

Cholecystostomy and Transcholecystic Biliary Access

Daniel Ginat, MD, MS, and Wael E.A. Saad, MBBCh

Percutaneous cholecystostomy represents a minimally invasive procedure for providing gallbladder decompression, often in critically ill patient populations. Indications for this procedure include calculous and acalculous cholecystitis, gallbladder perforation, malignant obstruction, percutaneous biliary stone removal, biliary duct drainage, and diagnostic imaging of the gallbladder and biliary ductal system. In addition, gallbladder access provided by percutaneous cholecystostomy may serve to carry additional procedures, such as cholangiograms, gallstone dissolution, and lithotripsy. Review of prior imaging studies including ultrasound, CT, and hepatobiliary scans are essential to planning the procedure, by helping to determine the access route: transhepatic versus transperitoneal. The transhepatic route is preferred in cases of large ascities, bowel interposition, and offers the advantage of greater catheter stability. On the other hand, the transperitoneal route is preferred in the setting of coagulopathy and liver disease. Initial access is gained via insertion of an 18- to 22-gauge needle, followed by use of the Seldinger technique or trocar system to catheterize the gallbladder. Overall technical success rate for percutaneous cholecystostomy is greater than 95%. Clinical improvement is achieved in 56 to 93% of patients. Complications occur in 3 to 13% of cases and are mainly acute and minor. Major complications such as bile peritonitis, significant hemorrhage, and hemo/pneumothorax affect less than 5% of patients. However, sepsis and reported 30-day mortality rates of up to 25% are usually related to underlying morbidities in critically ill patients. Catheters may be removed once the fistula track has matured.

Tech Vasc Interventional Rad 11:2-13 © 2008 Elsevier Inc. All rights reserved.

KEYWORDS percutaneous cholecystostomy, gallbladder decompression, cholecystitis, percutaneous biliary drain, stone removal

Percutaneous cholecystostomy represents an appropriate means of providing gallbladder drainage in cases of gangrenous, calculous, and acalculous cholecystitis and malignant obstruction in patient populations that have a high expected morbidity and mortality associated with more invasive procedures, such as cholecystectomy.^{1,2} Indeed, mortality rates related to surgical intervention for cholecystitis in critically ill patients approaches 15%.^{3,4} Conditions that virtually preclude surgical intervention are encompassed by American Society of Anesthesiologists (ASA) classifications 3 and 4. This includes critically ill patients that experience hemodynamic instability, severe cardiac ischemia, respiratory distress, renal failure, and significant central nervous system disease.⁵ Percutaneous cholecystostomy may also be a suitable, minimally invasive alternative for gallbladder decompression in pregnant patients and patients with anatom-

ical variations that render endoscopic drainage unfeasible, such as following the Billroth II procedure. A comprehensive list of indications for percutaneous cholecystostomy is detailed in Table 1.

Since the inception of percutaneous cholecystostomy in the 1970s, numerous variations of the technique have evolved and proven effective. The general steps involved in percutaneous cholecystostomy are outlined in Figure 1 and the most commonly used and latest techniques and perioperative management are described in more detail in the following sections.

Preintervention Management and Planning

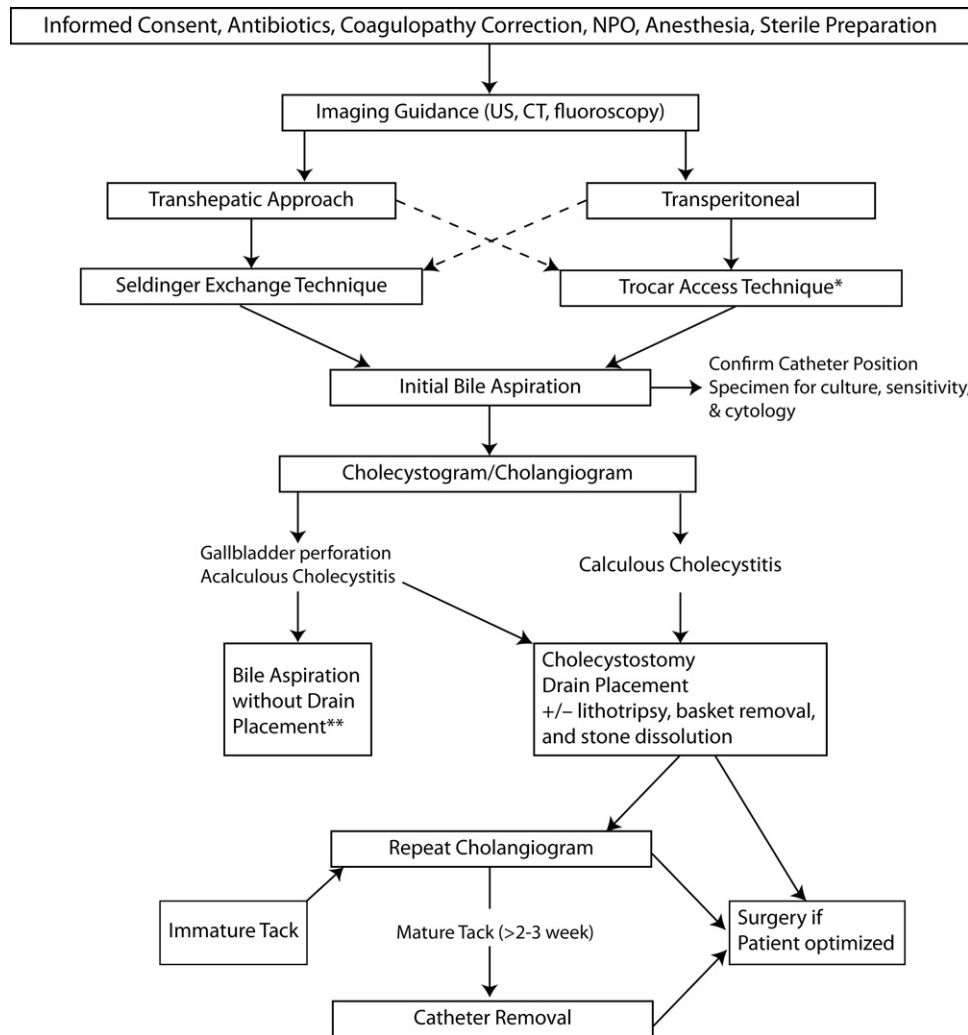
Once informed consent for the procedure is obtained, a coagulation panel should be drawn and coagulopathies corrected. Prophylactic antibiotics, generally aminoglycosides and cephalosporins, are administered 12 to 24 hours before percutaneous cholecystostomy.⁶ For patients that have not already received antibiotics, Zosyn; Wyeth Pharmaceuticals,

Department of Imaging Sciences, University of Rochester Medical Center, Rochester, NY, USA.

Address reprint requests to: Wael E.A. Saad, MBBCh, Department of Imaging Sciences, University of Rochester Medical Center, 601 Elmwood Ave, Box 648, Rochester, NY 14642. E-mail: wspikes@yahoo.com.

Table 1 Indications for Percutaneous Cholecystostomy

Gall Bladder Indications (More-Common Indications)	Common Bile Duct Indications (Less-Common Indications)
<p>A. Drainage of the gall bladder.</p> <ul style="list-style-type: none"> • Calcular cholecystitis • Acalculous cholecystitis • Iatrogenic/traumatic gall bladder perforation (bile leak) <p>A. Providing percutaneous access for minimal invasive interventions, such as percutaneous removal of biliary stones.</p> <ul style="list-style-type: none"> • Fluoroscopic-guided stone removal • Percutaneous endoscopic and fluoroscopic stone removal and/or lithotripsy 	<p>A. Drainage of the biliary ducts through a patent cystic duct and through the cholecystostomy drain.</p> <p>B. Providing a portal (percutaneous access) for minimal invasive interventions for the common bile duct. An internal/external transcholecystic biliary drain can be placed to drain the gall bladder and the common bile duct.</p> <p>C. Diagnostic opacification of the biliary tract including decompressed intrahepatic bile ducts after failed PTC to opacify the ducts. This makes it possible for a more precise and more selective percutaneous transhepatic biliary drain placement.</p>



* Largely abandoned by most operators.

** The authors do not perform gallbladder aspirations without drain placement, although it has been described in the literature.

Percutaneous Cholecystostomy Procedure Flow Chart and Decision Tree

Figure 1 Flowchart describing the approach for a cholecystectomy, its technical stages and drain management.

Download English Version:

<https://daneshyari.com/en/article/4251942>

Download Persian Version:

<https://daneshyari.com/article/4251942>

[Daneshyari.com](https://daneshyari.com)