

Complications of cholecystectomy

- Probably unrelated to cholecystectomy
 - Bloating
 - Burping
 - Nausea
 - Chronic pain
 - Constipation
 - Deranged LFTs in absence of CBD stones

Post-cholecystectomy Pain

- Mostly because the gallstones were incidental and not the cause of the patient's pain in the first place
- 70-80% due to non-biliary GI causes
 - Functional dyspepsia
 - GORD
 - Gastritis/duodenitis/ulcer
- Biliary causes
 - CBD stones
 - Sphincter of Oddi dysfunction
 - Remnant gallbladder with stones (rare)
 - Dropped stones with abscess formation (rare)
- Other causes
 - Musculoskeletal - costochondritis, abdominal wall neuralgia

Sphincter of Oddi Dysfunction

- 1% post cholecystectomy
- 10-20% of patients with post-cholecystectomy pain
- Medical treatment (calcium channel blockers, nitrates) - poor efficacy
- Type 1 - high chance of success with endoscopic sphincterotomy
- Type 2 - consider manometry +/- HIDA scan prior to endoscopic schincterotomy
- Type 3 - low chance of success with endoscopic sphincterotomy (not recommended)

Table 38.3

Milwaukee Biliary Group Classification

Group	Biliary-Type Pain	Abnormal LFTs*	Dilated CBD†
I	+	+	+
II	+	One or two of the above	
III	+	None of the above	

Alternative Therapies

Alternative therapies

- Laparoscopic cholecystectomy is a safe, routine, standard-of-care treatment for symptomatic gallstones around the world
- Some patients with symptomatic gallstones are unfit for surgery or unwilling for cholecystectomy

Alternative therapies

Oral dissolution therapy

- Works better for small <1cm, cholesterol stones without calcification, with mild symptoms
 - 10% of patients with symptomatic stones
- Need patent cystic duct (check with HIDA scan)
- Ursodeoxycolic acid
 - solubilizes cholesterol from the stone
 - 10mg/kg daily in 2-3 divided doses
 - Take for at least 6 months and at least 3-6 months after stone dissolution
 - Effect is slow (up to 1mm per month) so may take 2-3 years, but symptoms may improve within a few weeks, without complete dissolution of stones
 - May be effective in around 30-50% of patients with small, favorable stones
 - Calcified stone response much lower (6% in one Korean study)
 - Longterm recurrence >50-70%

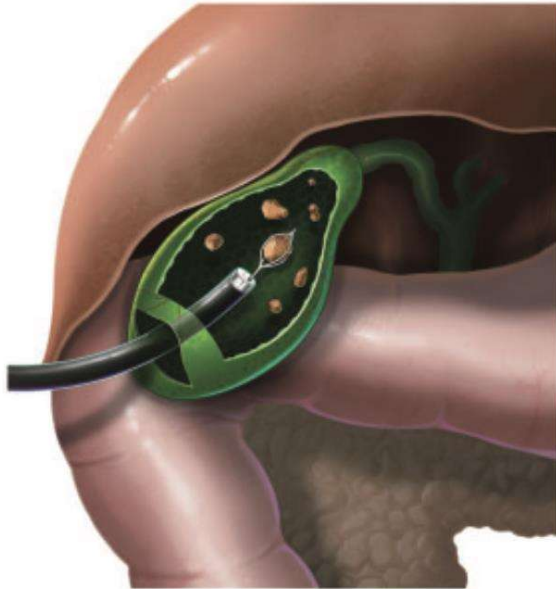
Alternative therapies

- Percutaneous cholecystostomy and stone extraction
 - Generally only used in patients who had a temporizing cholecystostomy but are too elderly/comorbid for cholecystectomy
 - USA study (McDermott 1994) showed 39% recurrent stones and 16% recurrent symptoms after 2 years
 - UK study (Pereira 1995) showed around 50% recurrence at 3 years
 - China study (Zou 2007) showed 10 year recurrence of 40% and about half asymptomatic
- ESWL - not very effective with high chance of precipitating biliary colic and high rates of recurrence
- Lipid lowering drugs like statins and ezetimibe are unproven therapies
- Overall recurrence rates are high but may not be necessarily symptomatic

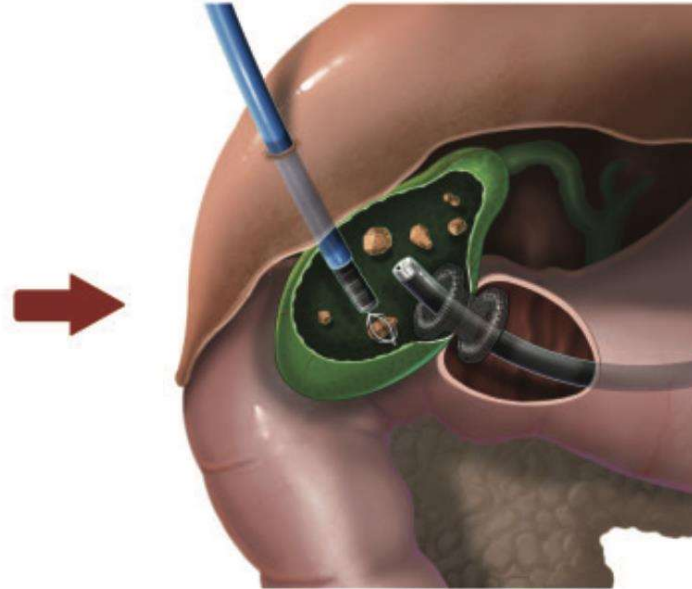
Alternative therapies

- Due to cultural reasons, many Chinese patients refuse cholecystectomy
- Development of laparoscopic gallbladder-preserving cholecystolithotomy surgery (“Endoscopic Minimal Invasive Cholecystolithotomy EMIC) in China (Baoshan 2003)

a Incision–suture technique



b Puncture and channel establishment



c Via cystic duct

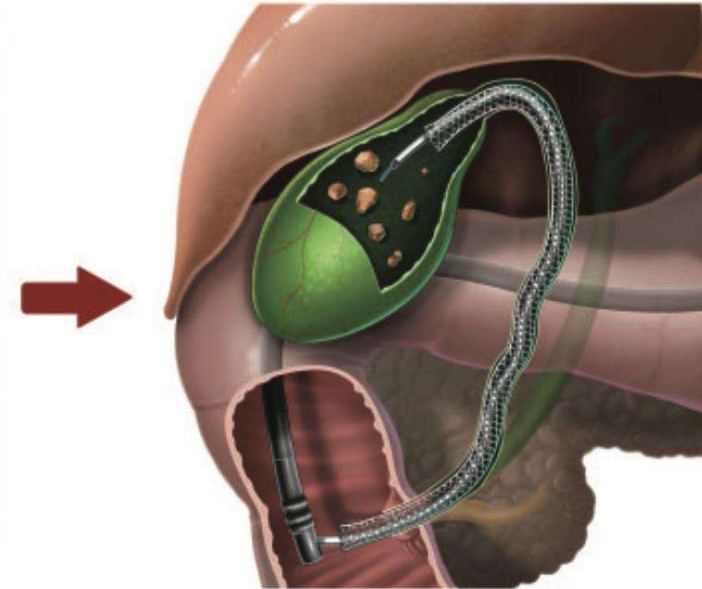


Fig. 1 Damage control strategies in gallbladder-preserving cholecystolithotomy

a Incision–suture cholecystolithotomy can be performed by mini-incision technique, laparoscopic method, or natural orifice transluminal endoscopic surgery. **b** Cholecystolithotomy by puncture and channel establishment can be achieved by percutaneous or transluminal method. **c** Cholecystolithotomy via physiological cystic duct.

Alternative therapies

Gallbladder-preserving cholecystolithotomy

- All studies I can find come out of China
- Meta-analysis (Li, Surg Endosc 2019) of 8 retrospective studies with 1663 patients found a recurrence rate of 25% at 3 years
- Meta-analysis of 14 RCTs (all from China) (Ye 2015) with 2030 patients found EMIC comparing with lap chole
 - associated with less blood loss (difference of around 20mL), hosp stay (mean 4 vs 5 days), complications
 - Complications recorded included post-op bloating and subcut emphysema, and lap chole group (n=856) included 3 bile duct injuries and 5 reoperations for bleeding

Table 3

Total complications.

Complications	EMIC	LC
Bleeding after operation	0	5 ^a
Bile leakage	0	6 ^b
Incision infection	1	5
Umbilical infection	1	4
Dyspepsia and diarrhea	2	93
Abdominal distension	0	20
Post-operative abdominal pain	18	3
Intestinal obstruction	0	1
Pelvic effusion	0	2
Subcutaneous emphysema	0	8
Total	22 (2.7%)	147 (17.2%)
Number of patients included ^c	812	856

^a Re-operation was performed in all 5 cases of bleeding.

^b 3 cases of biliary peritonitis included which due to bile duct injury.

^c Three trials not reported the complications were excluded.

Ye 2015
Meta-analysis RCTs EMIC vs lap chole

Thank you!