

# Response to Biliary Sphincterotomy in Patients with RUQ Abdominal Pain Following Cholecystectomy

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## BACKGROUND

Persistent or recurrent abdominal pain in post-cholecystectomy patients has multiple causes. One cause may be Sphincter of Oddi dysfunction (SOD) or papillary stenosis, so post-cholecystectomy patients with recurrent or persistent pain are often referred for biliary sphincterotomies in hopes of symptom resolution. Even after sphincterotomy, some patients will experience persistent or recurrent symptoms.

The study aims to assess the symptom management after endoscopic sphincterotomy in a subgroup of patients with post-cholecystectomy right upper quadrant pain.

Furthermore, the patient data will be stratified according to demographic data (age, gender, race, BMI and inpatient status) to observe difference in symptom management between patient differentiators.

## METHODS

This study is a retrospective review from 2015 to 2018 of post-cholecystectomy patients with right-upper quadrant (RUQ) abdominal pain refractory to medical treatment.

- Each patient had undergone biliary sphincterotomy by single endoscopist
- Exclusion: pancreaticobiliary malignancies or prior history of pancreatitis
- Deidentified data was collected including:
  - Demographic information: age, gender, race, BMI
  - Post-procedure admission status and length of stay if admitted
  - Symptom resolution post-procedure
  - Response to post-procedure amitriptyline treatment.
- Patient response to procedure and symptoms resolution were collected alongside length of stay and pharmacological treatment.

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## RESULTS

The charts of 49 patients were available for analysis. Demographic values and symptoms response to biliary sphincterotomy is displayed in Table 1. Eleven (22%) obtained complete symptom resolution, 53 (71%) had some symptom improvement, and 3 (6%) has no improvement. No differences were observed between demographic values and combination of post-procedure responses (Tables 2 and 3).

Variables	Overall N=49	No Improvement N=3	Improvement only N=35	Resolved N=11	p-value
Age, years (median, IQR)	54.9 (45.4, 65.9)	66.5 (27.2, 70.3)	52.6 (44.3, 60.2)	55.8 (45.4, 71.4)	0.66
Gender (male, %)	5 (10.2)	0 (0.0)	3 (8.57)	2 (18.2)	0.70
Race (non-Caucasian, %)	7 (14.3)	0 (0.0)	4 (11.4)	3 (27.3)	0.46
BMI, kg/m <sup>2</sup> (median, IQR)	27.2 (23.5, 29.1)	27.2 (25.8, 28.6)	27.2 (23.5, 29.7)	25.1 (19.1, 29.1)	0.49
Inpatient (yes, %)	6 (12.2)	0 (0.0)	3 (8.57)	3 (27.3)	0.30

Table #1: Symptom management post-sphincterotomy stratified by demographic data

Variables	No Improvement N=3	Improvement or resolved N=46	p-value
Age, years (median, IQR)	66.5 (27.2, 70.3)	54.9 (45.4, 64.6)	0.86
Gender (male, %)	0 (0.0)	5 (10.8)	1.0
Race (non-Caucasian, %)	0 (0.0)	7 (15.2)	1.0
BMI, kg/m <sup>2</sup> (median, IQR)	27.2 (25.8, 28.6)	27.2 (23.4, 29.3)	0.72
Inpatient (yes, %)	0 (0.0)	6 (13.0)	1.0

Table #2: No improvement vs. symptom improvement

Variables	No Improvement or Improved N=38	Resolved N=11	Or (95% CI)	p-value
Age, years (median, IQR)	53.7 (44.4)	55.8 (45.4, 71.4)	1.96 (0.41, 9.23)	0.82
Gender (male, %)	3 (7.89)	2 (18.2)	2.17 (0.16, 29.7)	0.79
Race (non-Caucasian, %)	4 (10.5)	3 (27.3)	2.54 (0.38, 16.9)	0.22
BMI, kg/m <sup>2</sup> (median, IQR)	27.2 (23.9, 29.3)	25.1 (19.1, 29.1)	0.50 (0.11, 2.28)	0.37
Inpatient (yes, %)	3 (27.3)	3 (27.3)	5.04 (0.68, 37.5)	0.11

Table #3: No improvement and improvement vs. symptom resolution

## DISCUSSION

- The majority (71%) of patients had symptom improvement after biliary sphincterotomy and 22% achieved complete resolution
- There was no association with patient demographic values and post-procedure responses
- Two trends observed did not achieve statistical significance: symptom improvement or resolution was more likely in males and those admitted after the procedure
- OR's relay that if you have an increased BMI (>25), the odds of symptom resolution decreases
  - Inversely, if you are aged greater than the median, are a male, or are non-Caucasian, then the odds are increased that you would experience symptom resolution
- It is most likely that a patient who remains in-patient status after sphincterotomy saw the highest increase in achieving symptom resolution

## CONCLUSION

In patients complaining of biliary pain post-cholecystectomy with failure to respond to medical management, papillary stenosis and SOD should be considered. For these patients, at least some symptom improvement was seen in 93%. It can be said that there is an underlying association towards achieving symptomatic resolution when stratifying for demographic data. Although a statistical significance was not observed for symptomatic resolution, it can be said that certain people will be more likely to experience resolution with a sphincterotomy than others.

## LIMITATIONS

Confounding variables include concurrent medication usage including narcotics, SSRI's, SNRI's and other medication classes. Limitations also exist on chart availability and patient follow-up post-procedure.