

Endoscopic retrograde cholangiopancreatography is safe and effective method for diagnosis and treatment of biliary and pancreatic disorders in octogenarians

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Abstract

Background and aim : Diagnosis and treatment of pancreatic and biliary diseases represents a special problem in old patients who often suffer from one or more concomitant diseases. The aim of this study was to evaluate the safety and efficacy of ERCP in very old patients (octogenarians).

Patients and methods : Patients 80 years or older who underwent ERCP from October 2001 to December 2005 were studied retrospectively.

Results : A total of 209 patients (121 women, 88 men), with a mean age 86 ± 4.4 years old (80-102) underwent 251 ERCPs. All but three patients tolerated the procedure well. Three procedures were not completed due to patients' discomfort (1.4%). Two of these patients underwent percutaneous transhepatic cholangiography and the other one was treated conservatively. A cholangiogram was obtained in 193 cases (92.3%), although in 7 patients an additional attempt was required. The main endoscopic findings were common bile duct stones in 51.8% (100/193) and cancer in 28% (54/193) of patients. Based on the diagnostic findings, a therapeutic intervention was indicated in 189 patients (90.4%) and was achieved in 181 of them (95.8%). Complications were observed in 9.6% of ERCPs (24/251). Post - ERCP mild pancreatitis was the more frequent complication in 11 procedures (4.4%). No severe pancreatitis was observed. Six procedures were complicated by cholangitis (2.4%) and two by cholecystitis (0.8%). Early surgical intervention was required in 2 cases because of oesophageal perforation and retroperitoneal perforation respectively. Two patients died (0.8%) ; one patient with pancreatic cancer died due to septic shock after inadequate biliary drainage and the other one died after operation for retroperitoneal perforation.

Conclusions : In conclusion, ERCP is safe and effective method for diagnosis and treatment of biliary and pancreatic disorders in octogenarians despite the high comorbidity in this group of patients. (*Acta gastroenterol. belg.*, 2007, 70, 199-202).

Introduction

The population in developed countries is rapidly aging and life expectancies have increased from 65 to more than 80 years nowadays. The number of patients aged 80 years and more continues to grow rapidly. As the population ages, doctors more and more face old patients' and their relatives' expectations of deriving greater benefit from medical interventions.

It is well known that the incidence of pancreatic and biliary diseases rises with age (1-3). Treatment of pancreaticobiliary diseases in aged patients present certain difficulties because these patients often suffer from one or more concomitant diseases that increase the risk associated with surgery. Despite the improvement in surgical techniques and supportive measures, the morbidity and mortality of pancreatobiliary surgery are high in the

elderly population (4,5). Common bile duct exploration in patients 80 years or older has been reported to carry a high mortality rate especially on an emergency basis (6,7).

Endoscopic retrograde cholangiopancreatography (ERCP) and sphincterotomy (EST) are increasingly being used for the management of older patients with pancreaticobiliary diseases. Diagnostic and/or therapeutic ERCP is an invasive procedure but generally with a lower morbidity and mortality than surgery (4-6).

In recent years there have been publications examining the safety of ERCP in elderly. Most of these studies include elderly patients in general (≥ 65 years old), while there are only scarce reports in the literature regarding very old patients. The aim of this study was to evaluate the safety and efficacy of endoscopic retrograde cholangiopancreatography and sphincterotomy in managing a wide range of pancreaticobiliary diseases in very old patients (≥ 80 years old) in our department.

Patients and methods

Between October 1, 2001 and December 31, 2005 a total of 1451 ERCP procedures were performed by 3 experienced endoscopists at our department. All patients 80 years or older who underwent diagnostic or therapeutic ERCP during this period were retrospectively studied. Two hundred and nine patients were assessed (121 women, 88 men) with a mean age of 86 ± 4.4 years (range 80-102 years). A total of 251 ERCP were performed. Thirty-two patients underwent one or more additional ERCPs during follow-up because of partial or total failure of the initial procedure (N = 8) or recurrence of the symptoms (N = 24). Before the initial ERCP, 31 patients had undergone cholecystectomy (Table 1). One hundred and forty two patients (67.9%) had one or more chronic concomitant diseases, the most frequent being arterial hypertension and diabetes mellitus (Table 2). Most patients were admitted to the hospital

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Submission date : 09.07.2006
Acceptance date : 11.12.2007

the day of the examination. They received nothing p.o. for 24 hours, and were discharged 48 hours after the ERCP if no complication had occurred. The rest underwent the procedure during their hospitalization because of cholangitis, pancreatitis, or painless jaundice. Forty-four patients were receiving aspirin or anti-platelet agents (21%) and thirteen patients were on oral anticoagulation therapy (6.2%). These patients were handled according to the guidelines of the American Society of Gastrointestinal Endoscopy regarding discontinuation and reinstitution of these drugs (8).

Topical pharyngeal anesthesia was administered in all patients with lidocaine spray. Conscious sedation with intravenous midazolam (2-5 mg) and pethidine (25-50 mg) were routinely used for the procedures and recovery after the ERCP was improved, when needed, by the administration of flumazenil intravenously. All patients received a second generation cephalosporine (cefuroxime or cefoxitine) one hour before and six hours after the ERCP (9).

Intravenous hyoscine-N-butylbromide (buscopan) and glucagon were administered to reduce bowel peristalsis when indicated. Routine monitoring of pulse, blood pressure and oxygen saturation were performed before, during, and after the procedures. Patients were placed in the left decubitus position. Standard duodenoscopes with a 4.2 mm accessory channel were used.

Patients' demographic and clinical characteristics, indications for the procedure, tolerance and efficacy in relieving patients' problem, complications and mortality were retrieved from case records and computer database and were analyzed.

Results

The main initial indications for the first ERCP are given in table 1. All but three patients tolerated the procedure well. Three procedures were not completed due to patients' discomfort (1.4%). Two of these patients underwent percutaneous transhepatic cholangiography and the other one was treated conservatively.

A cholangiogram was obtained in 193 of 209 cases (92.3%) although in 7 patients an additional attempt was required. In the remaining 16 cases, cholangiography was not obtained because of failure of cannulation that was mainly due to the presence of periampullary diverticula (4 patients) or of tumor invasion (6 patients), or to poor tolerance (3 patients). The most frequent findings obtained in the 193 patients in whom a cholangiogram could be obtained are summarized in table 1.

Based on the diagnostic findings, a therapeutic intervention was indicated in 189 patients (90.4%) and was achieved in 181 of them (95.8%). Sphincterotomy was used in association with other techniques, the most frequent being bile duct stone clearance (75 cases). The therapeutics interventions are shown in table 3.

Complications were observed in 9.6% (24/251) of procedures. Post-ERCP mild pancreatitis was the more

Table 1. — **Demographic and clinical characteristics of the patients (209 patients)**

	N	%
Age in years mean \pm SD (range)	86 \pm 4.4 (80-102)	
Women/men	121/88	
Clinical presentation		
Painless obstructive jaundice	98/209	46.9
Acute or recurrent cholangitis.	28/209	13.4
Bile duct stones	25/209	12
Biliary pancreatitis	11/209	5.3
Right quadrant abdominal pain	7/209	3.3
External biliary fistula	6/209	2.9
Abnormal liver tests	19/209	9.1
Others	15/209	7.2
Previous cholecystectomy	31/209	14.8
Periampullary diverticula	65/209	31.1
Bile duct cannulation	193/209	92.3
Successful endoscopic sphincterotomy	181/189	90.4
Principal diagnoses (193 patients)		
Bile duct stones	100/193	51.8
Pancreatic carcinoma	19/193	9.8
Cholangiocarcinoma	23/193	11.9
Periampullary carcinoma	12/193	6.2
Benign stenosis	13/193	6.7
Dilated bile duct without stones	20/193	10.4
Bile duct leakage	2/193	1
Normal bile and pancreatic ducts	4/193	2

SD : Standard Deviation.

Table 2. — **Concomitant diseases (142 out of 209 patients)**

Arterial Hypertension	88 (42.1%)
Diabetes mellitus	29 (13.9%)
Chronic Obstructive Pulmonary Disease	18 (8.6%)
Ischemic heart disease	20 (9.6%)
Arrhythmias	16 (7.7%)
Others	15 (7.2%)

Some patients had two or more diseases.

frequent complication in 11 procedures (4.4%). No severe pancreatitis was observed. Six procedures were complicated by cholangitis (2.4%) and two by cholecystitis (0.8%), which were treated with i.v. fluids and antibiotics. Aspiration pneumonia in two patients and post-sphincterotomy bleeding in one patient were managed conservatively. Surgical intervention was required in 2 cases (0.8%); a patient with oesophageal perforation who underwent an early surgical repair and another with retroperitoneal perforation who required surgery because of clinical deterioration after initial conservative treatment (Table 4).

Two patients died (0.8%); one patient with pancreatic cancer died due to septic shock after inadequate biliary drainage and the other one died after operation for retroperitoneal perforation.

Discussion

We retrospectively analysed the efficacy and safety of diagnostic and especially therapeutic ERCP in a large group of elderly patients for the management of pancreaticobiliary diseases of different aetiology. About half of

Table 3. — Therapeutic interventions (218 procedures)

	N (patients)
ES + plastic stent placement	20
ES + metallic stent placement	32
ES+ bile duct stone clearance	75
ES + bile duct stone clearance + plastic stent placement	26
ES+ nasobiliary tube	5
Plastic stent placement (without ES)	12
Metallic stent placement (without ES)	12
Bile duct dilatation + plastic stent(s) placement	13
Stent replacement	10
Mechanical lithotripsy	12
Stent removal and bile duct clearance	13

ES : Endoscopic sphincterotomy.

Table 4. — Complications and mortality (251 procedures)

Total complications	24/251	9.6%
Pancreatitis	11/251	4.4%
Aspiration pneumonia	2/251	0.8%
Cholangitis	6/251	2.4%
Cholecystitis	2/251	0.8%
Post-sphincterotomy bleeding	1/251	0.4%
Retroperitoneal perforation	1/251	0.4%
Oesophageal perforation	1/251	0.4%
Early surgical intervention	2/251	0.8%
Mortality	2/251	0.8%

our patients suffered from bile duct stones and one third from pancreaticobiliary malignancies. Malignancy is more frequently observed in elderly patients, where due to general condition and comorbidity, non surgical bile drainage is desirable (10).

Success rates in our patients were high. Selective bile duct cannulation and successful endoscopic sphincterotomy, when needed, were performed in more than 90% of cases, although peripapillary diverticula were present in about one third of our patients.

Bile duct clearance from stones was also successful in the majority of our patients, although more than one procedure was required in a considerable number of patients. Failure of common bile duct clearance is mainly due to large stones. Patients of advanced age are more likely to have larger bile duct stones (11) but even in those patients mechanical lithotripsy or other methods of stone fragmentation may be valuable. Mechanical lithotripsy was required in 12 cases in our group of patients. Although stone extraction was not always possible, effective biliary drainage was achieved in nearly all cases. In patients with residual large bile duct stones, biliary stent placement may be the treatment of choice at least temporarily. Although recurrence of cholangitis after stent insertion for stones is common, endoscopic biliary stenting may be safe not only temporarily but also long term in a substantial number of these patients with limited expected survival (12-15).

Safety of diagnostic and therapeutic ERCP has been demonstrated for all age groups in previous studies over

the last two decades (16-19). However, these studies included relatively few elderly patients. The rate of complications after ERCP in our patients was low (9.6%) similar to that reported in these series with younger patients (17,20) despite the higher prevalence of comorbidity in these patients. Also the majority of complications were minor ; only two patients required emergency surgical intervention, the rest being treated conservatively. The advanced age and poor general health of these patients did not increase the morbidity rate after ERCP unlike surgery (6,20,21). Old age and coexisting medical conditions, except cirrhosis, don't affect complications after ERCP in previous studies (22,23).

Rate of post ERCP pancreatitis was low and more importantly, no patient developed severe pancreatitis. Similar rates were demonstrated in previous studies examining safety and efficacy of ERCP in elderly patients (24,25). Pancreatitis is more frequent in younger patients and this could be related to the presence of pancreatic atrophy associated with advanced age (10,17,26). Although elderly patients take more frequently drugs that increase bleeding probability, post sphincterotomy bleeding was very rare in our patients as in other series (24,25) probably due to careful patient selection and pre-procedural correction of any abnormality. Endoscopic sphincterotomy should be avoided in patients who had taken non steroidal anti-inflammatory drugs the week before the procedure.

The main concern in elderly patients usually relates to sedation particularly in those patients with multiple coexistent diseases. A proportion of patients may develop hypoxemia or cardiac arrhythmias during the procedure but these events usually are transient and not clinically significant. Sedation was induced in our patients by IV midazolam and pethidin and the patients were monitored adequately. Sedation did not cause significant complications, despite the advanced age of our patients. Recently sedation with propofol was reported to be superior to midazolam even in octogenarians undergoing ERCP because of better tolerability, shorter recovery time and less desaturation events (27).

In conclusion, ERCP can be performed safely in very old patients with few major adverse effects and negligible mortality. Success rates of both diagnostic and therapeutic ERCP are similar to those reported for younger patients. Advanced age per se should not be regarded as a relative contraindication to ERCP and the decision to perform this procedure should be determined by clinical need.

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