Endoscopic Sphincterotomy—Experience with 110 Patients

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Abstract
During the last two years, 116 endoscopic sphincterotomies (ES) were attempted in 110 patients. The indication for ES was choledocholithiasis in 102 (92%) patients, including 37 (36%) with gallbladder in situ and 65 (64%) post-cholecystectomy patients; the other 8 (7%) were performed for strictures of the lower end of the common bile duct (CBD) with cholangitis (2), insertion of naso-biliary drain (2), restenosis after previous sphincterotomy (1), stone in the cystic duct stump causing cholangitis (1), papillary stenosis (1) and post-cholecystectomy cholangitis with no obvious cause (1). ES was achieved in 113 (97.4%) attempts in 107 (97%) patients and was overall successful in 91% of patients. Of the 95 patients with choledocholithiasis in whom ES could be performed and a follow-up was available, 79 (83%) cleared their CBD. Of 98 patients with choledocholithiasis, 79 (80.6%) finally cleared their CBD of stones. Three patients developed complications, one needing emergency operation. There were no deaths. ES was found to be effective in patients with retained stones and also in patients with choledocholithiasis with gallbladder in situ, especially those who were poor surgical risk.

Key words: Gallstone, choledocholithiasis.

Introduction
Endoscopic sphincterotomy (ES) was first described independently in 1974 by Clausen and Demling from Germany and Kawai from Japan, and is now a well established therapeutic tool in the treatment of choledocholithiasis, especially in the West. There are very few reports on this subject from India. We present our experience of 110 patients who underwent this procedure between January 1987 and March 1989.

Material and Methods
Between January 1987 and March 1989, 110 patients underwent ES. The procedure was performed by one of us (BSA) on an outpatient basis except in those patients who were already admitted when a decision for performing ES was made. Patients were asked to report after an overnight fast. Patients having jaundice or CBD strictures were given prophylactic antibiotics. In most patients no sedation was used, although in a few cases intravenous diazepam and pentazocine were used. Intravenous hyoscine hydrobromide (Buscopan®) was given to achieve duodenal relaxation. An Olympus JF-IT10 duodenoscope (Olympus Corporation, Tokyo) was intubated and the papilla of Vater was cannulated by a sphincterotome (Olympus KD 5). After adequate positioning and bowing a cut of 1–1.5 cm was made using blended current from an electrosurgical unit (Olympus UES-2). An expectant policy was followed and after 1–2 weeks endoscopic retrograde cholangiography (ERC)/T-tube cholangiogram was done to check for ductal clearance. If stones were present the cut was extended with or without basketing in those patients in whom the first ES appeared to be inadequate. A repeat ERC was done after one to two weeks and if the stone was still there it was taken as failure and the patient referred for surgery.

Results
One hundred and sixteen ES were attempted in 110 patients (35 males, 75 females; mean ± SD age 46.4 ± 13.9 years, range 23–83). Choledocholithiasis was the indication for ES in 102 (93%). Other indications were CBD strictures at the lower end with cholangitis (2), nasobiliary drainage (2), one patient had carcinoma of the gallbladder with block at the porta hepatis and the other had a biliary cyst and nasobiliary drain was put in for chemo-dissolution, restenosis after previous ES (1), stone in cystic duct stump with cholangitis (1), post-cholecystectomy cholangitis with no obvious cause (1), and papillary stenosis (1). Of the 102 patients with choledocholithiasis, 65 (63.7%) were post-cholecystectomy patients while 37 (36.2%) had their gallbladders in situ.

Of the 65 patients who had undergone cholecystectomy, 14 (21.5%) had their CBD explored at surgery and were referred with a T-tube in situ, and 4 T-tube cholangiogram showing retained CBD stone. The other reasons for referral were jaundice in 22 (34.6%), pain in 40 (61.5%) and acute cholangitis in 2 (3%). Of the 37 patients with gallbladder in situ, the majority (30; 81.1%) had jaundice, twenty (54%) had acute cholangitis and 24 (65%) had pain. Two patients with gallbladder in situ had advanced pregnancy with cholangitis. In one patient ES was performed after she had bled massively during surgery for CBD stones, leading to termination of the surgical procedure. She also had portal hypertension. Five patients were above 70 years of age and had associated medical illness which constituted contraindications for surgery.

Successful ES
ES was achieved in 113 of 116 (97.4%) attempts in 107 of 110 (97%) patients. In three patients (all with choledocholithiasis) the papilla could not be cannulated because of the presence of juxta-papillary diverticulum. Four of 99 patients with choledocholithiasis successfully cannulated did not report for repeat ERC. Of the remaining 95 patients, 76 (80%) spontaneously cleared
their CBD. Second ES was performed in six patients; in two patients stones passed spontaneously, in one patient basketing was required and in the other three, stones did not pass. Therefore, 79 of 29 (83%) patients in whom ES could be performed and follow-up was available, and 79 of 98 (80.8%) in whom ES was attempted, ultimately cleared their CBD of stones. Of the 14 patients with T-tube in situ, 12 (86%) cleared their CBD of stones. All 19 patients in whom ES failed had large stones (>1.5 cm); 14 of these 19 (73.7%) patients had their gallbladder in situ.

Of the eight patients in whom ES was performed for reasons other than choledocholithiasis, one patient (post-cholecystectomy cholangitis without any apparent cause) did not report for follow-up. Six of the other seven (86%) patients were relieved. Two patients with stricture at the lower end of the CBD and having recurrent episodes of cholangitis were well after a follow-up of 4 months and 5 months respectively. One patient with restenosis after previous ES and having jaundice was well after a follow-up of 5 months. ES was successful in both patients in whom it was performed for putting in a naso-biliary drain. The patient with papillary stenosis who was diagnosed on the basis of post-cholecystectomy symptoms, a dilated CBD (>10 mm) and delayed emptying of dye on ERC (>45 min) was asymptomatic after a follow-up of 18 months. In one patient with stone in cystic duct stump with cholangitis, ES failed to relieve symptoms and the patient was referred for surgery.

Complications

Complications were encountered in only three (2.1%) patients. Two patients had melena lasting 3 and 4 days respectively. Both patients were managed conservatively and did not require blood transfusion. The third patient, a 70 year old male with choledocholithiasis and gallbladder in situ who had acute cholangitis with hypotension and oliguria, underwent ES. He was given cefotaxime 1 g IV 6 hourly. He improved the next day but six days later developed severe cholangitis and hypotension. A cholecystectomy with removal of the stone was performed and the patient improved. He was subsequently discharged.

There were no deaths in the series.

Discussion

Of the 116 attempted ES in this study, 113 (97.4%) were successful. Of the 95 patients with choledocholithiasis in whom ES was achieved, 79 (83%) achieved clearance of their CBD, 80.8% spontaneously. Overall clearance was obtained in 79 of 98 (80.8%) cases. Similar results were reported in most series.

In only six patients, who did not pass their stones spontaneously, the cut was extended by performing a second ES. This figure is less than that reported by others. This is because we were not routinely performing a second ES in patients who did not pass their stones after the first ES. Even then, in only three of six was the CBD cleared after the second ES. One of these required basketing. In 19 of 98 (19.3%) patients with choledocholithiasis, ES failed. In all these patients the stones were large. It has been observed that large stones are difficult to extract by ES.

In this study choledocholithiasis accounted for 93% of all ES performed. In most series this is the most common indication for ES, ranging from 77-96%. In one large series from India, cholecystolithiasis was the indication for ES in 95.8%. Recently ES has been performed in patients with choledocholithiasis with gallbladder in situ and this trend seems to be increasing. Though this appears to be safe and only a few patients develop symptoms subsequently, not all workers agree to this mode of treatment. Older patients and those with contraindications for surgery, pancreatitis or cholangitis are best treated from this treatment.

In our study 33.6% of patients underwent ES with their gallbladder in situ. Most patients in this group had cholangitis or associated medical illnesses. In the series of Sarawat et al., 42.6% of patients undergoing ES had their gallbladder in situ.

ES is an established mode of treatment for patients with retained CBD stones with T-tube in situ. In this series 14 of 65 (21.5%) post-cholecystectomy patients had a T-tube in situ and ES was successful in almost 12 (86%). Failure in two patients was because of large stones. In another Indian series, 25 of 115 (21.7%) patients with choledocholithiasis had T-tube in situ.

Eight patients in this series underwent ES for indications other than choledocholithiasis. It was successful in 6 of 7 patients who came for follow-up. The lone failure was in a patient having stone in the cystic duct stump which was causing cholangitis. We feel that ES should not be performed in this patient and he should have been referred to surgery.

In most series the complication rate of ES is 7-10% with a mortality rate of about 1%. A few studies have reported higher rates for both. In our series early complications were seen in three patients; there were no deaths.

In conclusion, endoscopic sphincterotomy is safe and appears to be an effective treatment in patients with choledocholithiasis, especially in post-cholecystectomy patients and also in patients with gallbladder in situ, who are poor surgical risk or have acute cholangitis. It also appears to be useful in a selected group of patients with non-calculous biliary obstruction.

References

BOOK REVIEW


The author of this book is an internationally renowned gastroenterologist and has displayed the wisdom he has acquired from the knowledge gathered over many decades of continued learning. This has resulted in the third edition of this already popular and well-received book, first introduced in 1969.  

Though designed in four parts, the book presents a nice blend of the relevant aspects in each chapter. The accuracy, brevity and clarity with which the materials are presented make easy reading.  

Unfortunately nutrition and dietetics has remained a branch of medicine in which the knowledge imparted during the medical college years is definitely below expectations for ideal application to fellow human beings, be it in health or disease. This book will be as useful and informative to specialists in any field, including gastroenterologists, cardiologists or nephrologists. The lay public is thirsty to gather information on nutrition, but they fall a prey to incorrect information and propaganda carried through efficient salesmanship of marketed products. This updated edition will undoubtedly be well received, frequently referred to and repeatedly reread. The purchaser will be fully satisfied with the investment made to possess this book.

This book must be made available in the libraries of all colleges dealing with nutrition and dietetics, apart from being a book to be owned by all medically qualified persons. It will be popular not only in developing countries but also in developed countries as it is easily comparable to the best known recent books on the topics covered.

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