Surgeon-performed ERCP experience at academic center: 10-year data

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Introduction: ERCP has increased over time as a diagnostic and therapeutic strategy. While the outcomes performed by gastroenterologists have been well documented, there is a paucity of literature on the safety and efficacy of ERCP performed by fellowship-trained endoscopic surgeons.

Methods: Retrospective review of adult and pediatric ERCP performed by three fellowship-trained flexible endoscopy surgeons at Jackson Memorial Hospital, an academic tertiary care center in the US, between August 2012 and August 2022. Inclusion criteria included inpatients and outpatients, who underwent a completed or attempted ERCP by these surgeons during that period. Data collected included demographic data, indications for the procedure, procedure-specific data and 30-day complications. All analyses were performed using SAS, version 9.4

Results: 1318 cases were performed during the study period. 87.2% were adults, mean age was 46.7 years and 62.6% had no prior ERCP. The most common indications were choledocholithiasis and liver transplant-related complications. 84% were performed under general anesthesia. Double wire cannulation (DW) was attempted in 20.4% and it was successful 93% of the time. Mean duration was 36.6 minutes. Overall complication rate was 3.2% and there were no ERCP-associated mortalities. Table 1 demonstrates that on univariate analysis, sphincterotomy, DW cannulation and procedure duration were associated with increased risk of complications, while prior ERCP and stent removal were associated with decreased risk. On multivariate analysis, only procedure duration was associated with increased risk.

Conclusion: We demonstrate that ERCP is a safe procedure, with high success rate, when performed by fellowship-trained surgeons at an academic center.

Table 1. Unadjusted Associations of Clinical and Procedural Characteristics with Post-ERCP Complication

	OR (95% CI)	Test statistic*	p-Value
Age (per year increase)	0.99 (0.97, 1.00)	2.38	0.1227
Pediatric (Y vs N)	1.86 (0.88, 3.95)	2.60	0.1070
Gender (F vs M)	1.58 (0.85, 2.98)	2.08	0.1493
Previous ERCP (Y vs N)	0.21 (0.08, 0.54)	10.45	0.0012
Indication for ERCP			
Choledocholithiasis	Ref	Ref	Ref
Stricture/leak post OLT	0.61 (0.29, 1.31)	1.61	0.2047
Malignancy	0.47 (0.11, 2.02)	1.04	0.3080
Mirizzi syndrome	4.68 (0.53, 41.69)	1.91	0.1668
Cholangitis	<0.001 (<0.001, >999.999)	0.0001	0.9925
Post-op leak	0.53 (0.12, 2.30)	0.72	0.3971
Other	0.73 (0.27, 1.94)	0.41	0.5240
Anesthesia (General vs Sedation)	1.83 (0.65, 5.16)	1.28	0.2570
Procedure performed			
Sphincterotomy (Y vs N)	4.23 (1.77, 10.10)	10.57	0.0011
Stone removal (Y vs N)	0.83 (0.54, 1.26)	0.76	0.3819
Stricture dilation (Y vs N)	0.83 (0.35, 2.00)	0.17	0.6803
Brushings (Y vs N)	0.76 (0.18, 3.20)	0.14	0.7073
Stent removal (Y vs N)	0.13 (0.03, 0.54)	7.91	0.0049
Stent insertion (Y vs N)	1.07 (0.57, 1.98)	0.04	0.8426
Double wire (Y vs N)	3.25 (1.75, 6.02)	13.96	0.0002
Spyglass (Y vs N)	1.49 (0.20, 11.38)	0.15	0.6997
# of interventions (per intervention increase)	1.23 (0.94, 1.62)	2.23	0.1358
Procedure duration (per minute increase)	1.03 (1.01, 1.04)	15.98	<0.0001

*Wald Chi-Square

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