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FACTORS ASSOCIATED WITH COMPLETE CLEARANCE OF DIFFICULT COMMON BILE DUCT STONES AT THE SECOND ERCP AFTER A TEMPORARY BILIARY STENTING

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BACKGROUND & AIMS

Temporary biliary stenting is an effective strategy in the treatment of difficult common bile duct (CBD) stones. The aim of the present study was to evaluate the factors associated with complete cleaning of the CBD in the second endoscopic retrograde cholangiopancreatography (ERCP).

METHODS

- **Retrospective cohort-study, which consecutively included all patients submitted to ERCP between 2013-2019, with difficult CBD stones.**
  - **Difficult CBD stones were considered in the presence of multiple or large (> 15mm) stones.**
  - **Plastic pigtail stents (7 or 10 Fr) were placed with the proximal ends above the stones.**
- **Complete clearce rate and factors associated with complete clearance were evaluated using univariate and multivariate analyses.**

RESULTS

Table 1 *– Patient demographics and procedure related factors*

BASELINE CHARACTERISTICS	TOTAL (n=49)	BASELINE CHARACTERISTICS	TOTAL (n=49)
Age, years (μ±SD)	75.6 ± 11.5	Previous sphincterotomy, n (%)	14 (28.6)
Sex, female, n (%)	26 (53.1)	Periampullary diverticulum, n (%)	13 (26.5)
Main symptom, n (%)		Stent diameter, n (%)	
• Fever, n (%)	18 (36.7)	• 7 Fr	37 (75.5)
• Imaging abnormality, n (%)	15 (30.6)	• 10 Fr	12 (24.5)
• Abdominal pain, n (%)	7 (14.3)	Number of biliary stents placed, n (%)	
• Jaundice, n (%)	7 (14.3)	• Single	38 (77.6)
• Vomiting, n (%)	2 (4.1)	• Double	11 (22.4)
Concomitant cholangitis, n (%)	21 (42.9)	Multiple stones, n (%)	30 (61.2)
Presence of gallbladder stones, n (%)	21 (42.9)	Initial stone size, mean (SD), mm	15.7 (4.7)
Previous cholecystectomy, n (%)	18 (36.7)	Initial CBD diameter, mean (SD), mm	16.3 (4.1)

μ,mean; SD, standart deviation. CBD, Common bile duct.

Stone size (7Fr-15.0mm vs 10Fr-18.0mm; p = 0.061) and CBD diameter (7Fr-15.8mm vs 10Fr-17.7mm; p=0.179) were not significantly different between the 2 stent types.

Table 2 *– Factors associated with incomplete clearance of difficult common bile duct stones*

PROCEDURE RELATED FACTORS	COMPLETE CLEARANCE		Univariate p value	Multivariate p value (OR)
	Yes (n=37)	No (n=12)		
Age > 80 years, n (%)	**13 (35.1)**	**9 (75.0)**	**0.016**	**0.017 (8.6)**
Sex, female, n (%)	18 (46.8)	8 (66.7)	0.227	
Presence of gallbladder stones, n (%)	15 (62.5)	6 (28.6)	0.681	
Previous cholecystectomy, n (%)	13 (35.1)	5 (41.7)	0.738	
Periampullary diverticulum, n (%)	11 (29.7)	2 (16.7)	0.474	
Multiple stones, n (%)	22 (61.1)	8 (72.7)	0.722	
Double stents, n (%)	7 (18.9)	4 (33.3)	0.427	
10-Fr stents, n (%)	**6 (16.2)**	**6 (50.0)**	**0.018**	**0.023 (7.8)**
Initial stone size, mean (SD), mm	15.1 (5.0)	17.7 (4.0)	0.112	
Stone size reduction, median (IQR), mm	5.0 (14)	5.0 (12)	0.882	
Initial CBD diameter, mean (SD), mm	**15.4 (3.9)**	**18.7 (3.9)**	**0.018**	
CBD diameter reduction, median (IQR), mm	2.0 (3.0)	0 (4.0)	0.199	
Interval, mean (SD), days	3.1 (2.5)	2.9 (3.0)	0.850	

μ,mean; SD, standart deviation; OR, Odds ratio. CBD, Common bile duct; p<0.05 meaning statistical significance. The p value of Hosmer – Lemeshow test was 0.246.

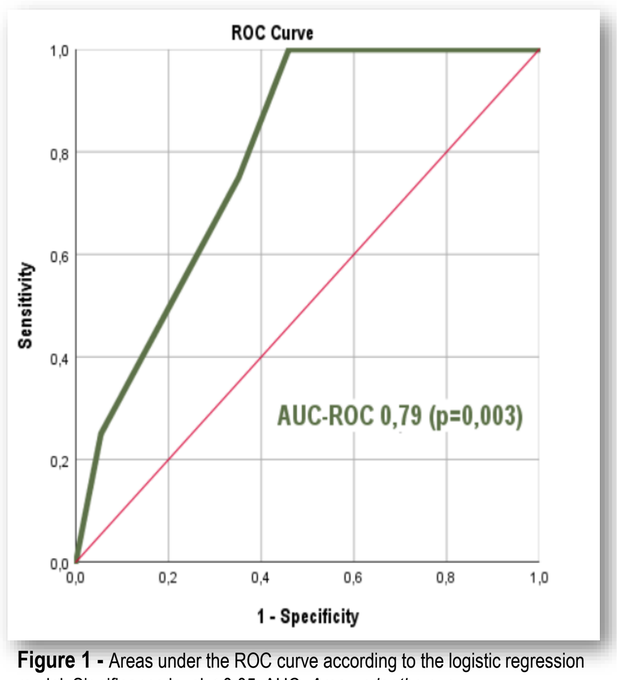

Figure 1 - Areas under the ROC curve according to the logistic regression model. Significance level < 0.05. AUC, *Area under the curve.*

CONCLUSION

The use of 7Fr pigtail stents was associated with a higher rate of complete clearence. Older age (>80y) and 10Fr stents were independent predictors of incomplete clearance in the second ERCP.

REFERENCES

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