Endoscopic Balloon Dilatation *vs.* Sphincterotomy in Cases of Calcular Obstructive Jaundice during Endoscopic Retrograde Cholangio Pancreatography

Mohamed Abdel Rasheed*

ERCP procedure

ERCP was performed in the standard manner using a side-view endoscope (Fujinon ED-250 XT Duodenoscope). Aнer selective cannulation of the common bile duct by the catheter, cholangiography using UrograẌne dye was performed to conẐrm the diagnosis. A 0.035-inch guidewire (Boston ScientiẐc, Corp, MA, USA) was inserted into the bile duct through the catheter. Endoscopic Sphincterotomy was performed with the electrosurgical "cut" or "blend" current (group I).

A dilating balloon (CRE balloon 5.5 cm in length, 1-1.2 cm/1.2-1.5 cm/1.5-2.0 cm in diameter; Boston ScientiẐc) was passed via the pre-positioned guidewire into the bile duct. Using ẑuoroscopic and endoscopic guidance, the balloon was inẑated with sterile saline solution up to the optimal size (at least >10 mm in diameter) and duration (usually 2-6 min) according to the patients' condition and tolerance (group II).

A mechanical lithotripter (BML-4Q; Olympus Optical, Tokyo, Japan) was used to fragment the larger stones. Stone removal was declared as complete if the Ẑnal cholangiogram showed no residual stones. Clinical evaluation for post ERCP pancreatitis was performed on the following day by symptoms and serum amylase. Number of items; procedure duration, success rate and complications were compared between the 2 groups.

Endoscopic bleeding during the procedure was graded as follows

Ooze: Means just oozing of blood at the site of sphincterotomy.

Minimal: Small amount of bleeding that stops spontaneously.

SigniẐcant: Large amount of bleeding that does not stop spontaneously and needs intervention whether by ballooning compression, water washing, cauterization, injection of diluted adrenaline or by any other means.

Post-ERCP complications were graded

Mild complications: required 2 to 3 days of hospitalization.

Moderate complications: required 4 to 10 days of hospitalization.

Severe complications: required more than 10 days of hospitalization, necessitated surgical or invasive radiologic intervention, or contributed to death.

Results

A total of 50 patients with calcular obstructive jaundice were included in the study, divided equally into ES and EBD groups. Male \female ratio was 11\14 and 13\12 in ES and EBD groups respectively. Mean age was 43.8 years in ES *vs.* 46.6 years in EBD group with no diẉerence in between.

Distribution	ES (n:25)	EBD (n:25)
M\F	11\14	13\12
Age	43.8 (33.3-51.6)	46.6 (29.7-55.7)

Table 1: Age and sex distribution.

Acute cholangitis was the commonest clinical presentation (60%) and 10% of patients were accidentally discovered during laboratory or]wb rato

	ES (n:25) N (%)	EBD (n:25) N (%)	XĮ	P
Pancreatic Duct opacification	9 (36%)	4 (16%)	1.663	0.197
CBD diameter	11.67 ± 3.71	11.64 ± 3.30	0.042	0.966
Largest stone diameter	8.92 ± 4.68	9.16 ± 3.86	0.286	0.775
Stone number				
≤ 3 stones	18 (72%)	16 (64%)		

in ES group and in 65 patients from 103 (63.1%) in EBD group with no statistical diwerence [9].

We agree with Liu et al. with overall success rate 96% in ES (610 patients from 637) and 95% (215 patients from 227) in EBD), these higher rates may be due to their strategy which excluded patients with stone diameter more than 15 mm and frequent use of lithotripsy [10]. Similarly, Bergman et al. reported comparable failure rates as shown in 3 patients among 18 in ES group (16.6%) and in 2 patients among 16 in EBD group (12.5%) [11].

HXis disagrees with Fujita et al. who reported lower values of failure rate being 0.7% in ES group (one patient of 144) and 3% in EBD group (4 patients of 138) (P>0.05) [12]. HXis discrepancy could be explained by, much more use of mechanical lithotripsy in their study being 11.8% of patients in ES group and 14.5% in the EBD group *vs.* 8% in ES patients and 4% in EBD group in our study.

Our study highlighted the endoscopic bleeding during the procedure, which was reported more frequently with ES technique than EBD, presented with blood oozing in 5 patients (20%), minimal bleeding in 7 patients (24%) and signiŽcant bleeding in 4 patients (16%) with ES compared to 4 patients (16%) with blood oozing in the EBD group, while minimal or signiŽcant bleeding were not recorded among any patients underwent EBD with a high signiŽcant diwerence inspite of normal bleeding proŽle among the patients (platelet count and prothrombin time) prior to the procedure.

HXe results of the present study were supported by Nelson and Freeman in their study from the United States in which major hemorrhage was observed in 10 of 189 patients (5 percent) undergoing sphincterotomy [13]. Concerning short term complications, our study showed higher rate of post-procedural bleeding among ES group 24% (6 patients), while bleeding was not reported among patients in EBD group which is highly signiŽcant (P<0.001). HXese results were supported by Liu et al. who conclude that bleeding increased in ES group more than EBD group (4.2% *vs.* 0.1%, P<0.00001) [10].

HXese results were supported also by Weinberg et al., who reported

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