



CAN WE PREDICT WHO REQUIRE MULTIPLE SESSIONS OF ENDOSCOPIC DILATATION OF BENIGN BILIARY STRICTURE IN CHRONIC PANCREATITIS? - A TERTIARY CARE EXPERIENCE

Gastroenterology

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ABSTRACT

Background: Endoscopic stricture dilatation with biliary stenting has been one of the effective treatment methods for symptomatic benign biliary stricture secondary to chronic pancreatitis^{1,2}. **Objectives:** The objective of this study was to compare the profile of patients with benign biliary stricture, who symptomatically responded after multiple sessions of dilatation with the profiles of patients who responded after single dilatation and identify the risk factors associated with requirement of multiple dilatations. **Patients And Methods:** Data from patients prior to and after the stricture dilatation was collected and was analyzed for the improvement of symptoms relative to number of dilatations performed. **Results:** 40 male (97.6%), 1 female (2.4%) with biliary stricture due to chronic pancreatitis were included in this study over a period of 2 years. Out of these 41 patients, 11 (26.8%) presented with calculi and 30 (73.2%) didn't have calculi. 14 (34.1%) with mean alkaline phosphatase (ALP) of 427.21 (290.5) were relieved of symptoms after 1st dilatation. 27 (65.9%) with the mean ALP of 241.63 (171.6) were relieved of symptoms after multiple dilatations. Apart from the difference in mean serum ALP levels, other patient characteristics such as age, etiology of pancreatitis, smoking habit, bilirubin levels were not significantly different between the two groups. **Conclusion:** ALP was significantly higher in the group of patients that responded with single dilatation. We could not identify any other significant predictors for the requirement of multiple dilatations.

KEYWORDS

Benign biliary stricture; Biliary stricture dilatation; Chronic pancreatitis;

INTRODUCTION:

Symptomatic Benign biliary stricture (BBS) is seen in 10-30 % of chronic pancreatitis (CP)³ cases. It can be managed conservatively, endoscopically, or by surgery. The pathophysiology of stricture varies. It can be due to close anatomic proximity of distal CBD with the head of pancreas where edema, pseudocyst formation in head results in inflammatory type of BBS. The inflammatory strictures are mainly treated by conservative methods or by the management of pseudocyst. The strictures that do not respond to the above measures are managed by endoscopic dilatation⁴. Whereas, encasement of the bile duct by fibrogenic process (as a part of CP) result in fibrous biliary strictures, which are challenging to manage, and usually require multiple endoscopic dilatations⁵, use of metal stents or rarely by surgical management⁶.

Objectives:

- 1) To compare the profile of patients with BBS in CP, who symptomatically responded after multiple sessions of dilatation with those of patients who responded after single dilatation.
- 2) Identify the risk factors associated with requirement of multiple dilatations.

MATERIALS AND METHODS:

Data from patients prior to and after the endoscopic biliary stricture dilatation over a period of 2 years, from 2021 to 2023 at a tertiary care centre in South India was collected retrospectively. Patient's clinical, imaging and laboratory characteristics, improvement of symptoms, number of dilatations performed and the amount of biliary dilatation achieved was collected and analyzed.

Patient characteristics were compared between patients who required multiple dilatations versus those who improved with a single

dilatation.

RESULTS:

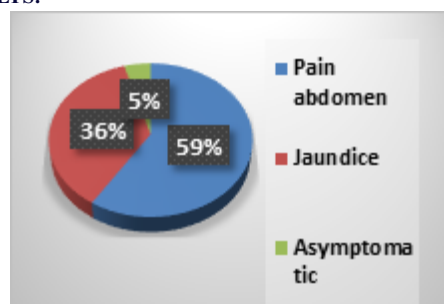


Figure1: Patient symptoms

Table 1: Patient Characteristics And Comparisons

	Single dilatation (n=14) Mean (SD)	Multiple dilatations (n=27) Mean (SD)	T value/ Chi-square value(P value)	Significance
Age	42.64 (7.77)	44.48 (2.01)	0.669	0.5 (NS)
Gender (M/F)	14/0	26/1	0.53	NS
Alcoholism (Yes/No)	10/4	19/8	0.05	NS
Smoker (Yes/No)	8/6	19/8	0.397	NS

Calculi (Present/ Absent)	5/9	6/21	0.85	NS
Total Serum Bilirubin	3.38 (3.7)	3.31 (4.6)	0.359	0.7 (NS)
Direct Bilirubin	2.26 (1.9)	1.67 (2.5)	0.765	0.4 (NS)
ALP(IU/L)	427.21 (290.5)	241.63 (171.6)	2.578	0.01 (S)
Distal CBD / Long segment stricture	9/5	21/6	0.355	NS
CBD Dilatation	10.64 (2.9)	10 (2.01)	0.805	0.4 (NS)

DISCUSSION:

A total of 41 patients (40 males/ 1 female) of CP of any etiology (29{79%} alcohol, 12 {other}) were managed endoscopically by serial dilatation until improvement of symptoms. The mean age of population was 43.8+/-8Y

The most common symptom reported was pain abdomen (59%), followed by jaundice (36%) and 5% were asymptomatic. In 31(76%) the stricture was in distal CBD, where as in 24% it was of the long segment of CBD. In 11 patients (27%) stricture was associated with choledocholithiasis. These characteristics were similar to data from previous studies⁷.

The mean CBD dilatation achieved for of all the patients in the study was 10.23 ± 2.31 mm. 14 patients (34.1%) were asymptomatic by the 1st dilatation with mean CBD of 10.64 ± 2.9 mm. More than one dilatation was needed in 27 patients (65.9%) with achieved mean CBD dilatation of 10 ± 2.01 mm.

We observed that the group of patients that needed a single session of dilatation versus the group that required multiple sessions to achieve symptom relief differed significantly in their respective mean serum alkaline phosphatase (ALP) levels. The mean serum ALP was 427.21 (290.5) U/L in the group that required a single sitting versus 241.63 (171.6) U/L in the group that required multiple sessions. This difference in ALP levels between both the groups was statistically significant (P<0.01).

The possible rationale behind this relationship between higher mean ALP levels and lesser number of dilatations could be because strictures with high inflammation have elevated ALP levels and they respond better to dilatation compared to fibrosed strictures³.

In our study we noted that other patient characteristics such as age, etiology of pancreatitis, smoking history, serum bilirubin levels, presence of cholelithiasis, length of the stricture did not differ significantly between both the groups.

CONCLUSIONS:

Serum ALP was higher in the group of patients that responded with single sitting of CBD dilatation and lower in the group that required multiple sittings, suggesting that lower levels of serum ALP helps in predicting that the patient may require multiple sittings of dilatations to achieve relief in symptoms.

Our study is limited by small sample size and skewed gender distribution. Further studies with higher sample size are needed to identify predictors of difficult to treat CBD strictures.

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