Indications

Common bile duct (CBD) obstruction due to inoperable carcinoma of the distal CBD, duodenum, or head of pancreas
CBD stasis with sludge, primary, or recurrent stones
Doubt that multiple CBD stones have all been removed
Constriction of the distal CBD due to chronic pancreatitis and fibrosis
CBD stricture

Preoperative Care

Perioperative antibiotics
Vitamin K in jaundiced patients

Pitfalls and Danger Points

Devascularizing the jejunal segment by inaccurate division of mesentery

Operative Strategy

If an isoperistaltic Roux-Y segment of jejunum was anastomosed to the common hepatic or the CBD, the incidence of postoperative anastomotic failure was zero in the experience of Bismuth, Franco, Corlette, and Hepp, who studied 123 consecutive patients suffering from benign, nonprogressive biliary tract lesions. The postoperative mortality in the first 60 days was also zero. Bismuth and associates feel that the isolated Roux-Y segment should be 70 cm in length to prevent any possibility of food regurgitation into the bile ducts. Many other authors feel that 50 cm is an adequate length. It is clear that a choledochojejunostomy with a Roux-Y construction is probably the safest biliary-intestinal anastomosis yet designed.

When the end of jejunum is anastomosed to the side of the bile duct or when a side-to-side biliary-jejunal anastomosis is constructed by the Roux-Y method, choledangitis will not be produced by the regurgitation of food material. It is conceivable that the blind end of the bypassed CBD may accumulate calculi as they pass down from the hepatic ducts. However, it is much more likely that any material of this type would pass through the large anastomosis into the jejunum rather than collect at the lower end of the CBD. Nevertheless, Bismuth and his colleagues advocate complete division of the CBD, suturing the distal duct closed and then implanting the cut end of the proximal duct into the side of the jejunum. It is not clear that this step is necessary. We prefer to suture the end of the jejunum to the anterior side of the CBD when the CBD is enlarged. Otherwise, a side-to-side biliary-jejunal anastomosis is performed. Although it seems clear that the Roux-Y anastomosis is the safest and also seems to have the fewest long-term complications, most surgeons have been reluctant to abandon choledo-
Roux-Y Hepatico- or Choledochojejunostomy

oduodenostomy in favor of biliary-jejunal Roux-Y anastomoses because the Roux-Y technique requires a jejunojeunal anastomosis in addition to the choledochojejunostomy. If the jejunojejunostomy is performed by the stapling technique described below, it will take no more than 2–3 minutes of operating time. We have not encountered any complications with this technique of reanastomosing the jejunum.

When the Roux-Y biliary-intestinal bypass is performed for carcinoma of the pancreas, it is necessary to evaluate the root of the small bowel mesentery because some of these tumors can extend deeply into this mesentery, making impossible the proper dissection of the jejunal blood supply for the Roux-Y segment. In these few cases this operation is contraindicated and some other type of bypass must be considered. Under these conditions, anastomosing the gallbladder to the side of a loop of jejunum may prove satisfactory for the short life expectancy characteristic of patients with large pancreatic neoplasms (Dayton, Traverso, and Longmire).

In most cases the marginal artery of the jejunum is divided immediately distal to the artery supplying the second arcade. By dividing only one or two additional arcade vessels, sufficient jejunum can be mobilized to reach the hepatic duct without tension. The jejunum is passed through an incision in the avascular portion of the transverse mesocolon, generally to the right of the middle colic artery. This dissection must be done carefully and will be facilitated by transilluminating the jejunal mesentery by means of a spotlight or a sterilized fiberoptic illuminator.

Operative Technique

Incision and Biopsy

If there has been a previous operation on the biliary tract that utilized a subcostal incision, then make a long midline incision. If the previous incision was vertical, then make a long subcostal incision and enter the abdomen. In secondary cases, the first effort is to free the peritoneum of the anterior abdominal wall from all its underlying adhesions as far lateral as the midaxillary line. Then continue to free the structures as described in Chap. 51.

In primary operations for carcinoma of the pancreas, make a long midline incision from the xiphoid to a point 6–7 cm below the umbilicus. This will prove to be a good incision either for a bypass or partial or total pancreatectomy. Conduct the usual exploration in order to make an accurate diagnosis. In patients with pancreatic carcinoma that is inoperable, take biopsies from areas of obvious carcinoma with a scalpel or biopsy a metastatic lymph node. When these steps are not possible, we have generally been successful in confirming the diagnosis of carcinoma by inserting a syringe with a 22-gauge needle into the hardest part of the pancreas. As soon as the needle enters the suspicious area, apply suction and plunge the needle for 1 cm distances in two directions. Then, release the plunger of the syringe so that no further suction is being applied. Remove the syringe and the needle. Pass it promptly to the cytopathologist as immediate fixation is necessary for an accurate cytological diagnosis. This method has provided us with a higher percentage of positive diagnoses in carcinoma of the pancreas than the tissue techniques. The cytologist’s report should not take more than 10–15 minutes.

Creating the Roux-Y Jejunal Limb

Inspect the proximal jejunal mesentery and look for the first two branches from the superior mesenteric artery to the jejunum just beyond the ligament of Treitz. Identify the marginal artery at a point 2 cm beyond its junction with the second je-