the first 72 hours after the onset of the disease, has many advantages and has to be considered as a treatment option when ERCP is not available.

Methods The present retrospective study concerns all patients that were hospitalized in Mamatsio Hospital of Kozani during the period between Jan 1, 1997 and Dec 1, 2002 under the diagnosis of gallstone-associated acute pancreatitis. From the records 108 cases were identified (43 males and 65 females). The mean age was 62.93 (SD 15.85 years), ranging from 17 to 91 years.

Results 24 patients (22.22%) fulfilled more than 3 of Ranson's criteria. 20 patients (18.52%) presented necrotizing pancreatitis. All patients underwent open cholecystec-

tomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 7 patients (6.48%). The mean hospitalization was 10.53 days (S.D. 6.38 days), ranging from 2 to 36 days. The associated mortality reached 5.55% (6 patients) and no patient died in the operating theater. During the 12-month follow-up period, 2 patients (1.85%) developed pancreatic pseudocysts.

Keywords Acute gallstone pancreatitis · Cholecystectomy

Introduction

Acute pancreatitis is an inflammation of the pancreas caused by autodigestion of the gland, by its enzymes. It includes a broad spectrum of pancreatic disease, which varies from parenchymal edema to necrosis. The clinical course of an episode of acute pancreatitis varies from a mild-transitory form to a severe necrotizing form characterized by multisystem organ failure and mortality in 20–40% of cases [1]. Mild pancreatitis does not need specialized treatment, and surgery is necessary only to treat underlying mechanical factors such as gallstones or tumors at the papilla of Vater [1]. Etiologically, the most frequent form is acute biliary pancreatitis [2]. Treatment of such an entity is still controversial, but a minimally invasive technique undoubtedly plays an important role [2].

The objective of the current study was to describe the symptoms of the patients with gallstone-associated pancreatitis and to reinforce the opinion that operation, within the first 72 hours after the onset of the disease, has many advantages and has to be considered as a treatment option when ERCP is not available.

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Methods

The present retrospective study includes all non-alcoholic patients hospitalized in the peripheral Hospital of Kozani during the period between Jan 1, 1997 and Dec 1, 2002 under the diagnosis of gallstone-associated acute pancreatitis (GAAP).

The characteristics of the 108 patients included in the present study are presented in table 1.

The diagnostic approach of the patients included both laboratory and imaging investigation. All laboratory examinations necessary to a full patient evaluation according to Ransons' criteria were performed. In the context of the imaging study a plain chest film, a plain abdominal film, ultrasonography and computer tomography were performed. All patients were evaluated with the Ranson's criteria. It is important to notice that 69 (63.89%) patients were aware of the gallstones.

All patients underwent cholecystectomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 7 patients (6.48%). One hundred and two patients were followed-up during a 12 month period. The follow-up included laboratory examination and CT-scanning every 6 months.

Results

The symptomatology is of prime importance in the diagnosis of the acute pancreatitis in general. Table 2 presents the symptoms appearing in GAAP in the present series.

The laboratory investigation plays a major role both in the diagnosis and in the prognosis of the G.A.A.P. Table 3 presents the laboratory results of the patients. Twenty-four patients (22.22%) fulfilled more than 3 Ranson's criteria. Furthermore, according to Ranson classification 88 patients (81.48%) had a mild-moderate acute biliary pancreatitis and 20 (18.52%) had a severe one.

Table 1. Characteristics of the patients in this series

Sex	Male: 43	Female: 65
Age (years)	62.93 (S.D 15.85)	
Age range (years)	17 to 91	

Table 2. Symptomatology of G.A.A.P

Symptoms	No of patients (n=108)	Percentage (%)
Abdominal pain	108	100
Nausea and Vomiting	92	85.19
No bowel sounds	79	73.15
Hypovolemia		
(Tachycardia – Hypotension)	13	12.04

The imaging studies represent a paramount factor in the diagnosis and decision-making of GAAP. The results of the imaging investigation are presented in table 4. In the above table under each examination are cited the possible findings that led the examination to be conclusive.

All patients underwent cholecystectomy and common bile duct exploration. Necrosectomy concomitantly with cholecystectomy was performed in 7 patients (6.48%). The mean hospitalization period was of 10.53 days

Table 3. Laboratory findings

	Parameter	No of patients	Percentage (%)
Admission	W.B.C >16,000 cells/ μ L	15	13.89
	Glc >200 mg/dL	9	8.33
	LDH >350 I.U./L	21	19.44
	Serum Amylase >1000 I.U./dL	103	95.37
	Ht elevated	7	6.48
	CRP elevated	7	6.48
	SGOT (AST) >250 I.U/L	27	25.00
First 48 hours	Δ Ht >–10%	13	12.04
	Ca ₂₊ <8 mg/dL	9	8.33
	paO ₂ <70 mmHg	34	31.48
	Base deficit <4 mEq/L	15	13.89
	Fluid sequestration >600 mL	8	7.41

Table 4. Results of the imaging studies

	No of patients	Percentage (%)
Plain abdominal film	71	65.74
Sentinel loop		
Colon cutoff sign		
Radioopaque stones		
Air in the duodenal loop		
Obliteration of the psoas sign		
Plain chest x-ray	32	29.63
Left basal atelectasis		
Left pleural effusion		
Elevation of left hemidiaphragm		
Pancreatic sonography	78	72.22
Edema		
Peripancreatic fluid collection		
Biliary tree sonography	92	85.19
Gallstones		
CAT	100	92.59
Pancreatic changes		
Peripancreatic changes		
Nonspecific findings		

(S.D.=±6.38days). The duration of the hospitalization ranged from 2 to 36 days.

The associated mortality was 5.55% (6 patients) and no patient died in the operating theater. During the 12-month follow-up period: 2 patients (1.85%) developed pancreatic pseudocysts.

Discussion

It is well known that acute biliary pancreatitis is more frequently found among females than males [3–8]. The above data is consistent with the findings in the present study, since the female: male ratio is around 2:3. As for severity, there was no significant association between gender and any of the severity parameters with a few minor exceptions: longer hospital stays, higher Imrie scores and more pseudocysts for women, and more necroses in women with idiopathic pancreatitis. Thus, gender is no independent risk factor for the severity and outcome of acute pancreatitis [9].

Overall length of hospital stay was positively correlated with complications, choledocholithiasis, co-morbidity, and deferment of endoscopic or surgical procedure [10–12]. In the present series the above statement reflects to the fact that the range of the hospitalization varies from merely 2 days to 36 days.

In the modern era of laparoscopic and endoscopic surgery it is generally accepted that GAAP has to be managed by endoscopic removal of the gallstone and, secondary laparoscopic removal of the gallbladder [13–16]. In the present series neither ERCP nor laparoscopic approach was available for that reason open surgery was performed.

A field of controversy is the timing of the operation. According to several authors operation can be performed at the acute phase, while according to others it should be performed several weeks after the acute episode [17–23]. In our series the preferred time of the operation was within 72 hours from the acute episode. This choice was proved to be right as this was proven by the low mortality rate and the duration of the hospitalization.

In conclusion, despite the fact that open surgical management of the G.A.A.P. is not the optimal treatment of the disease, the operation has to be a logical option in the interventional arsenal of the surgeon, especially when the institutional facilities at which he works don't offer access to E.R.C.P. and laparoscopic instrumentation.

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