Symptomatic Choledocholithiasis After Cholecystectomy

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Background

- Clinical manifestations of choledocholithiasis include biliary colic, obstructive jaundice, pancreatitis, and acute cholangitis
- Secondary common bile duct (CBD) stones are common when the gallbladder is intact or after recent cholecystectomy (CCY) whereas recurrent stones develop >3 years after surgery[1,2]
- Patients with retained CBD stones after CCY may be asymptomatic for years and there is limited data on their pattern of presentation
- Despite known predisposing conditions and risk factors for recurrent biliary disease, the role of intraoperative cholangiography (IOC) during CCY remains controversial

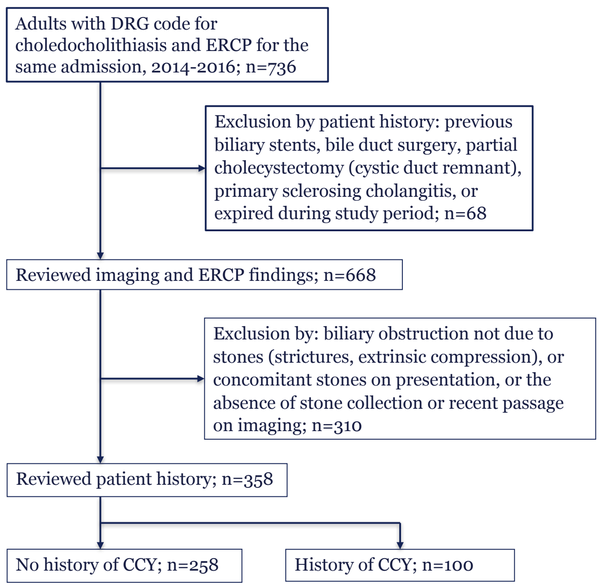
Aims

- To compare incidence and pattern of presentation of symptomatic choledocholithiasis in patients with and without prior CCY
- To evaluate characteristics of and risk factors for recurrent biliary disease in post-cholecystectomy patients

Methods

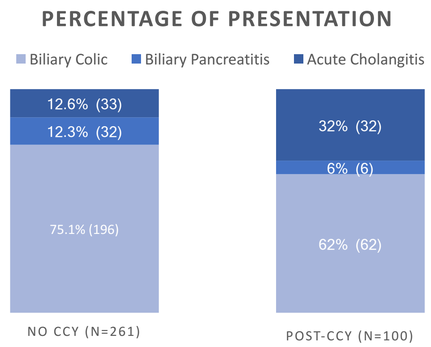
- Retrospective chart review of patients with choledocholithiasis presenting with biliary colic, acute pancreatitis, or acute cholangitis at a secondary and tertiary care center between January 2014 – December 2016
- The following patient data was collected: demographics, history, laboratory data, imaging, and endoscopic retrograde cholangiopancreatography (ERCP) results

Figure 1. Flowchart of patient selection



Results

Figure 2. Comparing clinical presentations of choledocholithiasis



* 3 of the 258 patients with no CCY presented with concomitant biliary pancreatitis and acute cholangitis

- 27.9% (100/358) of patients who presented with symptomatic choledocholithiasis had a prior cholecystectomy
- There was a disproportionate, statistically significant presentation of acute cholangitis in post-cholecystectomy patients
  - Acute Cholangitis- p< 0.001
  - Biliary Colic- *p*= 0.008
  - Biliary Pancreatitis- p= 0.078

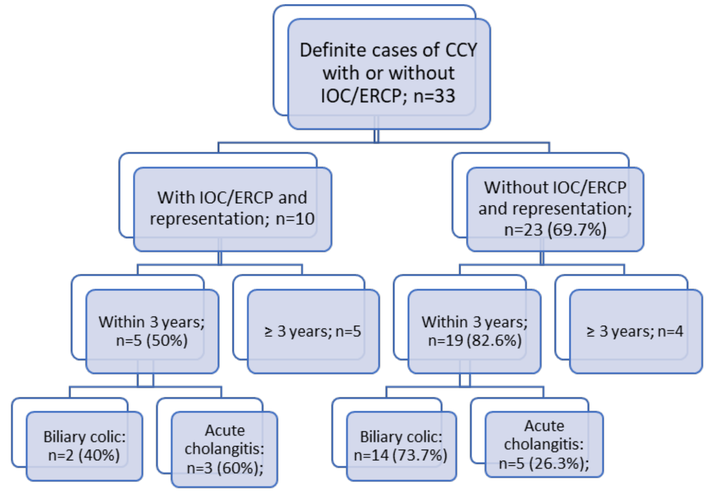
Figure 3. Demographic and clinical case data

Patients		No CCY (n=258)	Post-CCY (n=100)	*P*-value
Sex	Male	150 (58.1%)	66 (66%)	0.174
	Female	108 (41.9%)	34 (34%)	
Race	Caucasian	189 (73.3%)	76 (76%)	0.596
	African American	34 (13.2%)	11 (11%)	
	Latino	12 (4.7%)	4 (4%)	
	Asian	20 (7.8%)	9 (9%)	
	Not Reported	3 (1.2%)	0 (0%)	
Mean Age (years)		62.4	64.6	0.352
Mean BMI		28.8	29.6	0.299
Clinical Conditions	Rapid Weight Loss		4	
	Cirrhosis		2	
Cholestasis- Total cases with elevated lab value	ALP		87	
	Total Bilirubin ≥ 2		55	
Maximum CBD Diameter:	≤ 10 mm		21 (21%)	
	> 10 mm		76	
	Not Reported		3	
Presence of Periampullary Diverticulum		50 (19.38%)	26 (26.0%)	0.085
Median recurrence after cholecystectomy*			210 days (range 6-5160)	
< 3 years			24 (80%)	
≥ 3 years			6	

*Only representative of patients with confirmed procedure dates (n=30)

- No significant difference in sex, race, age, BMI, or presence of periampullary diverticulum
- Few post-cholecystectomy patients had clinical conditions associated with formation of sludge or microlithiasis
- Some patients did not have laboratory data or a wide common bile duct to suggest cholestasis due to CBD stones
- Combining patients with a confirmed CCY date, imaging, and patient reported history, 34 had symptomatic choledocholithiasis requiring ERCP within 3 years from CCY as compared to 41 after 3 years

Figure 4. Comparing incidence and pattern of presentation in definite cases with or without perioperative ERCP or IOC during CCY



- 69.7% (23/33) of patients with symptomatic choledocholithiasis did not have perioperative bile duct evaluation with prior CCY
- Although the incidence of presentation within 3 years was 32.6% higher in patients without IOC/ERCP during cholecystectomy, it was not statistically significant (p= 0.0536)
- 5 of 19 patients without perioperative ERCP/IOC presented with acute cholangitis within 3 years of CCY

Conclusions

- Recurrent biliary obstruction due to post-CCY choledocholithiasis is not uncommon
- The disproportionate prevalence of acute cholangitis in post-CCY patients is multifactorial
- Limitations include: data collection capturing only patients with complications, lack of confirmed procedure dates and perioperative ductal evaluation in all patients, and skewed pattern of presentation given tertiary referral center
- Given the frequency of gallstone-related disease recurrence within 3 years after CCY, the absence of significant risk factors, and the lack of definitive cholestasis on laboratory data and imaging, the role of intraoperative cholangiography should be re-evaluated in future studies
- Consider a prospective study on recurrent biliary disease post-CCY to determine a cost-effective analysis and risk-benefit ratio of routine IOC

References

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