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Indications

Cholecystostomy may be performed in patients suffering from acute cholecystitis when cholecystectomy may be hazardous for technical reasons or when cholecystectomy has been attempted and is too technically difficult. Computed tomography (CT)-guided percutaneous catheter drainage may be the most pragmatic method for managing acute cholecystitis in poor-risk patients. Rarely, it is not possible for technical reasons, and open or laparoscopic (see references) cholecystostomy is an option in these cases.

Contraindication

Patients with acute cholangitis owing to common bile duct (CBD) obstruction

Preoperative Preparation

Appropriate antibiotics

Pitfalls and Danger Points

Overlooking acute purulent cholangitis
Overlooking gangrene of the gallbladder
Postoperative bile leak

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Operative Strategy

When Is Cholecystostomy Inadequate?

Cholecystostomy does not provide adequate drainage for an infected bile duct. In most cases it is not difficult to differentiate acute cholecystitis from acute cholangitis. When a patient with acute cholangitis does not respond immediately to antibiotic treatment, prompt drainage of the CBD is lifesaving. Undrained acute purulent cholangitis is often rapidly fatal. When performing cholecystostomy, one must be alert not to overlook this disease of the bile duct.

Gangrene of the gallbladder is another complication of acute cholecystitis, for which cholecystostomy is an inadequate operation. The gangrene may occur in the deep portion of the gallbladder fundus, where it may be hidden by adherent omentum or bowel. It is easy to overlook a patch of necrosis when operating through a small incision under local anesthesia. When a necrotic area is found in the gallbladder, it is preferable to perform a complete cholecystectomy; if this operation is impossible for technical reasons, a partial cholecystectomy around a catheter with removal of the gangrenous patch can be done (Fig. 79.1).

Choice of Anesthesia

Because of the danger of overlooking disease of the CBD and gangrene or perforation of the gallbladder, it is preferable to perform the cholecystostomy through an adequate incision under general anesthesia. With modern anesthesia and monitoring techniques, it is safe for most poor-risk patients to undergo a biliary operation under general anesthesia. Otherwise, perform percutaneous catheter drainage of the gallbladder.

[†]Deceased

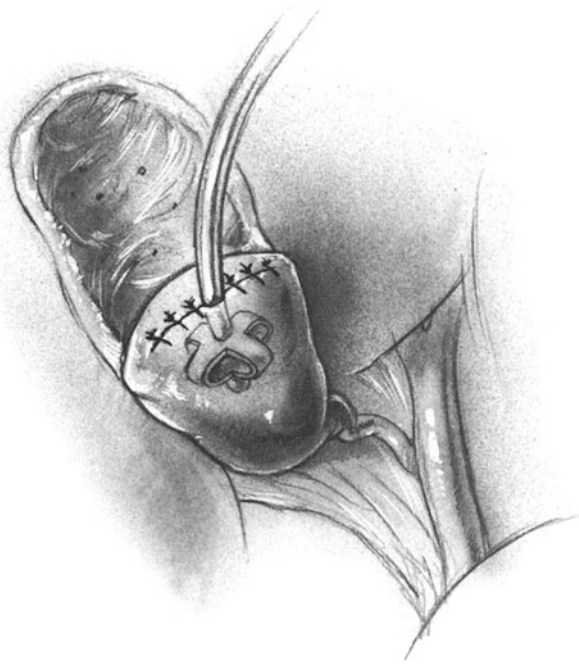


Fig. 79.1

Preventing Bile Leaks

One distressing complication that occasionally follows cholecystostomy is leakage of bile around the catheter into the free peritoneal cavity, resulting in bile peritonitis. This complication can generally be avoided by using a large catheter and suturing the gallbladder around the catheter (Fig. 79.2). It is important also to suture the fundus of the gallbladder to the peritoneum around the exit wound of the drainage catheter (Fig. 79.3). Adequate drainage is also necessary in the vicinity of the gallbladder.

Fig. 79.2

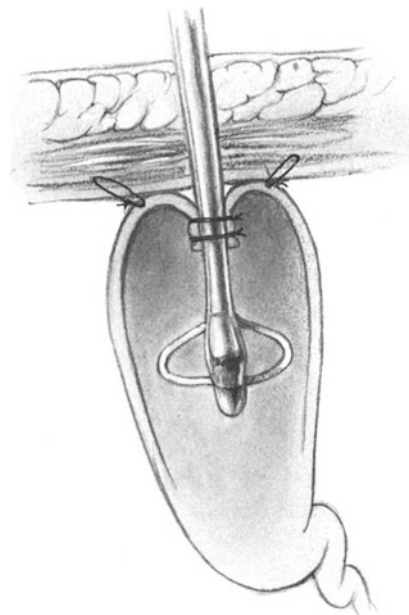
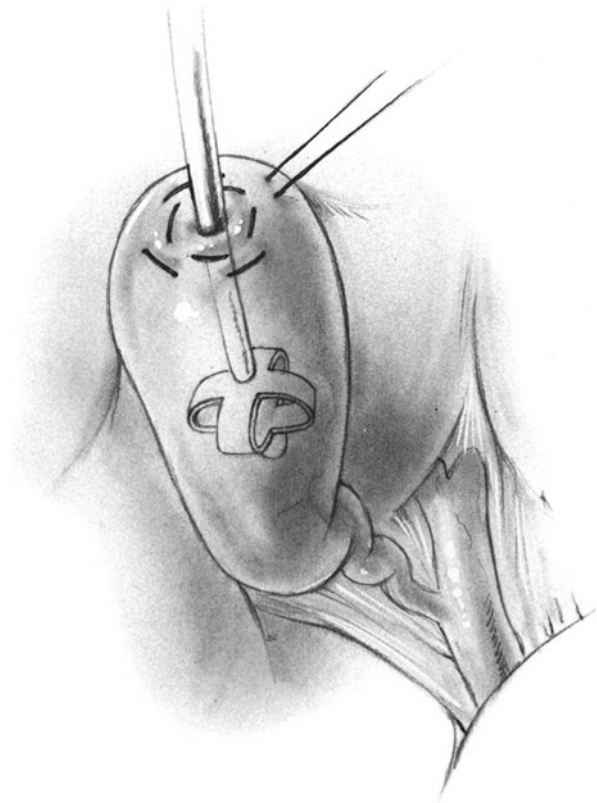


Fig. 79.3

Documentation Basics

- Findings and reason for procedure (rather than cholecystectomy)
- Type and size of catheter

Operative Technique

Incision

Under general anesthesia, make a subcostal incision at least 10–12 cm in length. Find the plane between the adherent omentum and the inflamed gallbladder. Once this plane is entered, the omentum can generally be freed from the gallbladder wall by gentle blunt dissection. Continuing in this plane, inspect the gallbladder and its ampulla.

Emptying the Gallbladder

After ascertaining that there is no perforation of the gallbladder or any patch of gangrene, empty the gallbladder with a 16-gauge needle or a suction trocar inserted into the

tip of the gallbladder. Perform an immediate Gram stain. Enlarge the stab wound in the gallbladder. Attempt to remove the gallbladder calculi with pituitary scoops and Randall stone forceps. It may be necessary to compress the gallbladder ampulla manually to milk stones up toward the fundus. After flushing the gallbladder with saline, insert a 20 F straight or Pezzar catheter 3–4 cm into the gallbladder. Close the defect in the gallbladder wall with two inverting purse-string sutures of 2-0 PG suture material (Fig. 79.2). If the gallbladder wall is unusually thick, it may be necessary to close the gallbladder around the catheter with interrupted Lembert sutures.

If the patient is in satisfactory condition, attempt cholangiography through the gallbladder catheter. It is not always possible to extract a stone that is impacted in the cystic duct. This circumstance eliminates the possibility of obtaining a cholangiogram by this route.

Now make a stab wound through the abdominal wall close to the fundus of the gallbladder. Draw the catheter through the abdominal wall and suture the fundus of the gallbladder to the peritoneum alongside the stab wound (Fig. 79.3). Make a stab wound and insert two closed suction catheters: one in the vicinity of the cholecystostomy and one in the right renal fossa.

Close the abdominal incision in routine fashion as described in Chap. 3. We use No. 1 PDS sutures for this closure.

Postoperative Care

Connect the cholecystostomy catheter to a sterile plastic collecting bag for gravity drainage.

Continue antibiotic treatment for the next 7–10 days. Until bacterial culture and sensitivity studies have been reported on the gallbladder bile, use antibiotics that are effective against gram-negative bacteria, enterococci, and anaerobes.

Employ nasogastric suction if necessary.

Measure the daily output of bile and replace with an appropriate dose of sodium.

Do not remove the gallbladder drainage catheter for 12–14 days. Obtain a cholangiogram before removing the catheter.

Complications

Bile peritonitis

Subhepatic, subphrenic, or intrahepatic abscess

Septicemia

Patients with acute cholecystitis generally respond promptly to adequate drainage of the infection. If the patient shows persistent signs of sepsis and bacteremia, it is likely that this complication stems from an undrained focus of infection. It may be an obstructed CBD with cholangitis or a subhepatic, *intrahepatic*, or subphrenic abscess. Endoscopic retrograde cholangiopancreatography (ERCP) and CT scanning may be helpful for detecting these complications.

Further Reading

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