



Coding stage – Session 6

Hepatobiliary and Pancreatic cancer

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Hepatobiliary and Pancreatic Cancer and TNM

Specific TNM classifications for:

- **Liver** => Hepatocellular carcinoma
- **Intrahepatic Bile Ducts**
 - Intrahepatic cholangiocarcinoma, cholangiocellular ca, and combined hepatocellular and cholangiocarcinoma (mixed)
- **Gallbladder and Cystic Duct:** carcinomas
- **Perihilar Bile Ducts** (Klatskin tumour): Right, Left & Common Hepatic Ducts: carcinoma
- **Distal Extrahepatic Bile Duct** (distal to the insertion of the cystic duct): carcinoma
- **Ampulla of Vater:** carcinoma
- **Pancreas:** exocrine pancreas and/or high grade NE carcinomas
 - Note: well differentiated NET=> see TNM classification for NET

General rules

T-category:

mostly based on dimensions and invasion (vessels, adjacent organs)

Booklet UICC TNM 8th edition: always TX – T0 – Tis possibilities (errata)

M-category: always M0 or M1

cT categories correspond to pT categories

cN categories correspond to pN categories

N: specific lymph node regions!

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Liver: T, N and M-category (C22.0)

Histology: Hepatocellular carcinoma (cholangiocarcinoma => see intrahepatic bile duct)

T-category based on

- Presence of vascular invasion: radiologically or pathologically assessed
- Number of tumour nodules (single <> [multiple](#))
- Size of the largest tumour
 - T1a Solitary tumour 2 cm or less in greatest dimension with or without vascular invasion
 - T1b Solitary tumour more than 2 cm in greatest dimension without vascular invasion
 - T2 Solitary tumour with vascular invasion more than 2 cm dimension *or* multiple tumours, none more than 5 cm in greatest dimension
 - T3 Multiple tumours any more than 5 cm in greatest dimension
 - T4 Tumour(s) involving a major branch of the portal or hepatic vein with direct invasion of adjacent organs (including the diaphragm), other than the gallbladder *or* with perforation of visceral peritoneum

N-category: N0-N1

M-category: M0-M1

The regional lymph nodes are the hilar, hepatic (along the proper hepatic artery), periportal (along the portal vein), inferior phrenic, and caval nodes.

Intrahepatic bile ducts (C22.1): T, N and M-category

T-category based on

- Presence of vascular invasion: radiologically or pathologically assessed
- Number of tumour nodules (single <> multiple)
- Size of the largest tumour
- *Presence of visceral peritoneal perforation +/-* direct involvement of local extrahepatic structures
 - T1a Solitary tumour 5 cm or less in greatest dimension without vascular invasion
 - T1b Solitary tumour more than 5 cm in greatest dimension without vascular invasion
 - T2 Solitary tumour with intrahepatic vascular invasion *or* multiple tumours, with or without vascular invasion
 - T3 Tumour perforating the visceral peritoneum
 - T4 Tumour involving local extrahepatic structures by direct hepatic invasion

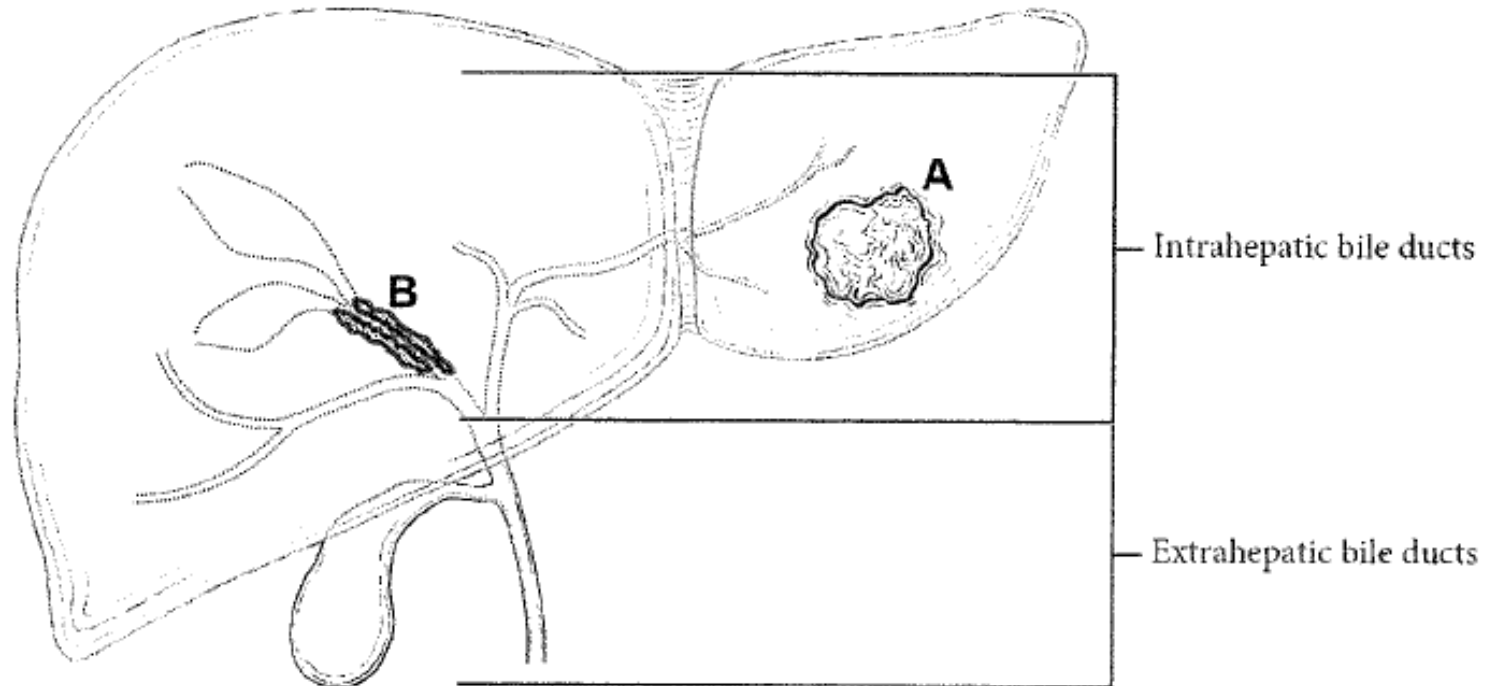
Note: invasion in gallbladder = T3

N-category: N0-N1

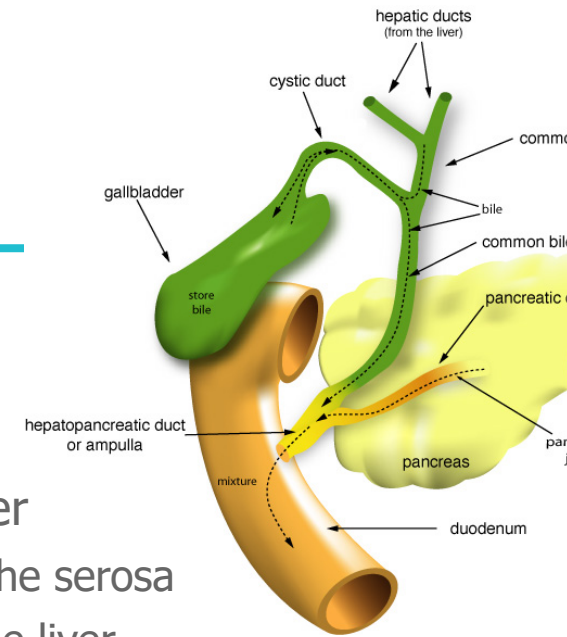
M-category: M0-M1 (also spread to the coeliac and/or periaortic and caval lymph nodes=M1)

Intrahepatic vs extrahepatic bile ducts

Liver diagram: intrahepatic bile ducts versus extrahepatic bile ducts



Gallbladder (and cystic duct) c23.0 – c24.0



- T1 Tumour invades lamina propria or muscular layer
 - T1a Tumour invades lamina propria
 - T1b Tumour invades muscular layer
- T2 Tumour invades perimuscular connective tissue; no extension beyond serosa or into liver
 - T2a Tumour invades perimuscular connective tissue on the peritoneal side with no extension to the serosa
 - T2b Tumour invades perimuscular connective tissue on the hepatic side with no extension into the liver
- T3 **Tumour perforates the serosa** (visceral peritoneum) and/or **directly invades** the liver and/or **one** other adjacent organ/structure, such as stomach, duodenum, colon, pancreas, omentum, extrahepatic bile ducts
- T4 Tumour invades main **portal vein or hepatic artery** or invades ≥ 2 extrahepatic organs or structures

Regional Lymph Nodes

Regional lymph nodes are the hepatic hilus nodes (including nodes along the common bile duct, hepatic artery, portal vein, and cystic duct), coeliac, and superior mesenteric artery nodes.

N0 - N1= 1-3 nodes, N2 = 4 or more nodes

Perihilar bile ducts

Proximal or perihilar bile ducts only

- T1 Tumour confined to the bile duct, with extension up to the muscle layer or fibrous tissue
- T2a Tumour invades beyond the wall of the bile duct to surrounding adipose tissue
- T2b Tumour invades adjacent hepatic parenchyma
- T3 Tumour invades unilateral branches of the portal vein or hepatic artery
- T4 Tumour invades the main portal vein or its branches bilaterally; or the common hepatic artery; or unilateral second-order biliary radicals with contralateral portal vein or hepatic artery involvement

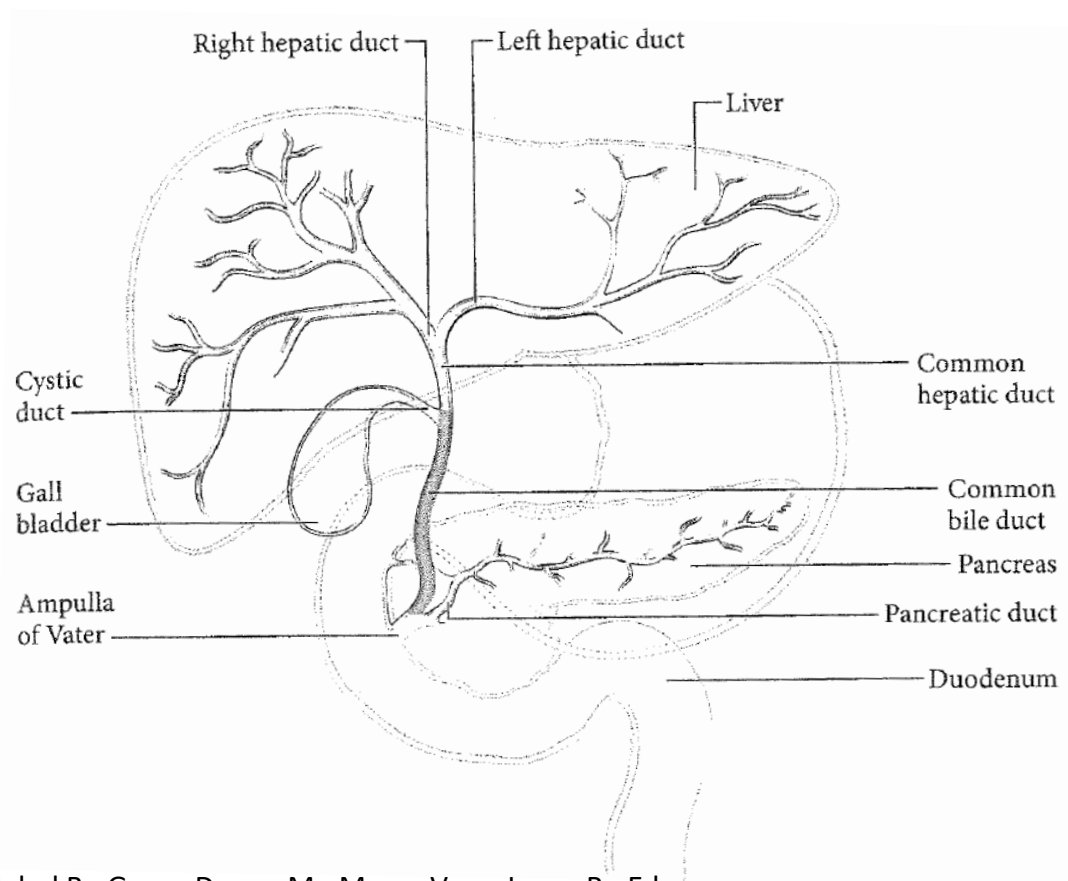
Regional Lymph Nodes

The regional nodes are the hilar and pericholedochal nodes in the hepatoduodenal ligament.

N0 - N1= 1-3 nodes, N2 = 4 or more nodes

Distal extrahepatic bile duct

distal bile ducts tumours. Located between the confluence of the cystic duct and common hepatic duct and the ampulla of Vater (highlighted) (Modified from the College of American Pathologists).



Distal extrahepatic bile duct (C24.0)

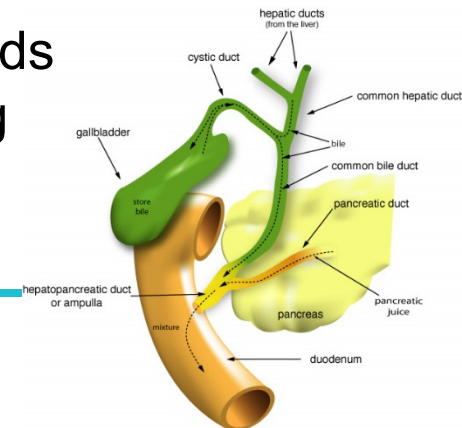
T-category: depth of invasion and invasion vessels

- T1 Tumour invades bile duct wall to a depth less than 5 mm
- T2 Tumour invades bile duct wall to a depth of 5 mm up to 12 mm
- T3 Tumour invades bile duct wall to a depth of more than 12 mm
- T4 Tumour involves the coeliac axis, the superior mesenteric artery and/ or the common hepatic artery

N-category

The regional lymph nodes are along the common bile duct, hepatic artery, back towards the coeliac trunk, posterior and anterior pancreaticoduodenal nodes, and nodes along the superior mesenteric artery

N0 - N1= 1-3 nodes, N2 = 4 or more nodes



Ampulla of Vater c24.1

T-category

- T1a Tumour limited to ampulla of Vater or sphincter of Oddi
- T1b Tumour invades beyond the sphincter of Oddi (peri-sphincteric invasion) and/or into the duodenal submucosa
- T2 Tumour invades the muscularis propria of the duodenum
- T3 Tumour invades pancreas
 - T3a Tumour invades 0.5 cm or less into the pancreas *or peripancreatic tissue*
 - T3b Tumour invades more than 0.5 cm into the pancreas or extends into peripancreatic tissue or duodenal serosa but without involvement of the celiac axis or the superior mesenteric artery
- T4 Tumour with **vascular involvement** of superior mesenteric artery or celiac axis or common hepatic artery

The regional lymph nodes are the same as for the head of the pancreas and are the lymph nodes along the common bile duct, common hepatic artery, portal vein, pyloric, infrapyloric, subpyloric, proximal mesenteric, coeliac, posterior and anterior pancreaticoduodenal vessels, and along the superior mesenteric vein and right lateral wall of the superior mesenteric artery.

N0 - N1= 1-3 nodes, N2 = 4 or more nodes

Pancreas (C25): T-category

- Exocrine pancreas and/or high grade NE carcinomas, Well diff NET of the pancreas => see NET

T-category: dimension and invasion artery

- T1 Tumour **2 cm or less** in greatest dimension
 - T1a Tumour 0.5 cm or less in greatest dimension
 - T1b Tumour greater than 0.5 cm and *no more* than 1 cm in
 - T1c Tumour greater than 1 cm but no more than 2 cm in greatest dimension
- T2 Tumour **more than 2 cm but no more than 4 cm** in greatest dimension
- T3 Tumour **more than 4 cm** in greatest dimension
- T4 Tumour **involves** coeliac axis, superior mesenteric artery and/or common hepatic artery

Note: in the absence of arterial involvement, the T category is based on size regardless of invasion of adjacent organs or veins! Extrapancreatic extension: difficult to determine because the pancreas does not have a capsule.

T4 => radiographic and endoscopic data cT4 (pT4)



Pancreas N-category

Different definition for the regional lymph nodes if tumour in the head/neck of the pancreas and tumour in the body/tail

Regional Lymph Nodes

- The regional lymph nodes for **tumours in the head and neck** of the pancreas are the lymph nodes along the common bile duct, common hepatic artery, portal vein, pyloric, infrapyloric, subpyloric, proximal mesenteric, coeliac, posterior, and anterior pancreaticoduodenal vessels, and along the superior mesenteric vein and right lateral wall of the superior mesenteric artery.
- The regional lymph nodes for **tumours in body and tail** are the lymph nodes along the common hepatic artery, coeliac axis, splenic artery, and splenic hilum, as well as retroperitoneal nodes and lateral aortic nodes

Tumours of the pancreas

- Tumours of **the head of the pancreas** are those arising to the right of the superior mesenteric-portal vein confluence.
- Tumours of the **body of the pancreas** are those arising between the left border of the superior mesenteric vein and the left border of the aorta.
- Tumours of the **tail of the pancreas** are those arising between the left border of the aorta and the hilum of the spleen.

