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Indications

1. Choledocholithiasis detected during open cholecystectomy
2. Unsuccessful laparoscopic CBD exploration and endoscopic expertise unavailable or there are anatomical preclusions to endoscopic management (e.g., prior Roux-en-Y)
3. Adjunct to complex biliary tract surgery

Essential Steps

1. Right upper quadrant incision.
2. Kocherize the duodenum.
3. Place two stay sutures in the common bile duct.
4. Longitudinal incision in the common bile duct.
5. Aspirate bile and culture.
6. Explore duct with scoops, biliary Fogarty catheters, baskets, and/or choledochoscope.
7. Close bile duct in a watertight fashion around T-tube.
8. Perform completion cholangiogram.
9. Place closed-suction drain in the subhepatic space.
10. Ensure hemostasis.

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11. Place omentum in the field.
12. Close abdomen.

Note These Variations

1. Cholecystectomy and cholangiogram if not already done.
2. Different instruments may be used to clear the common bile duct.
3. Use of a rigid versus fiber optic choledochoscope.

Complications

1. Retained common bile duct stones
2. Bile leak
3. Common bile duct stricture
4. Pancreatitis

Template of Operative Dictation

Preoperative Diagnosis Choledocholithiasis

Procedure *Cholecystectomy with common bile duct exploration and cholangiogram*

Postoperative Diagnosis Choledocholithiasis

Indications This is a ___-year-old male/female who was found to have choledocholithiasis.

Endoscopic clearance was *unsuccessful/unavailable*; therefore, open common bile duct exploration was indicated.

Description of Procedure *An epidural catheter was placed by anesthesia prior to the start of the operation.* The patient was placed in a supine position on the operating room table. Time-outs were performed using both preinduction and pre-precision safety checklists to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. After induction of general endotracheal anesthesia, a Foley catheter and *orogastric/nasogastric tube* were placed. The abdomen was prepped and draped in the usual sterile fashion.

A right subcostal incision was made two fingerbreadths below the costal margin extending from the subxiphoid region to the anterior axillary line. The subcutaneous tissues were divided using electrocautery, and the peritoneal cavity was entered. The falciform ligament was doubly ligated with *0 silk* ties and divided.

[Choose One:]

If performing a cholecystectomy:

The gallbladder was elevated, and the peritoneum overlying Calot's triangle was incised. The cystic duct and cystic artery were identified and encircled with *2-0 silk* ties. The cystic duct was cannulated with a ___ catheter, and a cholangiogram was obtained demonstrating a dilated common bile duct containing ___ stones. The cystic duct and cystic artery were then ligated proximally and distally and divided. The gallbladder was taken off the liver bed using electrocautery and sent to pathology for permanent section.

If cholecystectomy has already been performed:

The common bile duct was identified. A ___ butterfly needle was used to cannulate the duct, and a cholangiogram was performed demonstrating a dilated common bile duct containing ___ stones.

A Kocher maneuver was performed by incising the peritoneal attachments lateral to the duo-

denum and gently rotating the duodenum and head of the pancreas medially. The common bile duct and head of the pancreas were palpated and *was without obvious abnormality/ stones were palpated in the common duct.* The hepatoduodenal ligament overlying the common bile duct was incised to expose the anterior wall of the common bile duct 2 cm proximal to the pancreas. Two *4-0 silk* stay sutures were placed on the anteromedial wall of the common bile duct, and a 1.5-cm incision between these sutures was made with a #15/#11 blade. Bile was aspirated and sent for culture and Gram stain.

Stones were gently milked from the distal duct and removed via the choledochotomy. *Scoops/stone forceps/biliary Fogarty catheter* was passed proximally and distally, and stones were retrieved. Remnant debris was then irrigated from the duct. A ___ French *coude catheter/Bakes dilator* was then successfully passed via the choledochotomy through the ampulla.

A completion choledochoscopy was performed, and *no additional stones or debris was noted/additional debris was retrieved.* Patency of the ampulla was confirmed by noting the ampulla dilating when irrigated with saline.

A ___ French T-tube was then placed in the common bile duct, and the choledochotomy was closed using interrupted *5-0 PDS* suture *below/above* the T-tube. The choledochotomy was tested with saline, and a single figure-of-eight *5-0 PDS* was used to completely approximate the choledochotomy edges *inferior to/superior to* the T-tube. Air was then flushed from the long limb of the T-tube with saline.

A completion cholangiogram was then obtained.

Choose One

The contrast was noted enter the duodenum.

The contrast did not initially enter the duodenum; however, after administration of 1 mg Glucagon intravenously, a repeat cholangiogram showed free passage of contrast in the duodenum. No residual stones were noted.

The T-tube was brought out through a separate incision inferior to the subcostal incision and fas-

tened to the skin with a nylon suture. A closed-suction drain was placed in the subhepatic space and brought out through a separate incision lateral to the T-tube and likewise fastened to the skin with a nylon suture. Hemostasis was obtained, and the abdomen was irrigated with saline. Omentum was placed over the choledochotomy.

The abdominal fascia was closed with *running/interrupted _____*, and the skin was closed with *staples/____subcuticular sutures/packed*

open. The T-tube was placed to gravity drainage. The subhepatic drain was placed to bulb suction.

A debriefing checklist was completed to share information critical to postoperative care of the patient. The patient tolerated the procedure well and was wheeled to the recovery unit in stable condition. There were no immediate complications noted.

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