Endoscopic retrograde cholangiopancreatography learning curve after advanced endoscopic training

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INTRODUCTION

- Selective deep cannulation of the common bile duct or pancreatic duct is the most important step for successful endoscopic retrograde cholangiopancreatography (ERCP).

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- A learning curve has been demonstrated for ERCP training. The consistent achievement of 80% success at deep biliary cannulation is now regarded as a standard for ERCP training programs.

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- However, it has been rarely reported how long it takes to achieve a cannulation success rate of over 95%, which is rated as an ERCP expert.

Aim

- It is difficult to find a report on the reduction of side effects and complications of ERCP after ERCP training.

- We aimed to changes in cannulation success rate and complication rate of post ERCP trainee.

Method

- From March 1, 2018 to February 28, 2020
- Eulji Medical Center in Daejeon
- Retrospective study
- A total of 522 patients who have naïve papilla

Results

Table 1 Baseline Characteristics of Patients

	Number of patients N=522
Age, mean ± SD, (years)	66.5 ± 16.9
Male, n (%)	279/522 (53.4)
Hypertension	272/522 (52.1)
Stroke	55/522 (10.5)
Diabetes mellitus (DM)	145/522 (27.8)
Chronic kidney disease	58/522 (11.1)
BMI (kg/m^2)	23.6 ± 3.8
Diagosis	
Cholangitis	289/522 (55.3%)
Biliary Pancreatitis	63/522 (12.1%)
Bille duct stricture	54/522 (10.3%)
Cholangiocarcinoma	46/522 (8.8%)
Gallbladder cancer	4/522 (0.8%)
Hepatocellular carcinoma	4/522 (0.8%)
Ampulla of vater cancer	15/522 (2.9%)
Pancreatic cancer	11/522 (2.1%)
Abnormal liver function test	4/522 (0.8%)
Pancreatolith	12/522 (2.3%)
Autoimmune pancreatitis	1/522 (0.2%)
Intraductal papillary mucinous neoplasm	1/522 (0.2%)
Pseudocyst	6/522 (1.1%)
Sclerosing cholangitis	3/522 (0.6%)
Hemobilia	4/522 (0.8%)
Biliary-post surgical problem	5/522 (1.0%)

Results

Table 1 Baseline Characteristics of Patients

	Number of patients N=522
Duodenal diverticulum	134/522 (25.7%)
ASA grade	
I	39/522 (7.5)
II	184/522 (35.2)
III	263/522 (50.4)
IV	36/522 (6.9)
Gastrectomy	
Billorth I	11/522 (2.1%)
Billorth II	19/522 (3.6%)
Billorth II with braun anastomosis	4/522 (0.8%)
Perforation	8/522 (1.5%)
post ERCP pancreatitis	60/522 (11.5%)

Results

Table 2 Cannulation success rate and complications of Patients

	A	B	C	D	E
Cannulation success rate (%)	92	98	95	100	100
Cannulation time (mean ± SD)	7.45 ± 10.68	8.64 ± 12.13	7.88 ± 9.71	5.22 ± 6.28	6.63 ± 8.62
Pancreatitis (%)	18	13	12	10	5
Perforation (%)	3	3	0	1	0.8

A: 1-100 cases; B: 101-200 cases; C: 201-300 cases; D: 301-400 cases; E: 401-522 cases; SD, standard deviation.

Conclusions

- After post ERCP training, the cannulation success rate was higher than expected, but the incidence of complications was high in the first 200-300 cases.

- Even after post training, ERCP should be tracked by trainers and trainees.