Percutaneous transhepatic cholangiography

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This is an invasive technique in which the bile ducts are cannu lated percutaneously . The main indication is to drain intra- hepatic ducts when strictures cannot be accessed at ERCP . The procedure is undertaken after confirming normal coagulation parameters; antibiotics should be given prior to the procedure Under fluoroscopic or sonographic control, a slender (Chiba or Okuda) needle is introduced percutaneously into the liver substance. Successful entry into the bile duct is confirmed by contrast injection or aspiration of bile. Water-soluble contrast medium is injected to visualise the biliary system and images are taken to demonstrate strictures or obstruction (Figure 71.16 Bile can be sent for cytology . This technique enables place ment of a catheter into the bile ducts to provide external or internal biliary drainage and insertion of indwelling stents. in situ for a number of days The drainage catheter can be left and the track dilated su ffi ciently for the introduction of a fine flexible choledochoscope to diagnose strictures, take biopsies and remove stones. Summary box 71.1 Radiological investigation of the biliary tree /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF Kunio Okuda , 1921–2003, Professor of Medicine, Chiba University , Chiba, Japan. Peroperative cholangiography During open or laparoscopic cholecystectomy , a catheter can be placed in the cystic duct and contrast injected directly into the biliary tree. The technique defines the anatomy and is used mainly to exclude the presence of stones within the bile ducts (Figures 71.17–71.19). A radiographic plate or image intensifier can be used to obtain and review the images intra - operatively . The operating table should be tilted head-down by tic ducts. approximately 20° to facilitate filling of the intrahepa Care should be taken when injecting contrast not to intro - duce air bubbles into the system as these may mimic the appearance of stones. Operative biliary endoscopy (choledochoscopy) At operation, a flexible fibreoptic endoscope can be passed either via the cystic duct or directly via a choledochotomy (open or laparoscopic) into the CBD, enabling stone identifi - cation and removal under direct vision. After exploration of - .). -

Plain radiograph: calci /f_i cation, air within the biliary system USG: stones and biliary dilatation MRCP:

anatomy and stones CT scan: anatomy, and liver, biliary and pancreatic cancer Radioisotope scanning (HIDA scan): function ERCP: anatomy, stones and biliary strictures, with or without cholangioscopy PTC: anatomy and biliary strictures EUS: anatomy, stones

Angle to 20º Radiographic /f_i lm Figure 71.17 Peroperative cholangiography using a radiolucent table- top. Figure 71.18 Peroperative cholangiography. Technique of introducing contrast.

the bile duct, a tube can be left in the cystic duct remnant or in the CBD (T tube) and drainage of the biliary tree established. After 7–10 days, a track will be established. This track can be used subsequently for the passage of a choledochoscope or radiologically guided stone retrieval catheter (Burhenne technique) to remove residual stones. Laparoscopic ultrasonography At laparoscopy , a laparoscopic ultrasound probe can be used to closely image the extrahepatic biliary system. This technique is useful in biliary and pancreatic tumour staging as it can determine the relationship of the tumour to major vessels such as the hepatic artery , superior mesenteric artery , portal vein and superior mesenteric vein.

Figure 71.19 Peroperative cholangiography. (a) Gentle

infusion of contrast, passing with

out hindrance into the duodenum. A normal duct. (b) Dilated duct containing multiple stones; there is a delay in contrast passing into the duodenum.

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