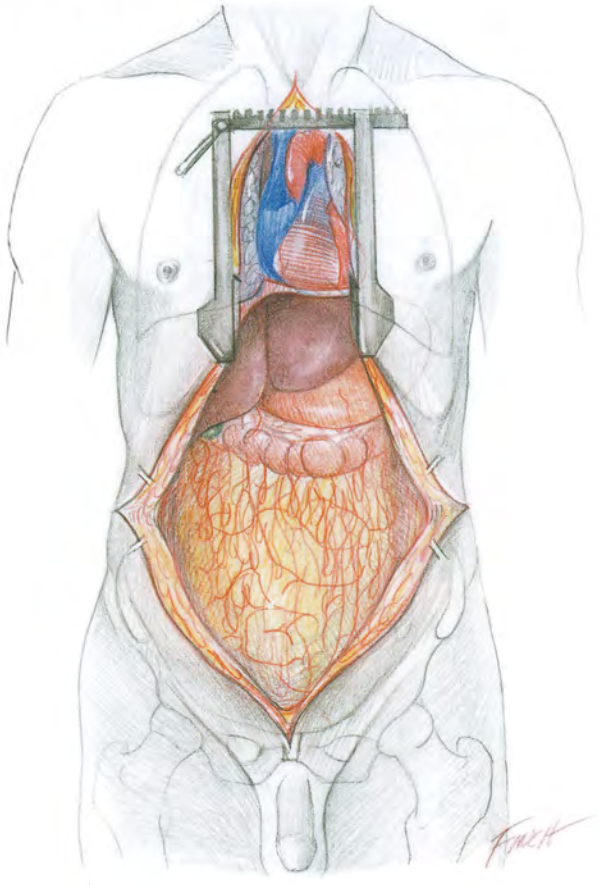
FIGURE 8.1.3.1. Midline skin incision from the suprasternal notch to the pubis and transverse abdominal extensions bilaterally.



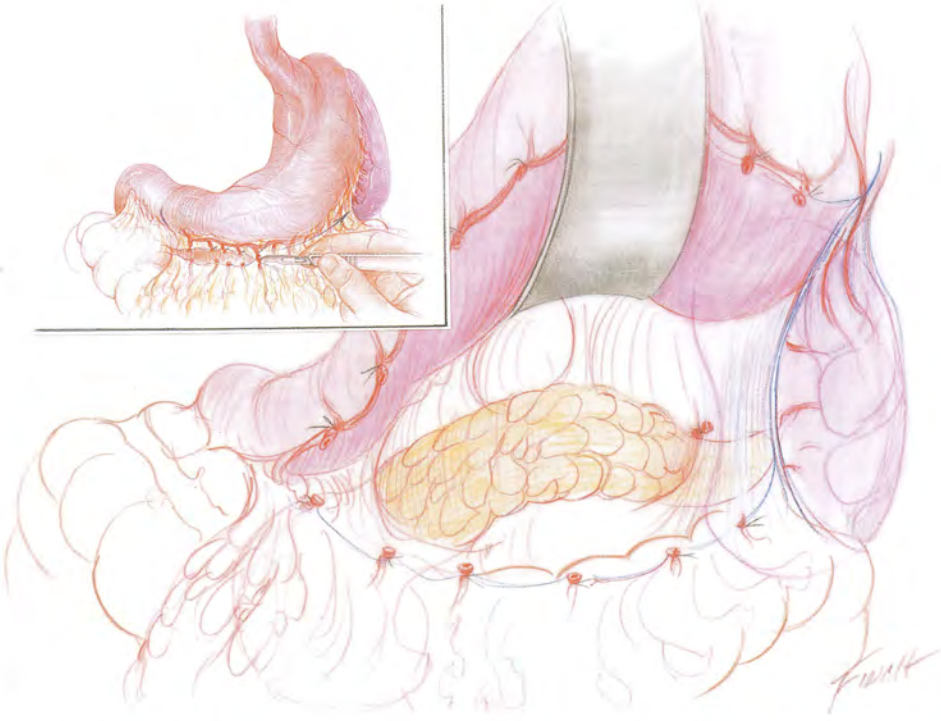


FIGURE 8.1.3.2. Exposure of the body and tail of the pancreas after the lesser sac is opened by ligating and dividing the gastrocolic ligament (inset).

Illustrations by Martin E. Finch; text by Rainer W.G. Gruessner.

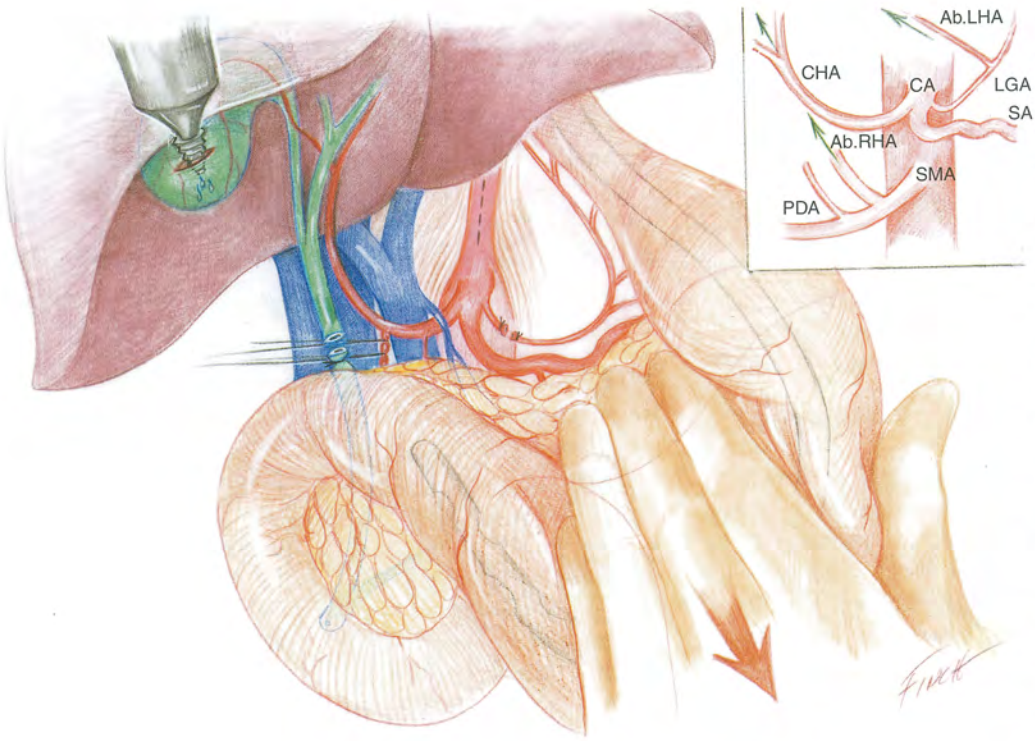


FIGURE 8.1.3.3. Dissection of the hepatoduodenal ligament. The common bile duct is divided and ligated distally (superior margin of the pancreas); the gastroduodenal artery is ligated. The origin of the celiac artery (CA) in the aorta is shown with the diaphragmatic crura divided. Inset shows vascular anomalies: aberrant right hepatic artery (Ab. RHA) arising from the superior mesenteric artery (SMA); aberrant left hepatic artery (Ab. LHA) arising from the left gastric artery (LGA). Also shown are the common hepatic artery (CHA), splenic artery (SA), and inferior pancreaticoduodenal artery (IPDA). The fundus of the gallbladder has been opened and irrigated clear, along with the cystic duct and proximal common bile duct.

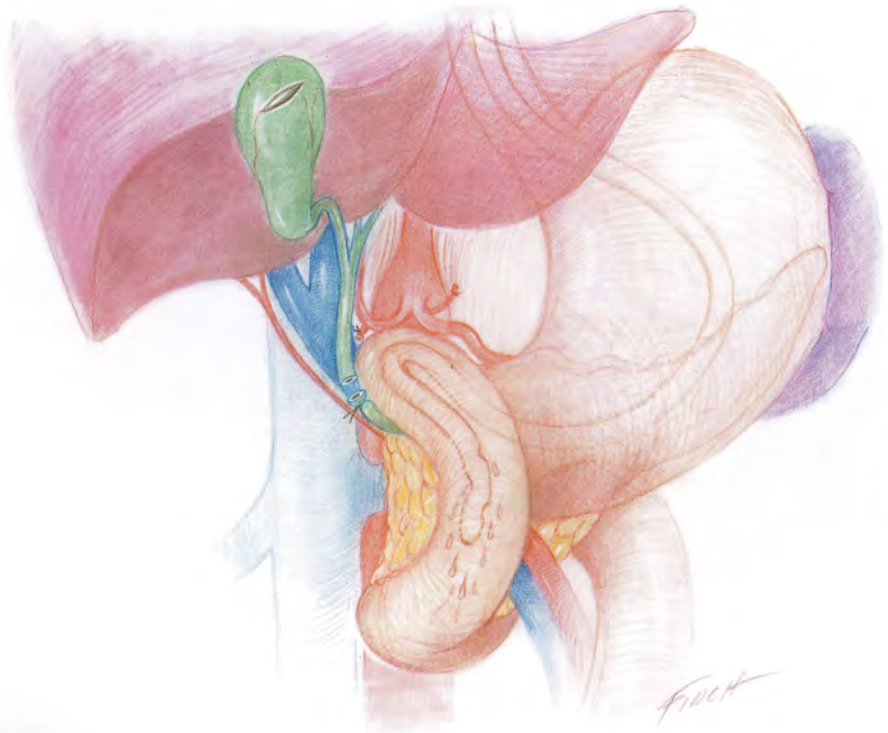
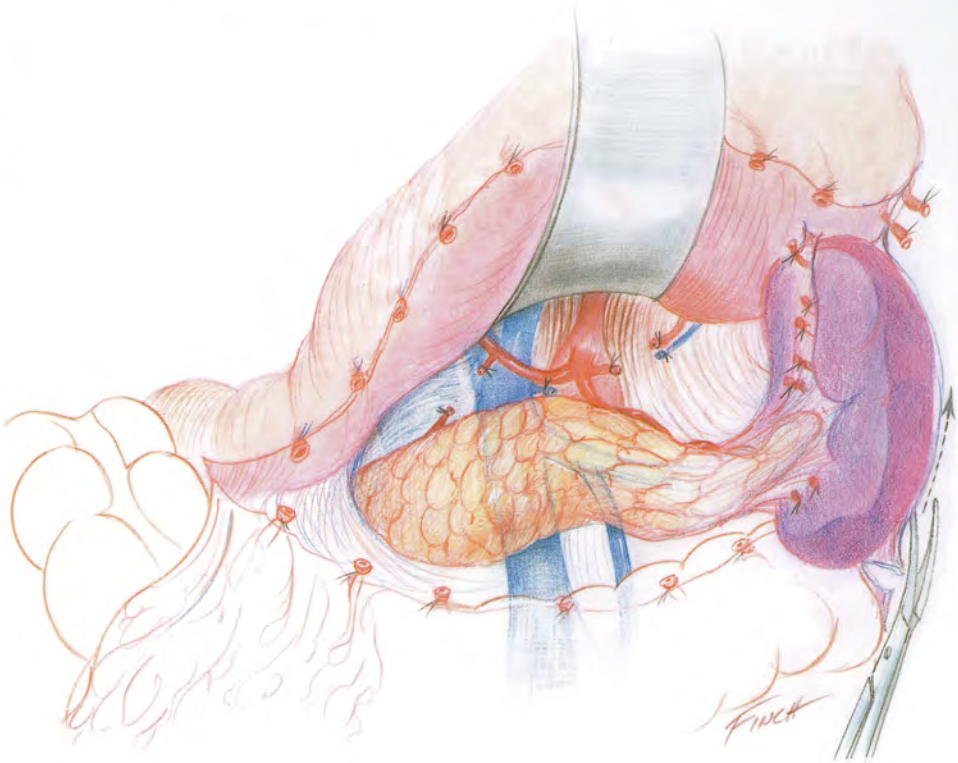


FIGURE 8.1.3.4. Kocher maneuver. Exposed are the posterior surfaces of the duodenum and head of the pancreas, as well as the infrahepatic vena cava and abdominal aorta. The common bile duct is ligated distally. A right aberrant hepatic artery arising from the superior mesenteric artery is shown. The gastroduodenal and left gastric arteries are ligated. A nasogastric tube is shown in the second portion of the duodenum with instillation of antibiotic and antifungal solutions.

FIGURE 8.1.3.5. Dissection of the body and tail of the pancreas. All short gastric veins are ligated and divided; the gastroduodenal and left gastric arteries are ligated and divided, as is the coronary vein. The stomach is retracted upward and the transverse colon downward. The retroperitoneal attachments of the spleen are taken down.



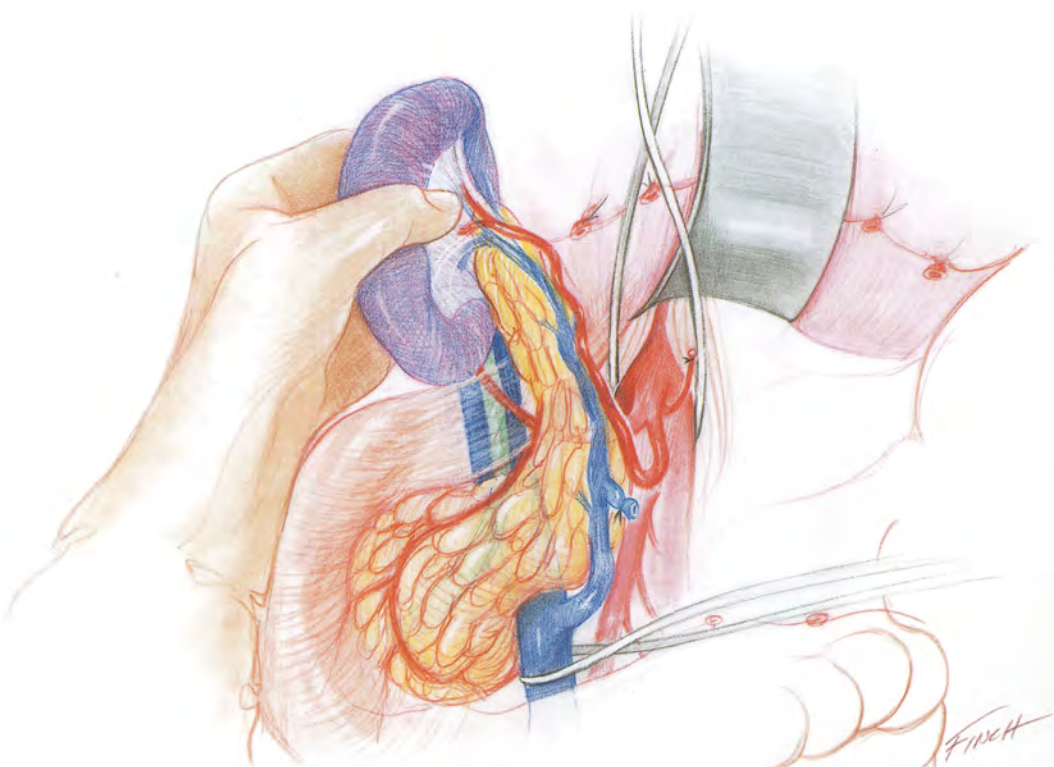


FIGURE 8.1.3.6. Mobilization of the tail of the pancreas. The spleen is completely mobilized and used as a handle. The posterior attachments of the tail and body of the pancreas have been taken down.

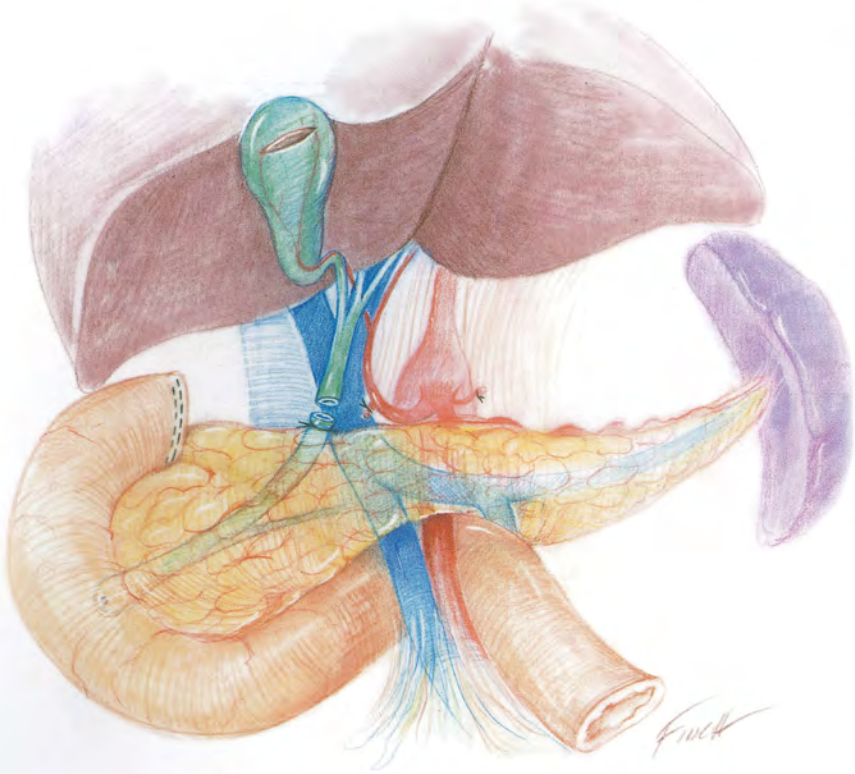


FIGURE 8.1.3.7. Exposure of the fully mobilized pancreas. The proximal duodenum is stapled across, just below the pylorus. The bile duct and gastroduodenal artery have been ligated and divided on the pancreas side. All main vascular structures (celiac artery, superior mesenteric artery, portal vein, and superior mesenteric vein) are intact.

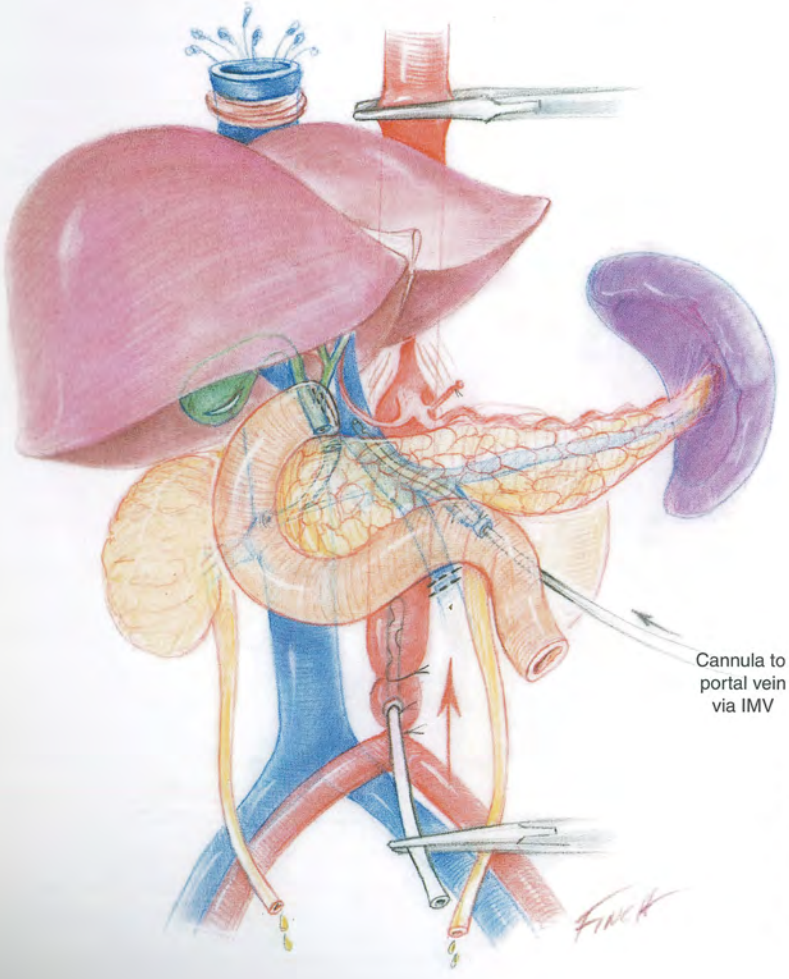


FIGURE 8.1.3.8. Aortic and portal flush. The supraceliac aorta is cross-clamped and the infrarenal aorta at the iliac bifurcation is ligated. A cannula is inserted into the infrarenal aorta. A second cannula is inserted into the inferior mesenteric vein (IMV) and advanced into the portal vein. The superior vena cava is divided above the diaphragm at the level of the right atrium. The proximal duodenum has been stapled across, as has the root of the mesentery.

FIGURE 8.1.3.9. Anterior view of the removed pancreas before packaging. Staple lines are shown on the proximal and distal duodenal stump, as well as on the root of the mesentery. The common bile duct (CBD) and gastroduodenal artery (GDA) are ligated at the level of the superior border of the pancreas. The proximal superior mesenteric artery (SMA) is shown with a cuff of aorta. The proximal splenic artery (SA) is cut close to its origin from the celiac artery. The inferior mesenteric vein is ligated. The spleen is attached to the pancreas. Also shown is the portal vein (PV).

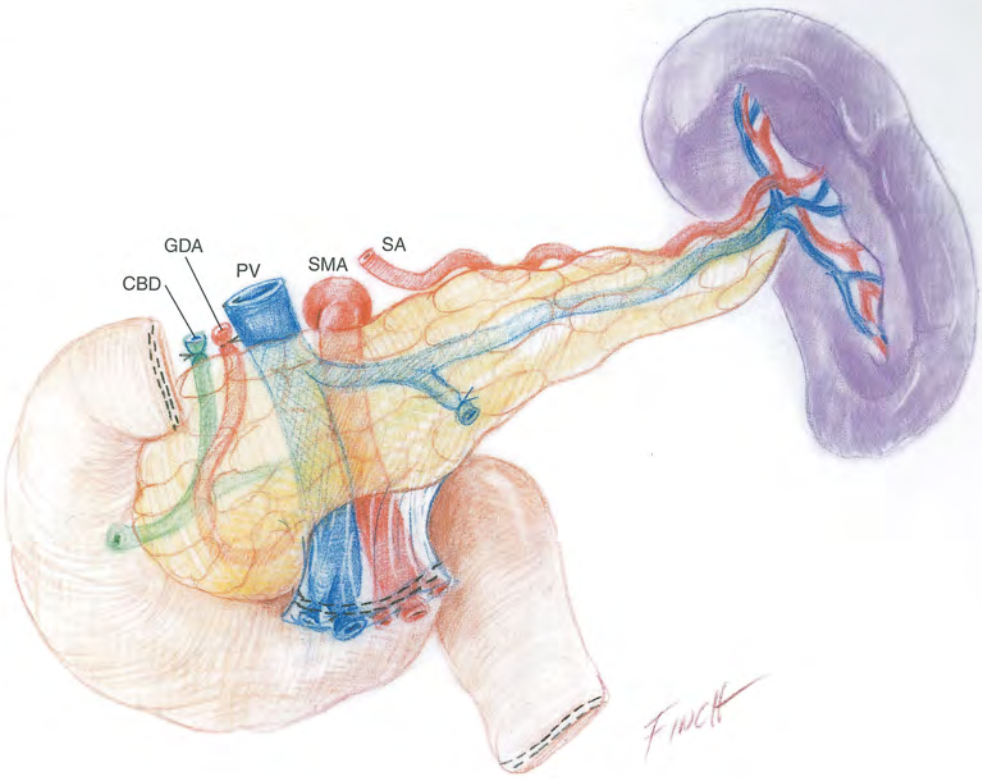
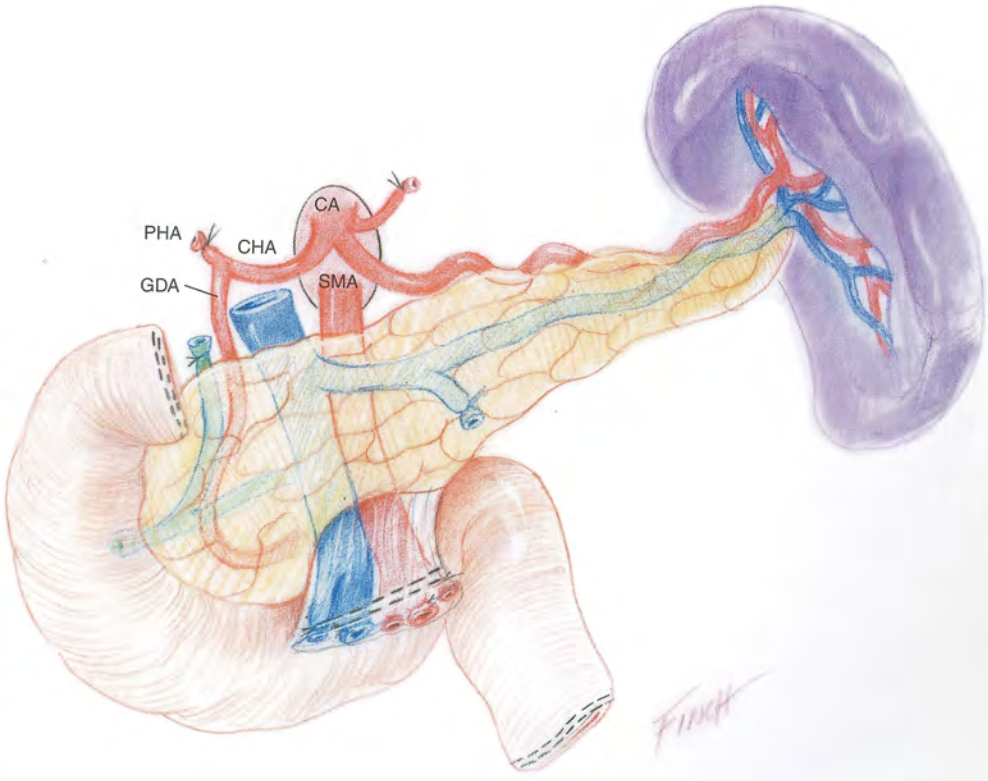


FIGURE 8.1.3.10. Anterior view of the removed pancreas before packaging. Staple lines are shown on the proximal and distal duodenal stump as well as on the root of the mesentery. The common bile duct is ligated at the level of the superior border of the pancreas. Both the superior mesenteric artery (SMA) and celiac artery (CA) are on a Carrel patch; the proper hepatic artery (PHA) is ligated; the common hepatic (CHA) and gastroduodenal arteries (GDA) are patent. The spleen is attached to the pancreas.



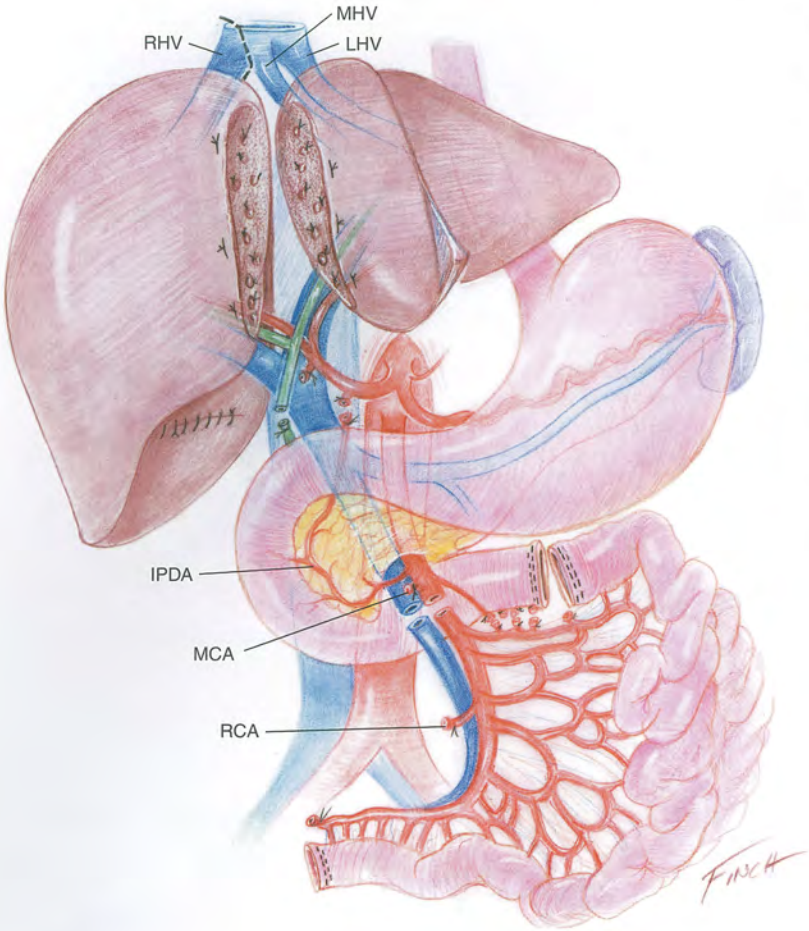


FIGURE 8.1.3.11. Simultaneous pancreas, in situ split liver, and intestinal procurement: in situ separation of the superior mesenteric vessels. The proximal superior mesenteric artery (with the origin of the inferior pancreaticoduodenal artery [IPDA]) remains with the pancreas. The middle colic artery (MCA) (and frequently the first jejunal artery, depicted slightly proximal to the middle colic artery) is ligated and divided. All other jejunal branches are left intact with the distal superior mesenteric artery for isolated small-bowel procurement; the right colic artery (RCA) is ligated and divided. The superior mesenteric vein is divided at the same level as the superior mesenteric artery. The in situ split-liver procurement is done in the standard fashion with procurement of the right and left liver lobes; the vena cava remains with the left lobe of the liver. The right hepatic vein (RHV) remains with the right lobe and the middle (MHV) and left hepatic veins (LHV) with the left lobe.

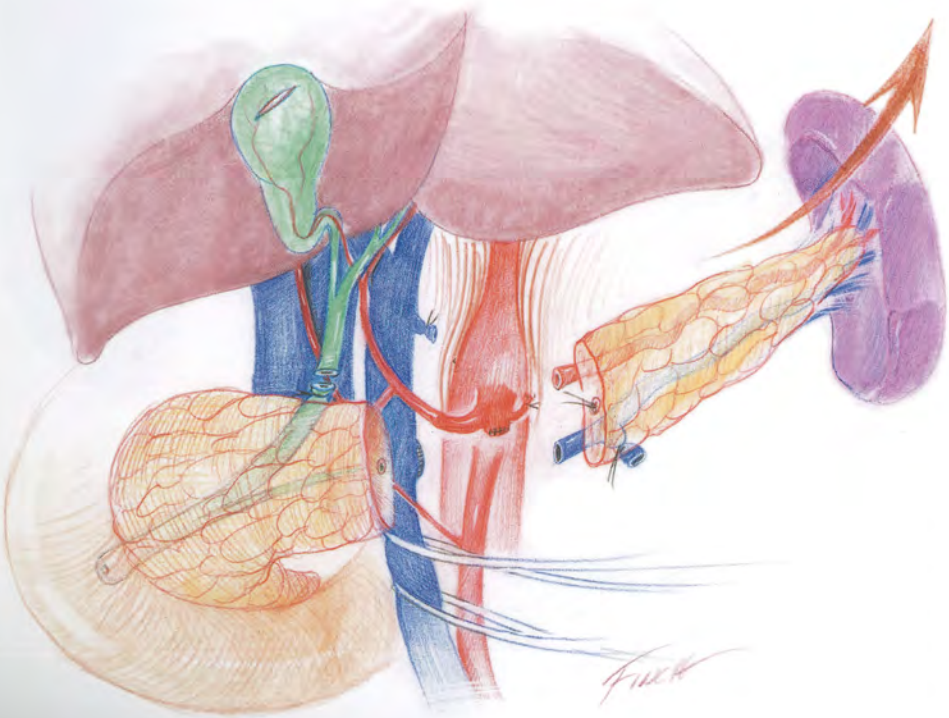
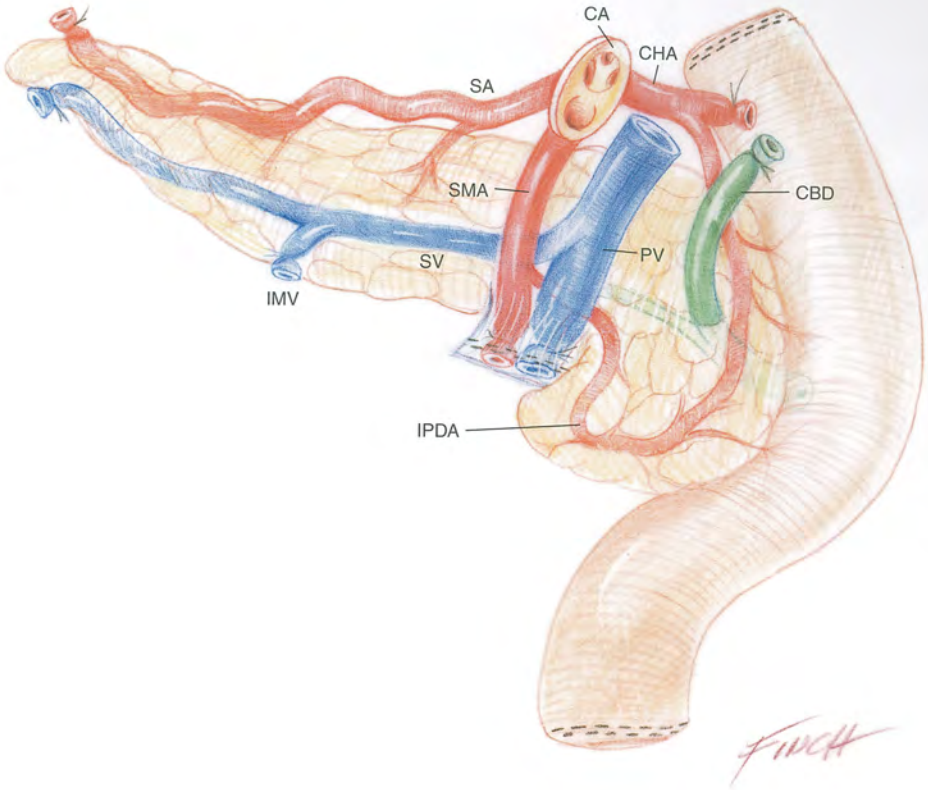


FIGURE 8.1.3.12. Segmental cadaver procurement. The neck of the pancreas is transected above the portal vein and the distal pancreas is removed with the splenic artery and splenic vein. The pancreatic duct is marked with a single fine suture. The inferior mesenteric vein is ligated. The spleen is still attached.

FIGURE 8.1.3.13. (A) Posterior view of the pancreas graft with an aortic Carrel patch (including the superior mesenteric artery [SMA], celiac artery [CA], and splenic artery [SA]). Also shown are the common hepatic artery (CHA), inferior pancreaticoduodenal artery (IPDA), portal vein (PV), splenic vein (SV), and common bile duct (CBD).



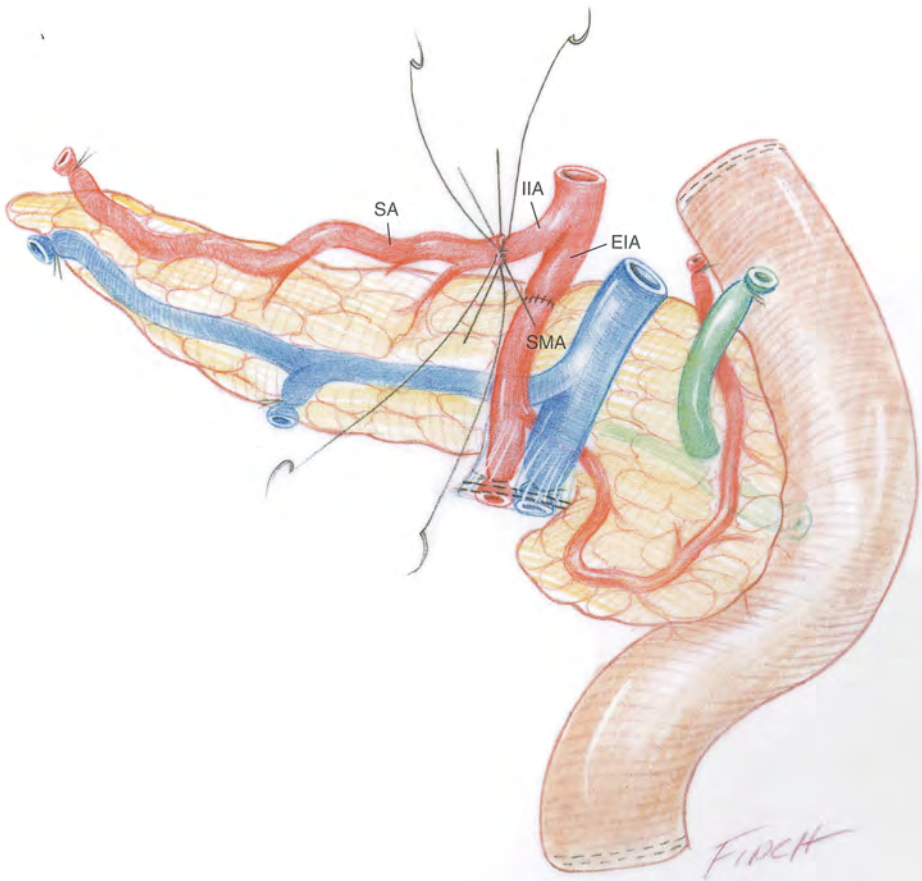


FIGURE 8.1.3.13. (B) Posterior view of the pancreas graft with Y-graft reconstruction: end-to-end anastomosis between the external iliac artery (EIA) and superior mesenteric artery (SMA) and between the internal iliac artery (IIA) and splenic artery (SA).

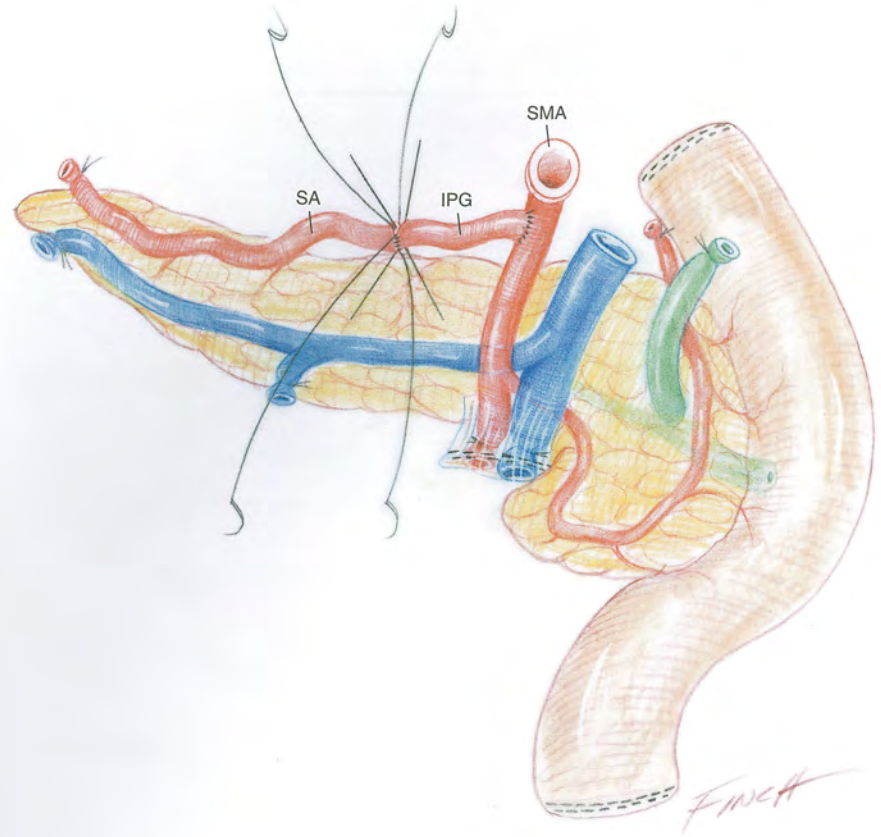


FIGURE 8.1.3.13. (C) Posterior view of the pancreas graft with an interposition graft (IPG) between the splenic artery (SA) and superior mesenteric artery (SMA), using a segment of the donor external iliac artery.

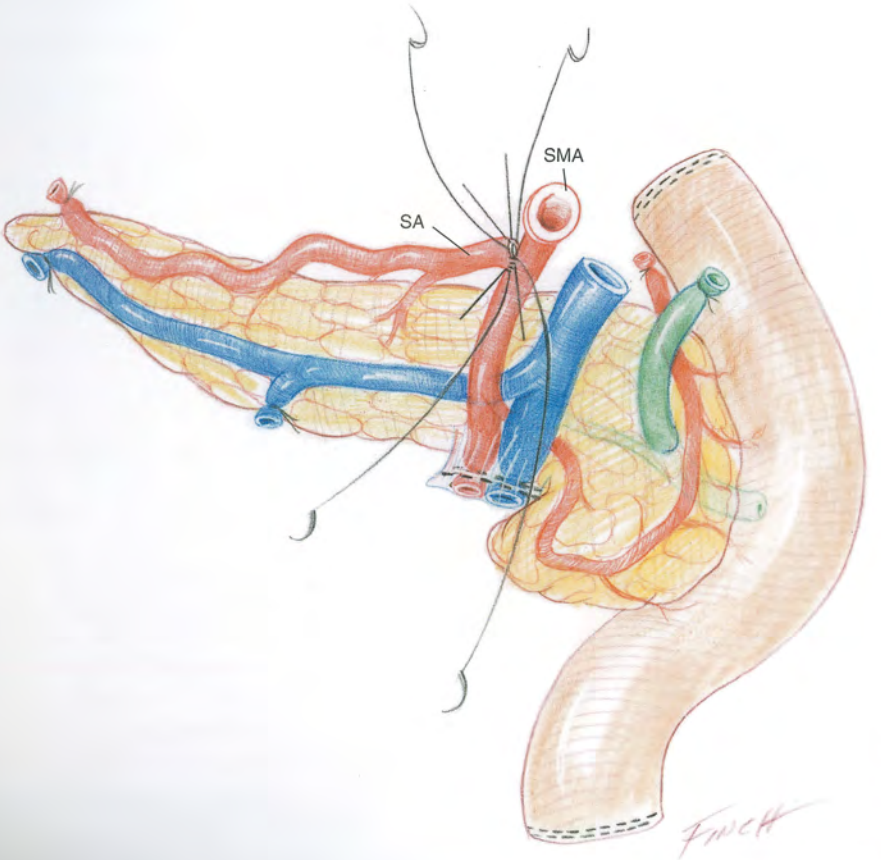


FIGURE 8.1.3.13. (D) Posterior view of the pancreas graft with direct end-to-side anastomosis between the splenic artery (SA) and superior mesenteric artery (SMA).

FIGURE 8.1.3.14. Open distal pancreatectomy in a living donor: division of the gastrocolic ligament with preservation of the right gastroepiploic artery.

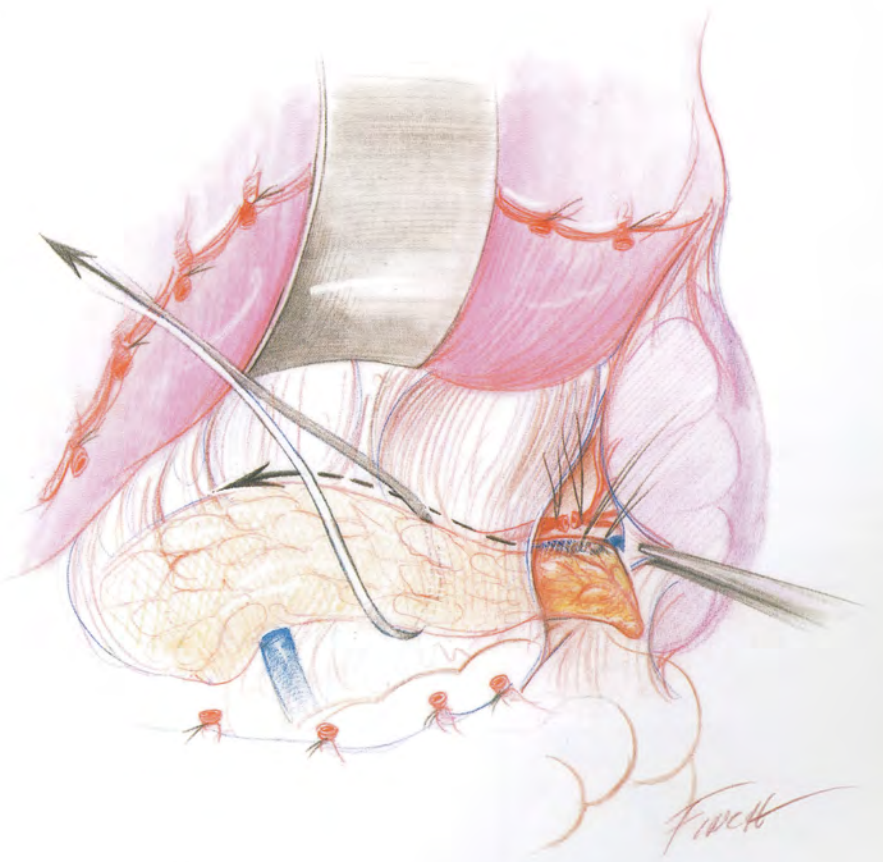


FIGURE 8.1.3.15. Open distal pancreatectomy in a living donor: ligation of the distal splenic artery and vein. Mobilization of the inferior and superior margins of the tail of the pancreas.

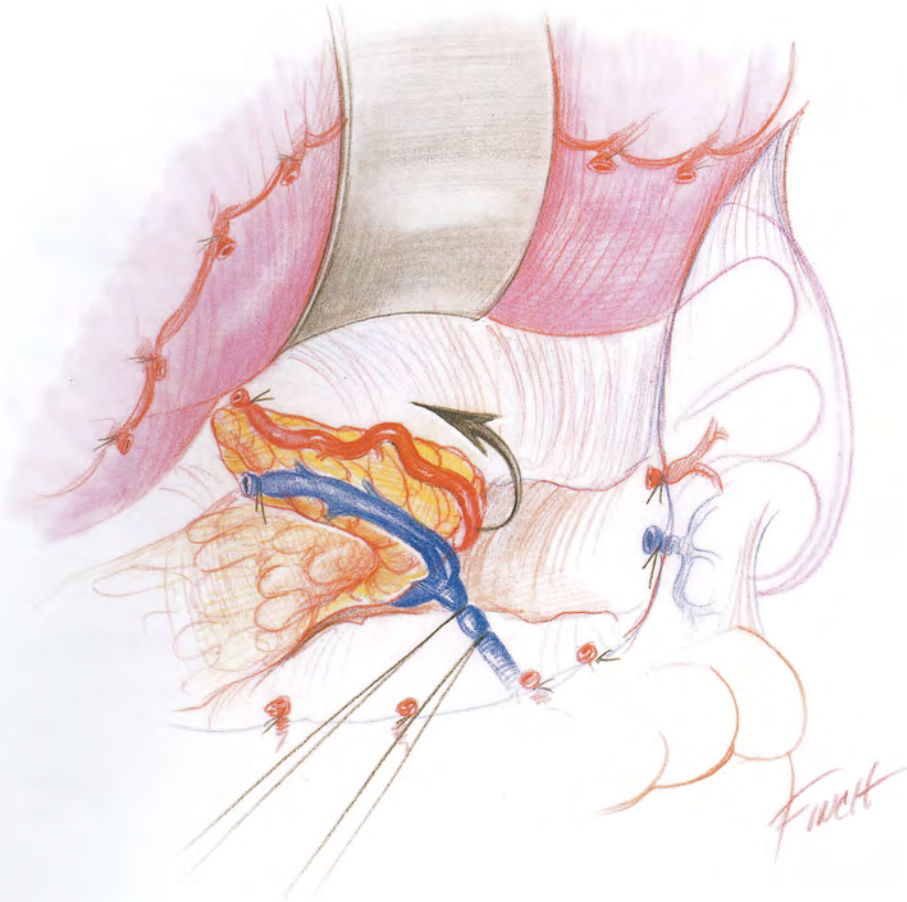


FIGURE 8.1.3.16. Open distal pancreatectomy in a living donor: medial mobilization of the tail of the pancreas. The inferior mesenteric vein is ligated.

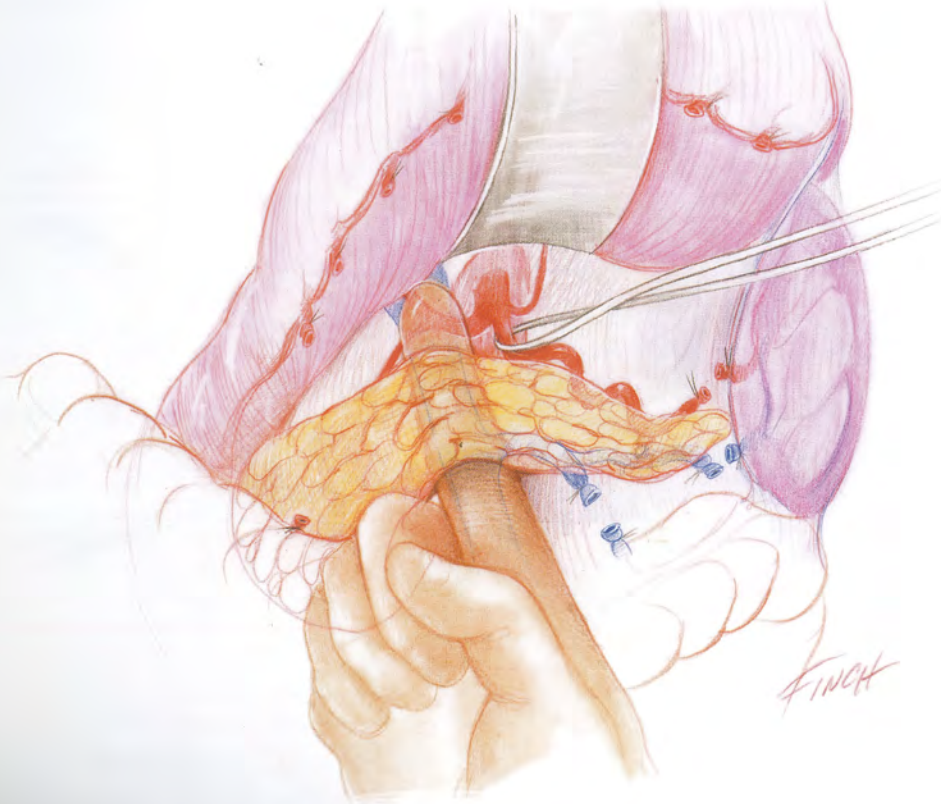
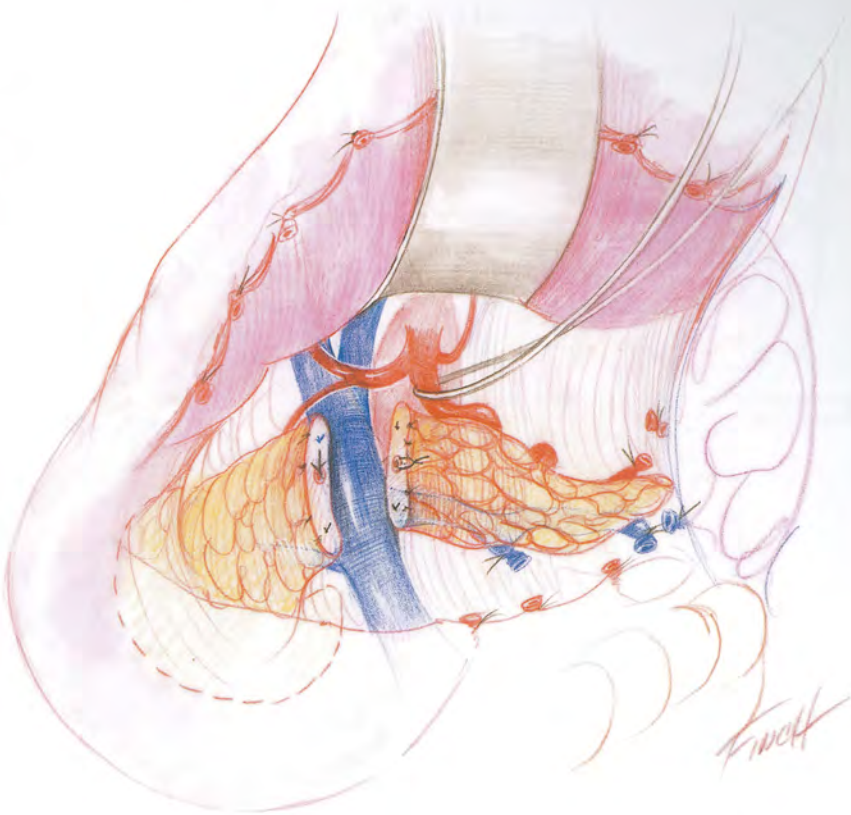


FIGURE 8.1.3.17. Open distal pancreatectomy in a living donor: dissection of the pancreatic neck and isolation of the splenic artery (encircled).

FIGURE 8.1.3.18. Open distal pancreatectomy in a living donor: transection of the pancreatic neck on top of the portal and superior mesenteric veins. The distal splenic artery and vein are ligated, as is the inferior mesenteric vein. The distal pancreatic duct is marked with a single fine suture; the proximal pancreatic duct is ligated and/or oversewn.



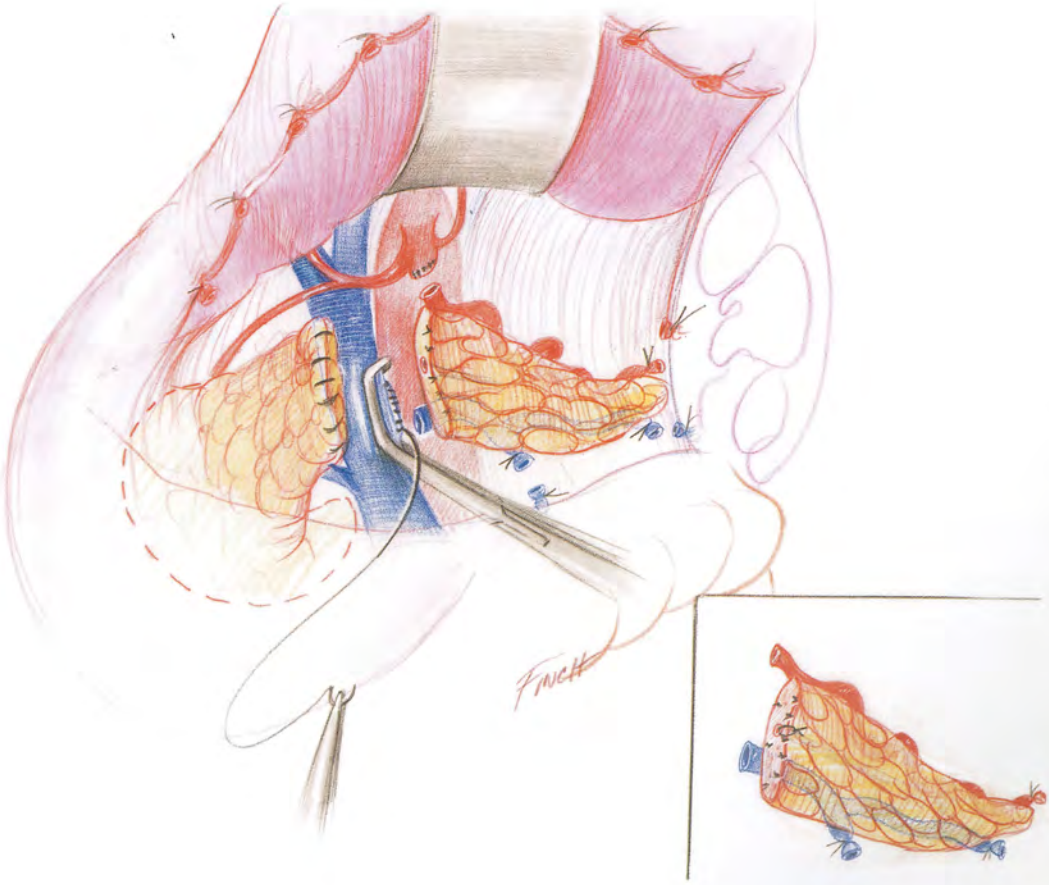


FIGURE 8.1.3.19. Open distal pancreatectomy in a living donor: removal of the distal pancreas. The proximal stump of the splenic artery in the donor is oversewn, as is the splenic vein stump at its confluence with the superior mesenteric vein. Inset: shows the segmental graft with the splenic artery, splenic vein, and pancreatic duct (marked with a single fine suture).

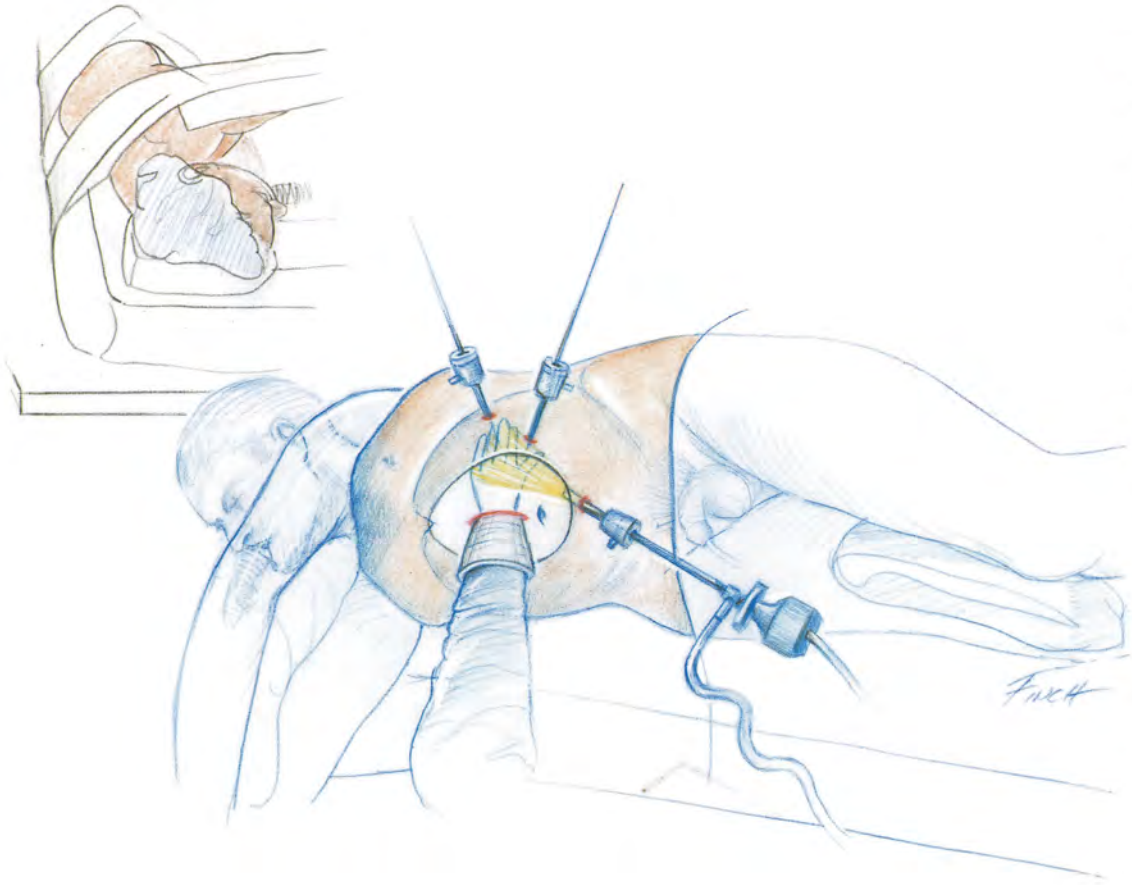


FIGURE 8.1.3.20. Laparoscopic distal pancreatectomy. The donor is placed in the right lateral decubitus position by using the hand-assisted technique. The surgeon's hand is inside of the abdomen via a supraumbilical midline incision of 6 to 8 cm. Three ports are placed: one pararectally 2 cm below and slightly left of the donor umbilicus (for laparoscope and camera), a second in the midleft abdomen (anterior axillary line), and a third in the upper left abdomen 2 cm below the rib cage (posterior axillary line).