Bile Duct Injury after Other Operation

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The persistent biliary discharge is the result of some unrecognized pathology in the bile ducts, of an unexpected complication of the surgical procedure or importantly, of a surgical error

Bile duct injuries and fistulae are of importance because they are preventable, but once they occur they may be associated with considerable morbidity and mortality

After laparoscopic cholecystectomy at 24 h the liver function test are checked

To establish a controlled fistula is most important and operation is indicated when non-operative measures are not suitable such as in diffuse bile peritonitis, a septic patient with an intra-abdominal abscess too large to be drained by the percutaneous route, or the presence of necrotic material and debris within the abscess

It is most important to identify the presence or absence of a biliary-enteric bile flow (distal obstruction)

Biliary endoprosthesis or endoscopic sphincterotomy alone can be used for facilitating the fistula closure

Biliary reconstructive operation

- Biliary-enteric anastomoses may be complicated by stricture of fistula :Biliary fistula following hilar hepaticojejunostomy is more common
- Late stricture are most likely to occur when enteric anastomosis is performed to a norma-caliber duct or when the duct itself is diseased, as in cases of choledochal cysts
- Stricture of a biliary-enteric anastomosis following resections for malignancy are the result of cancer recurrence
- Late stricture after side-to-side choledochoduodenostomy may also occur (sump syndrome)
- Prefer with R-Y end-to-side hepaticojejunostomy

Gastric resection

- Injury to the bile duct at gastrectomy is particularly likely when the pyloric region and duodenal bulb are severely distorted or inflamed

- The most common situation is biliary injury during Billroth II gastrectomy, and one may mistakenly attributed this to a duodenal stump leak
- The stricture typically lies close to the proximal divided end of the duodenum

Hepatic resection

- If there is a suspicision of ductal injury inflicted during operation that cannot be readily identified or if the biliary anatomy is unclear, then intraoperative cholangiography should be performed

Other procedure

- Procedure requiring dissection near porta hepatitis such as portocaval shunt or lymphadenectomy
- After external beam radiation therapy and after endoscopic injection of sclerosant into a bleeding duodenal ulcer
- After orthotopic liver transplantation
  - Biliary leak and fistula are a continuing source of morbidity and mortality following liver transplantation
  - Method of reconstruction (end-to-end choledochostomy Vs R-Y choledochojejunostomy)
  - Hepatic artery thrombosis
- Biliary fistula after invasive radiological procedures (TIPS, TACE, RFA)

Bile duct injury due to blunt or penetrating injury

Postinflammatory biliary strictures

- Long-standing cholelithiasis
  - Repeated attack of cholecystitis may result in obliterated the triangle of Calot or may spread to involve the CHD (Mirizzi)
  - Patients with longstanding gallstones and jaundice should never be submitted to operation without preliminary percutaneous or ERCP

- Chronic duodenal ulcer
  - Chronic duodenal ulcer can cause inflammation and fibrosis in the periampullary area, resulting in distal biliary stricture or choledochodoudenal fistula

Recurrent pyogenic cholangitis

- Oriental cholangiohepatitis is associated with intrahepatic calcium bilirubinate stones and intrahepatic strictures

- Hepatic resection combined with R-Y biliary-enteric reconstruction is effective
- Because of the high incidence of recurrent stricture and stone formation, team approach is required

Chronic pancreatitis

- Long, narrow stricture involving the retropancreatic portion of the CBD
- Differentiating a stricture related to pancreatitis from malignant obstruction may be very difficult
- The majority of patients with CBD stenosis associated with chronic pancreatitis may be managed without biliary bypass (temporary endoscopic biliary stenting)
- Roux-en-Y choledochojejunostomy is the preferred method
- Choledochoduodenostomy, or cholecystojejunostomy should not be used
- Relief from chronic pain associated with pancreatitis itself is unusual