

Early endoscopic sphincterotomy and early laparoscopic cholecystectomy in the treatment of severe acute biliary pancreatitis – a preliminary report

Panek J*, Karcz D, Rembiasz K, Budzyński A, Zasada J

2nd Chair of General Surgery, Jagiellonian University, Collegium Medicum, Kraków, Poland

Abstract

Purpose: The proper timing of endoscopic sphincterotomy and laparoscopic cholecystectomy in acute biliary pancreatitis is still a subject of controversies.

The following rapid report presents preliminary data concerning treatment of patients with severe form of necrotizing biliary pancreatitis (SNBP) with the sequence of minimal invasive procedures (endoscopic sphincterotomy and laparoscopic cholecystectomy) performed in the first 48 hours after admission.

Material and methods: Twelve patients with SNBP were included in the study. The described above procedures were performed in all of the patients within 48 hours. We evaluated clinical outcome, complications, time of stay in hospital and also some morphological (white blood cells) and liver parameters (AST, ALT, bilirubin, ALP and GGT) of these patients in the course of the disease.

Results: Two patients died. Two other ones has local complications. We did not observe major complications after ERCP with ES and after laparoscopic cholecystectomy. Additionally, the lavage of the abdominal cavity was performed and drainage was established during laparoscopic cholecystectomy. Conversion in our group occurred in 1 person. Later complications in the course of the disease were caused by the its progression and not related to the performed procedures

Conclusions: The results are very incurable, however, performing these types of procedures in the experienced centers deserves to be taken into account.

Key words: necrotizing pancreatitis, surgical procedures, minimally invasive, endoscopy treatment.

* CORRESPONDING AUTHOR:

Jagiellonian University, Collegium Medicum
ul. Kopernika 21, 31-501 Kraków, Poland
Tel: +48 12 4248209; Fax: +48 12 4213456
e-mail: mspanek@cyf-kr.pl (Józefa Panek)

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Introduction

The introduction of the endoscopic techniques to clinical practice created new ways of the management of patients with severe biliary pancreatitis. Early endoscopic sphincterotomy (ES) is reserved for the severe form of acute pancreatitis, especially with concomitant cholangitis [1]. Usually, the cholecystectomy is performed during the same hospital stay. In the most clinical centers it is performed during first days after the admission [2-4]. In the 2nd Chair of General Surgery of the Jagiellonian University endoscopic sphincterotomy is performed during the first 24 hours after an admission and laparoscopic cholecystectomy is performed on a next day (within 48 hours). These techniques were used in 12 patients with severe necrotizing biliary pancreatitis (SNBP). In this preliminary report we present the early results of such model of treatment.

Material and methods

Twelve patients (*Tab. 1*) with SNBP were included to the study. Mean age of the patients was 61 years (SD=17.86). All patients with SNBP underwent CT scanning. In a few cases, the CT scan was performed more than once. For each patient, the diagnosis of acute pancreatitis (AP) was established on the clinical history, ultrasound examination, and serum α -amylase activity (at least three times above the upper reference limit). All the patients enrolled to the study were hospitalized within 24 hours of the beginning of clinical symptoms. The biliary etiology of AP was determined based on the clinical history and the presence of stones in the gallbladder or in the common bile duct. The progression of morphological changes within the pancreas was evaluated using ultrasonography and the Becker scale [5]. Each patient has performed ultrasound examination every day during the study period. It allowed for the analysis of the evolution of the inflammatory changes within the gland and the surrounding areas.

The CT scans showed an evolution of necrotic changes of

Table 1. Characterization of examined group of patients with severe necrotizing biliary pancreatitis (SNBP)

		SNBP
Number of patients		12
Age	mean (range) [years]	61 (47-86)
Sex	male/female [n]	4/8
APACHE II	mean	14.33
RANSON	mean	4.21
		C – 3
		D – 7
		E – 2

the parenchyma of the gland and in the retroperitoneal and peritoneal spaces. The Balthazar score was used for this evaluation [6]. The severity of AP was determined according to clinical and laboratory parameters. AP classification met the Atlanta criteria, Ranson's classification, and APACHE II score [7-9]. The degree of organ efficiency was measured using the MOD score (Multiple Organ Dysfunction score) [10].

Results

The mean hospitalization time was 33.8 days (SD=24.9). In all patients endoscopic sphincterotomy was performed during the first 24 hours after admission and laparoscopic cholecystectomy with insertion of drains into the peritoneal cavity for lavage was done during the next 24 hours. After introduction of such a treatment we observed in all patients the decrease of bilirubin level and the activity of liver's enzymes (AST, ALT, ALP, GGT). These results are presented in *Tab. 2*.

Two patients died. One patient (86-years old women) died after 16 days of hospitalization. In this patient the APACHE II score was 15. She died because of the respiratory insufficiency. The next patient died after 70 days of hospitalization (70-years old woman). The cause of death was multiorgan failure. In two other patients the acute pancreatic fluid collections were observed in the postoperative course. In one case the fluid resolved spontaneously, in the other one the external drainage was performed. This patient was hospitalized 78 days. One patient developed the blindness of one eye.

Discussion

The presence of stones in the biliary tree and jaundice were indications for early ES in our patients. In all patients, the ultrasound examination showed a dilatation of the common bile duct. Also the bilirubin level was increased. Endoscopic retrograde cholangiopancreatography (ERCP) is the procedure of choice in the presence of stones within biliary ducts and if performed by an experienced surgeon it is safe and effective. We observed no complications related to the ERCP with ES. Moreover, in our opinion such a treatment minimize a risk of the development of complications in the later course of a disease. During cholecystectomy not only removal of the source of stones is done but also removal of the fluid from abdominal cav-

Table 2. White blood cells and liver parameters evaluated in the 1st and 7th day of the disease in the group of examined patients with severe necrotizing biliary pancreatitis (n=12)

Measured parameter	Day 1		Day 7	
	Mean value	SD	Mean value	SD
WBC x1000/ μ L	13.63	2.7	13.16	7.1
AST [U/l]	175.7	219.4	60.95	24.5
ALT [U/l]	341.0	443.9	53.3	25.9
Bilirubin [μ mol/l]	48.6	22.8	15.98	13.2
ALP [U/l]	443.4	303.9	306.2	129.9
GGT [U/l]	491.5	358.7	207.0	127.7

ity which is reach in enzymes and toxic substances. During this procedure the drainage is inserted, which allows the lavage in the postoperative period. In our opinion the early laparoscopic cholecystectomy is easier technically. Delayed cholecystectomy is more difficult because of the presence of hard, solid adhesions and more severe inflammatory infiltration of the gallbladder wall. The rate of conversion in our material is about 1% whereas in the others centers where delayed cholecystectomy is performed it, reaches 10% [2,3]. The complications caused by an infection, which developed later in the course of pancreatitis, in our opinion were connected to the progression of the diseases and not attributed to ERCP. During this procedure we always gave a broad spectrum antibiotic into the biliary tree. The presented method of management, in our opinion, deserves to be taken into account. The minimal invasive techniques develop dynamically and are widely used in the clinical practice. It is possible, that in the future such a way of treatment of patients with severe form of biliary pancreatitis will be implemented into the widely accepted algorithm of the management.

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