Can we decrease recurrent cholecystitis after removal of percutaneous transhepatic cholecystostomy?

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Disclosures for all authors

- **CONFLICTS OF INTEREST**

- All authors do not have and have not had a financial interest or other relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria, ownership interest, or other financial benefit.

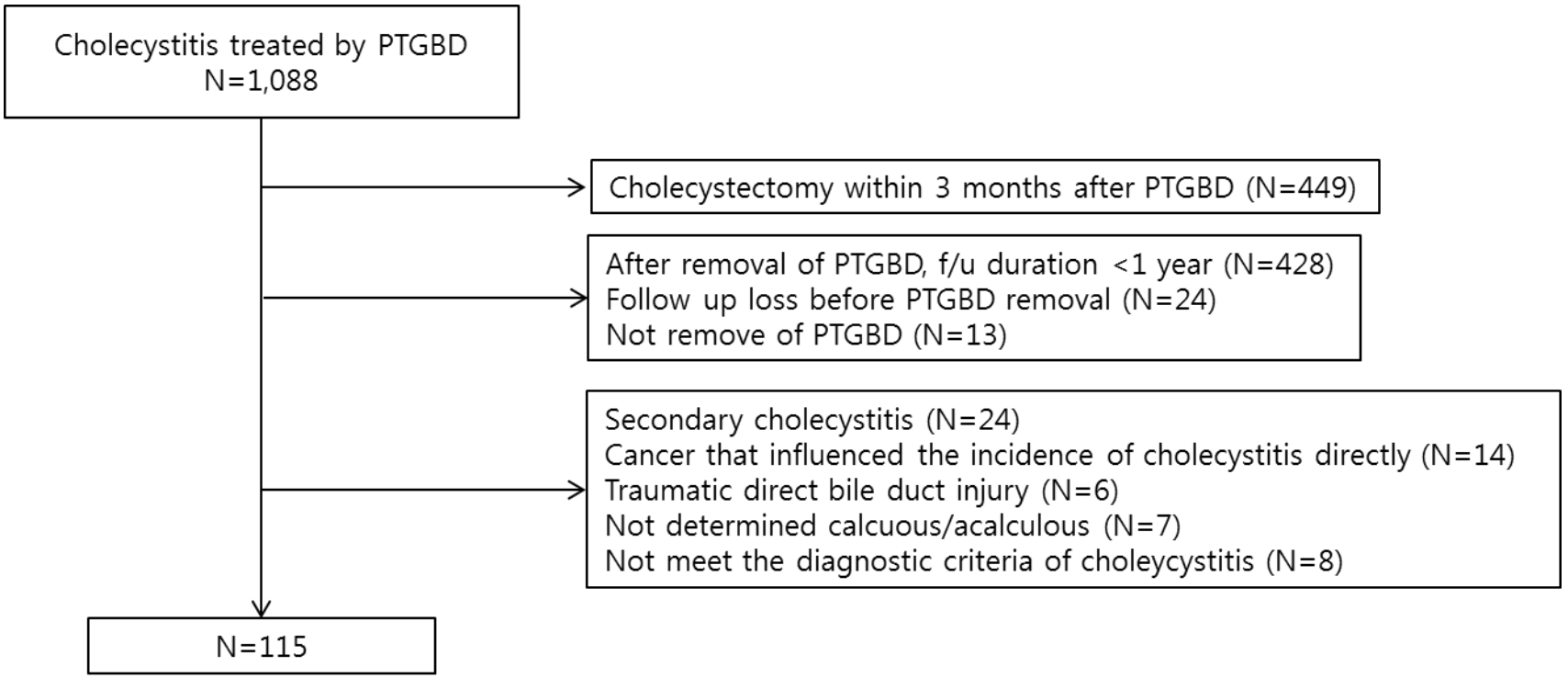
Background and Aim

- Cholecystectomy is the treatment of choice for acute cholecystitis, but many patients with comorbidities cannot undergo this procedure. Percutaneous transhepatic gallbladder drainage (PTGBD) insertion is another treatment option for such patients, but it is associated with a relatively high risk of recurrent cholecystitis.

- Learning objectives and/or the stated purpose.
- (1) To evaluation of the role of endoscopic sphincterotomy on the recurrence of cholecystitis.
- (2) To evaluate the factors on reducing the recurrence of cholecystitis.

Patients and methods

- Patients who underwent PTGBD insertion for cholecystitis, between January 2011 and April 2018, at Kyungpook National University Hospital, Republic of Korea, were retrospectively analyzed.



Results

Baseline demographic and clinical characteristics of the patients

Characteristic	Patients who underwent PTGBD[a] (n=115)
Gender, male, n (%)	68 (59.1)
Age, years, mean ± SD	73.2 ± 10.8
Calculous, n (%)	71 (66.1)
Gallstone, n (%)	67 (56.5)
Size ≥ 1cm	14 (12.2)
Size < 0.5cm	44 (38.3)
Solitary	22 (19.1)
Cystic duct stone, n (%)	9 (7.8)
Sludge, n (%)	24 (20.9)
Charlson Comorbidity Index score, mean ± SD	4.6 ± 2.0
Perforation, n (%)	12 (10.4)
CBD[b] stone, n (%)	21 (18.3)
Combined ERCP, n (%)	41 (35.7)
PTGBD indwelling time, days	151.4 ± 285.2
PTGBD ≥ 6 weeks, n (%)	89 (77.4)
Follow-up cholangiogram, n (%)	67 (58.3)
Clamping of PTGBD before removal, n (%)	41 (35.7)
Migration of PTGBD, n (%)	29 (25.2)
WBC[d] count, cells/μL, mean ± SD	13,196 ± 6,225.0
CRP, mg/dL, mean ± SD	15.0 ± 9.5
Bilirubin, serum, mg/dL, mean ± SD	1.9 ± 2.3
Duration of follow up, days, mean ± SD	1212.6 ± 633.9 (range, 369-2,774)

Baseline demographic and clinical characteristics of the patients [a] PTGBD: percutaneous transhepatic gallbladder drainage. [b] CBD: common bile duct. [c] ERCP: endoscopic retrograde cholangiopancreatography. [d] WBC: white blood cell.

Univariate analysis of the clinical factors influencing recurrent cholecystitis

Clinical factors	Non-recurrent cholecystitis (n=95)	Recurrent cholecystitis (n=20)	p value
Gender			0.679
Male, n (%)	57 (60.0)	11 (55.0)	
Age, years, mean ± SD	72.5 ± 10.7	76.4 ± 10.7	0.149
Calculous, n (%)	63 (66.3)	14 (70.0)	0.750
Gallstone, n (%)	53 (55.8)	14 (70.0)	0.241
Size ≥ 1cm	12 (22.6)	2 (20.9)	0.716
Size < 0.5cm	34 (64.2)	10 (71.4)	0.756
Solitary	19 (35.8)	3 (21.4)	0.359
Cystic duct stone	5 (5.3)	4 (20.0)	0.048
Sludge, n (%)	21 (22.1)	2 (10.0)	0.356
Charlson Comorbidity Index score, mean ± SD	4.6 ± 2.1	5.0 ± 1.3	0.215
Perforation, n (%)	11 (11.6)	1 (5.0)	0.689
CBD stone, n (%)	19 (20.0)	2 (10.0)	0.523
Combined ERCP[a], n (%)	35 (36.8)	6 (30.0)	0.561
PTGBD indwelling time, days, mean ± SD	141.8 ± 283.9	196.9 ± 294.3	0.435
PTGBD [b] ≥ 6 weeks, n (%)	73 (76.8)	16 (80.0)	1.000
Follow-up cholangiogram, n (%)	58 (61.1)	9 (45.0)	0.186
Clamping of PTGBD before removal, n (%)	36 (37.9)	5 (25.0)	0.274
Migration of PTGBD, n (%)	20 (21.1)	9 (45.0)	0.025
WBC[c] count, cells/μL, mean ± SD	13,508.2 ± 6,537.5	11,713.0 ± 4,272.5	0.243
CRP, mg/dL, mean ± SD	15.3 ± 9.2	13.6 ± 10.9	0.466
Bilirubin, serum, mg/dL, mean ± SD	2.1 ± 2.5	1.1 ± 0.7	0.002

[a] ERCP, endoscopic retrograde cholangiopancreatography. [b] PTGBD: percutaneous transhepatic gallbladder drainage.
[c] WBC: white blood cell. [d] CRP: c-reactive protein.

Multivariate analysis of recurrent cholecystitis

Variable	OR	95% CI	p value
The presence of cystic duct stone	4.493	1.37-14.69	0.013
Migration of catheter	4.451	1.70-11.65	0.002
Bilirubin, serum	0.691	0.45-1.07	0.101

Conclusion

- To reduce the incidence of recurrent cholecystitis after PTGBD insertion, caution for inadvertent dislodging of the PTGBD is warranted. Additionally, reconsidering cholecystectomy for cystic duct stones may prevent recurrent cholecystitis.