

HEPATOBIILIARY SURGERY COMPLICATIONS

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CLASSIFICATION

▶ **Biliary**

- **Early:**

Bile leak

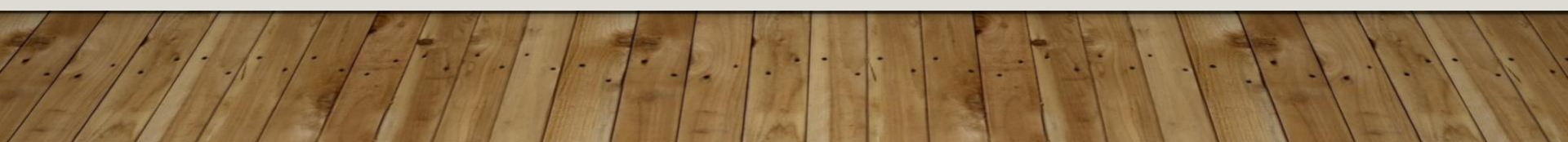
Hematoma

Abscess

Dropped stones

Inadequate cholecystectomy

Non-biliary



- **Late:**

__Port site hernia

__Postoperative pain

__Chronic inflammation

- **Mechanical factors:**

- _Common bile duct stricture

- _Retained stone

- Fistula formation

- Papillary disorders

BILE DUCT INJURY

- Incidence :
 - Laparoscopic cholecystectomy: 0.2 – 0.7 %
 - Open : 0.1 – 0.04 %

- Most common factors associated:
 - Acute cholecystitis
 - Inexperience of the surgeon (1st 15 operations)

INCORRECT CLIPPING OF THE CYSTIC DUCT



FIGURE 38.1. Depiction of a common bile duct “tent” injury.

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- Important factors to prevent bile duct injury:
 - Surgical experience
 - Preoperative imaging
 - Precise operative procedure
 - Conversion to open in difficult cases
 - Visualisation of “critical view”
 - Abandoning infundibular dissection

LUSCHKA LEAK

- Accessory bile duct in the liver bed
- If drainage > 500 ml over 24 hours --- ERCP + sphincterotomy + stenting of the CBD

HEMORRHAGE

- ▶ Incidence:
 - Intraop : 2.3%
- ▶ Most common treatment : Open procedure with hemostasis – suturing of the GB peritoneum
- ▶ Most common source: GB bed
- ▶ Usually seen in
 - Acute cholecystitis
 - Cirrhosis

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- Other sites of bleeding:

- **Incursion into deeper planes**

Distal tributaries of middle hepatic veins encountered(10%)

- **Port site**

- **Cystic artery (1%)**

DROPPED STONE

- Incidence : 6% - 40% dropped stones following GB perforation
- Stones lost : 3% - 32%

- Complications:
 - Fever
 - Abdominal pain – chronic type
 - Intestinal obstruction
 - Liver abscess / bacteremia
 - Empyema / broncholithiasis

INFECTION

- **CDC study done over 7 years (n = 54,504 patients)**
 - ✓ SSI in lap vs open : 0.62 % - 1.82%
 - ✓ Pathogens are similar : Enterococcus, E.coli, Staph.
 - ✓ In open approach : Infection limited to subcutaneous plane
 - ✓ In lap approach : Infection predominantly intra-abdominal
- **SSI higher in :**
 - Emergency surgery
 - ASA \geq 3

- Role of prophylactic antibiotics – NOT INDICATED in pre-operative patients (Low risk)

Role of prophylactic antibiotic in elective laparoscopic cholecystectomy.

[Hassan AM](#), [Nasr MM](#), [Hamdy HE](#), [Abbas M](#), [Hedaya MS](#), [Elsebae MM](#).

- **The role of prophylactic antibiotics in elective laparoscopic cholecystectomy.**

[Uludag M](#), [Yetkin G](#), [Citgez B](#).

- [J Gastrointest Surg](#). 2008 Nov;12(11):1847-53; discussion 1853. doi: 10.1007/s11605-008-0681-x. Epub 2008 Sep 9.
- **Role of prophylactic antibiotics in laparoscopic cholecystectomy: a meta-analysis.**
- [Choudhary A](#), [Bechtold ML](#), [Puli SR](#), [Othman MO](#), [Roy PK](#)

LATE COMPLICATIONS

- Abdominal pain
 - Pathophysiology : Bile duct neuromas

MECHANICAL COMPLICATIONS: STRICTURE

- Incidence of benign strictures :
 - LC : 0% - 2.7%
 - Open : 0.2 – 0.5%

- Causes :
 - Clipping / transection of CBD
 - Delayed thermal injury
 - Intraop ischemic devascularisation

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- Presentation :
 - Abdominal pain
 - High grade fever
 - Obstructive jaundice
 - Treatment : Endoscopic balloon dilatation/ stenting or Hepatico jejunostomy

RETAINED STONES

- Cause : Remnant of cystic duct or gall bladder



• Increase in Choledochal pressure

Theory : Cystic duct stump syndrome



• Increase in cystic duct stump pressure



• Increase in sphincter of oddi pressures

WHEN IS TREATMENT INDICATED?
IF RETAINED STONES PRESENT IN
~~CBD/CYSTIC D.~~



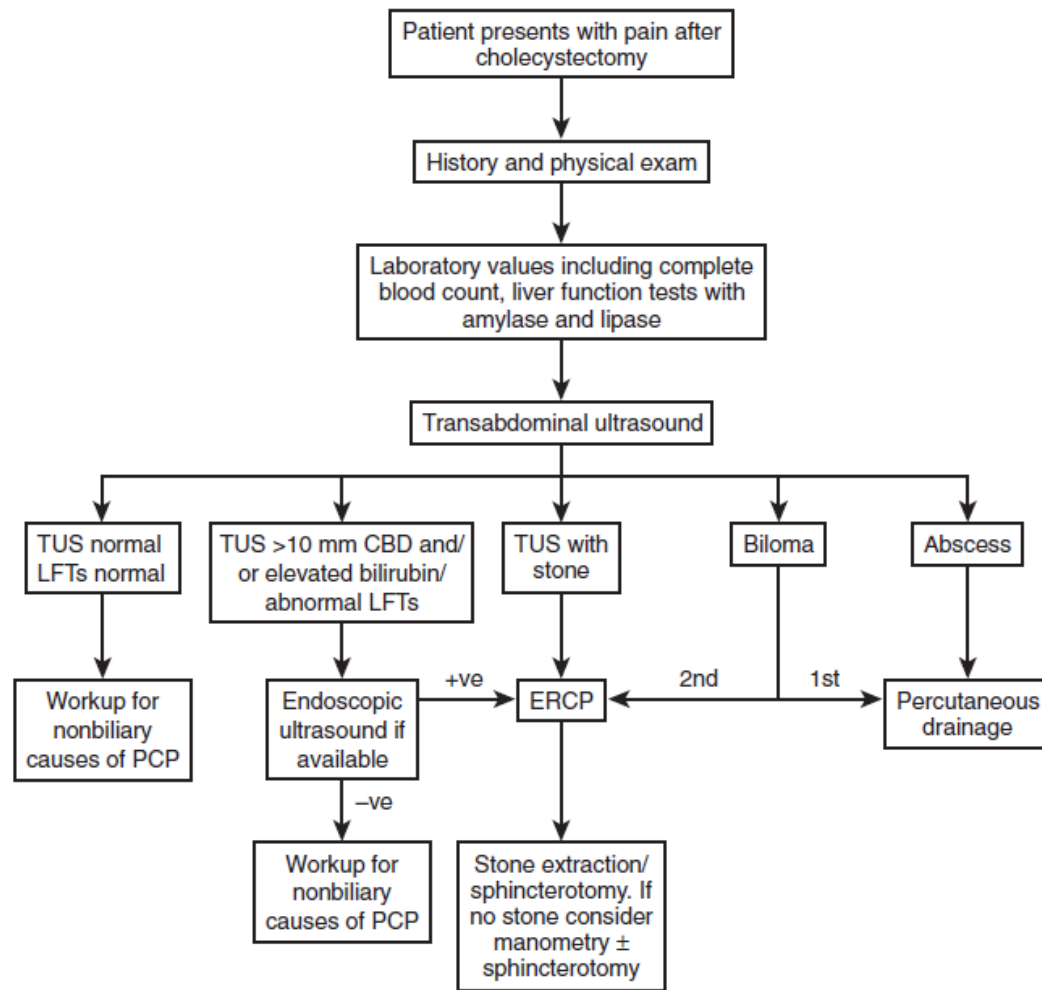


FIGURE 38.4. Treatment algorithm for patients with postcholecystectomy problems.