

Anatomy of The Pancreas

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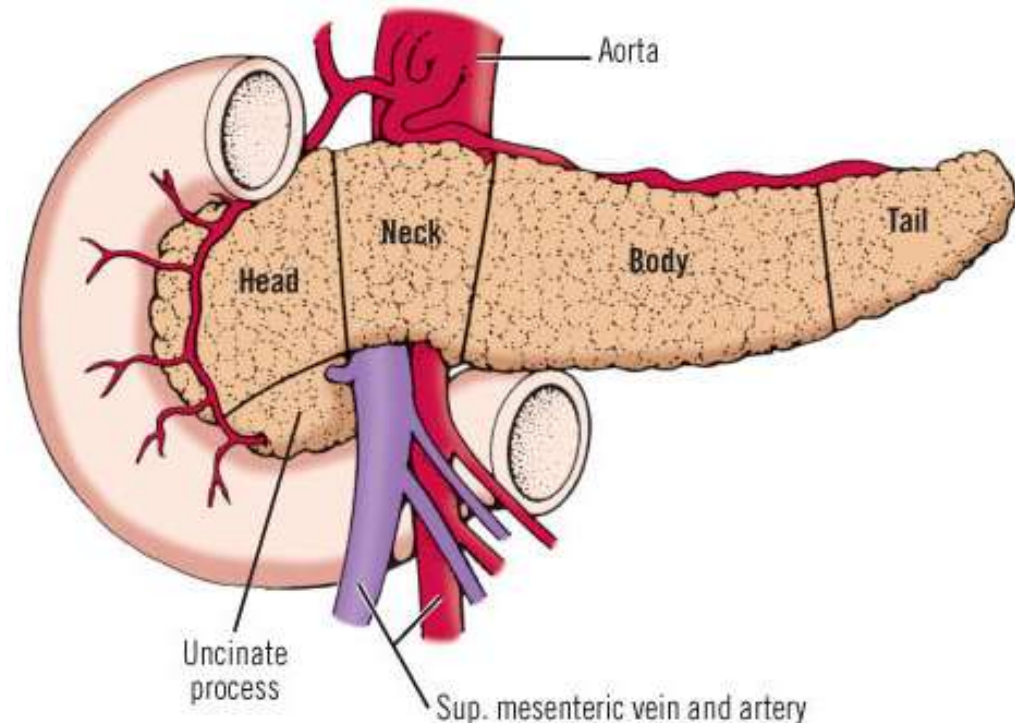
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introduction

- The pancreas is both an **exocrine gland**, producing pancreatic juice that is secreted into the duodenum for digestion, and an **endocrine gland**, producing insulin and glucagon that are released as hormones into the blood

Parts of the Pancreas

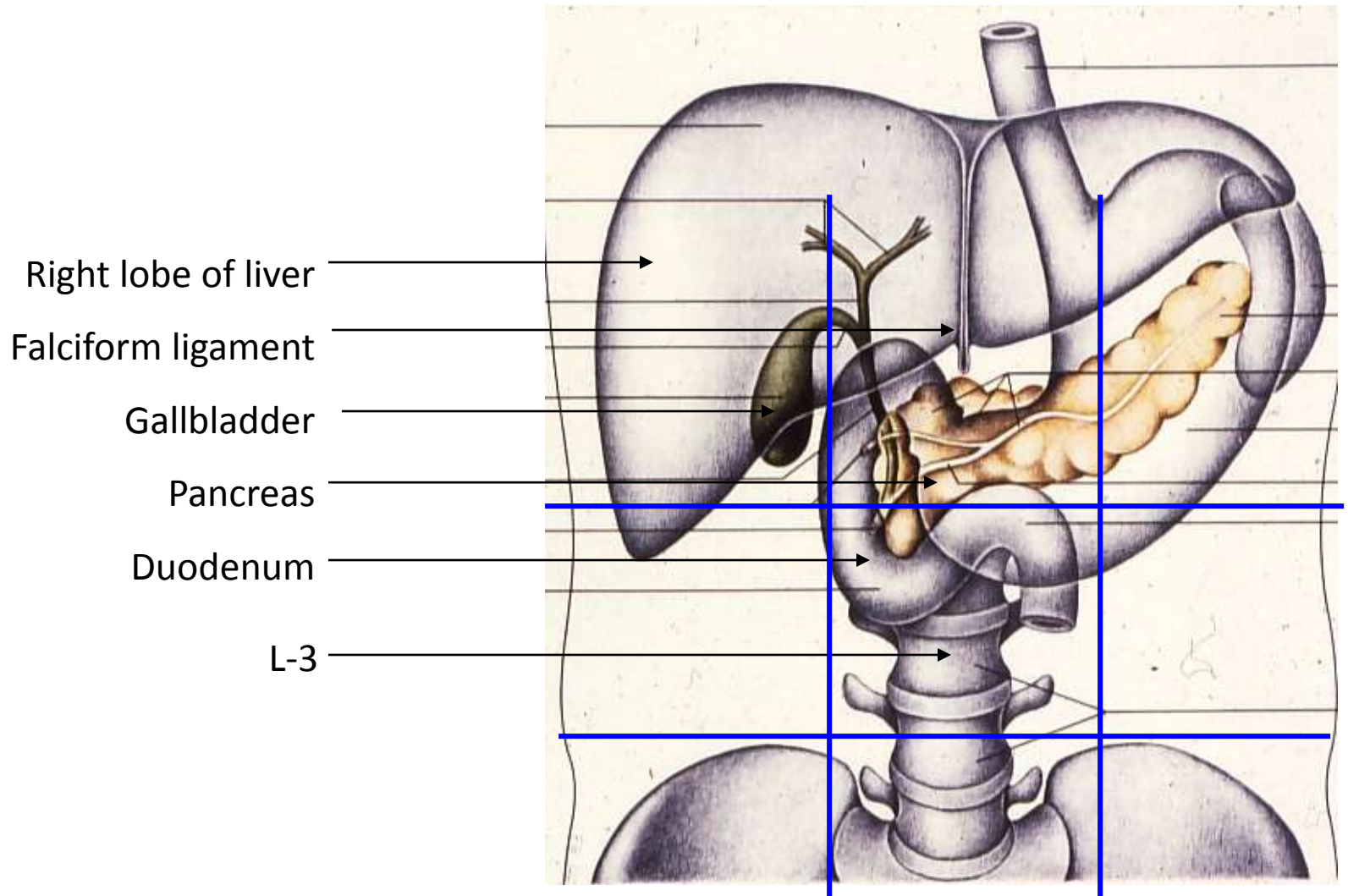
- i. **Head of pancreas** lies within the C-shaped concavity of the duodenum;
- ii. **Uncinate (hooklike) process** projects from the lower part of the head. It passes posterior to the superior mesenteric vessels
- iii. **Neck of pancreas** is anterior to the superior mesenteric vessels, and, posterior to the neck of the pancreas, the superior mesenteric and the splenic veins join to form the portal vein;
- iv. **Body:** Which links the neck to the tail. It is related to the splenic vessels, which supplies it.
- v. **Tail of pancreas** ends as it passes between layers of the splenorenal ligament.



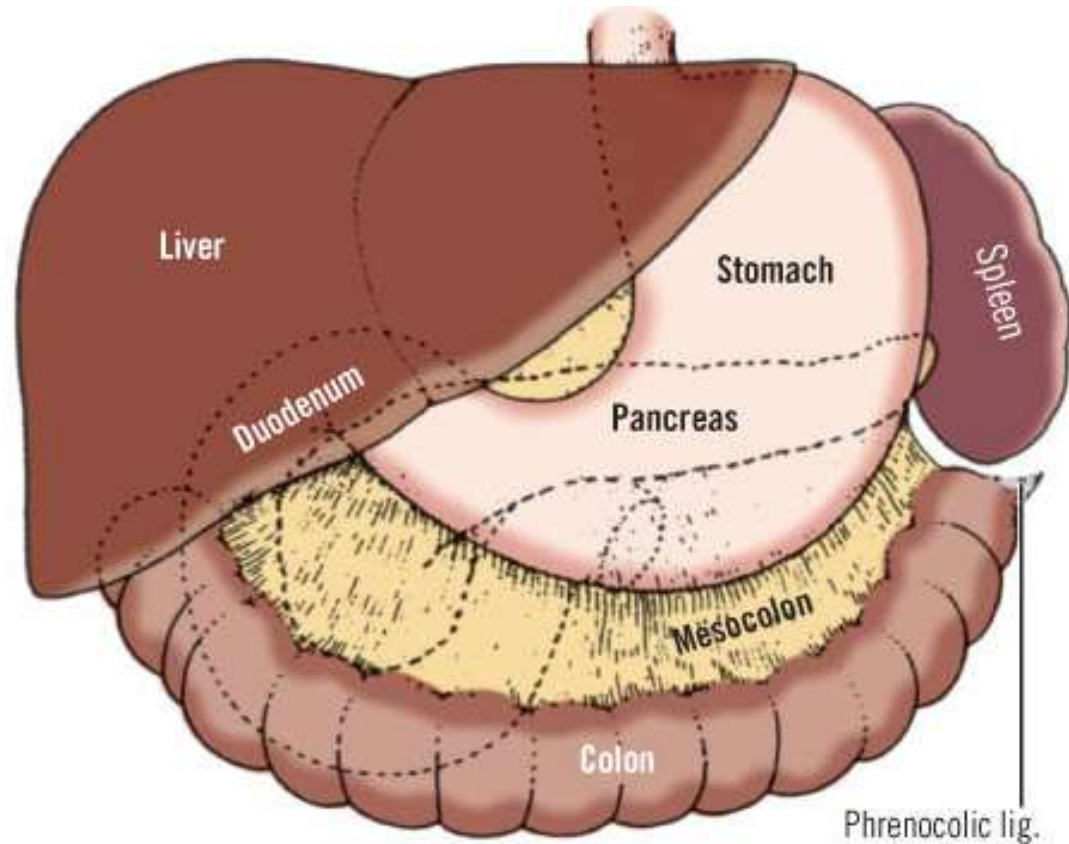
Introduction

- Located in epigastric & left hypochondriac regions
- Lies retroperitoneally at approximately T-12/L-1 to L-3

The Pancreas *in situ*

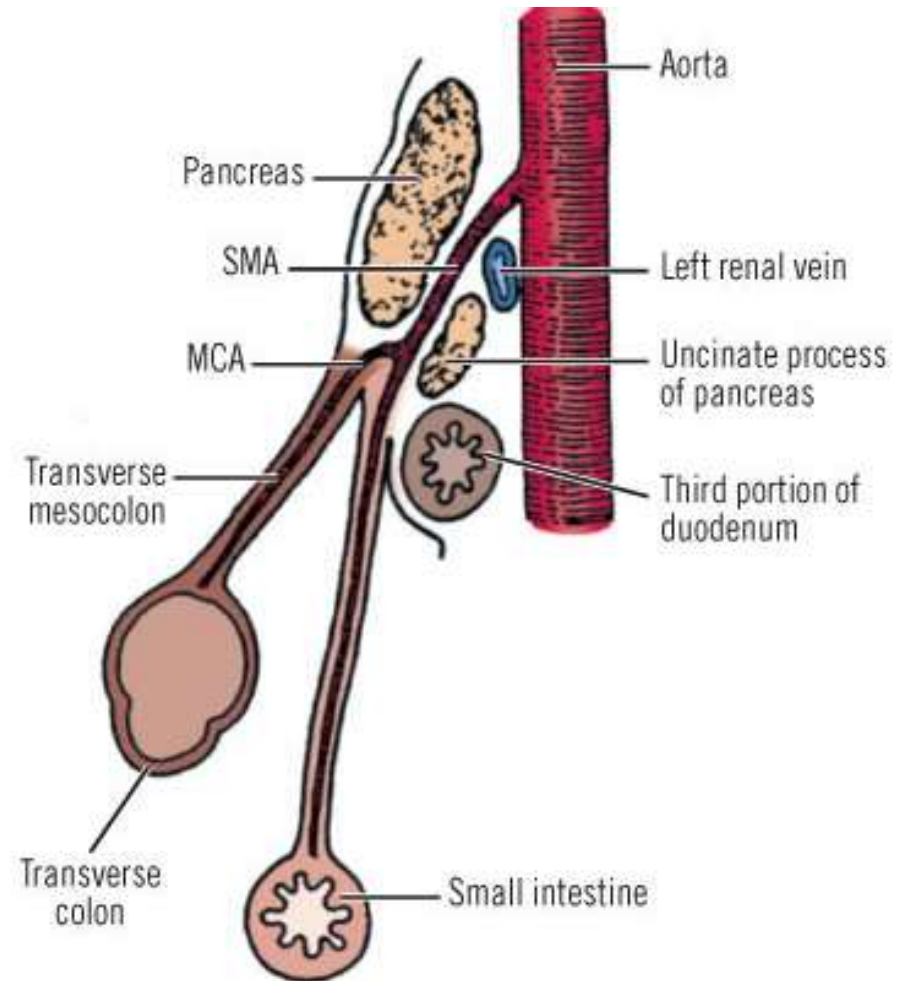


- Head fills concavity of duodenum
- Body crosses left kidney
- Tail reaches hilus of the spleen
- Related anteriorly to transverse colon



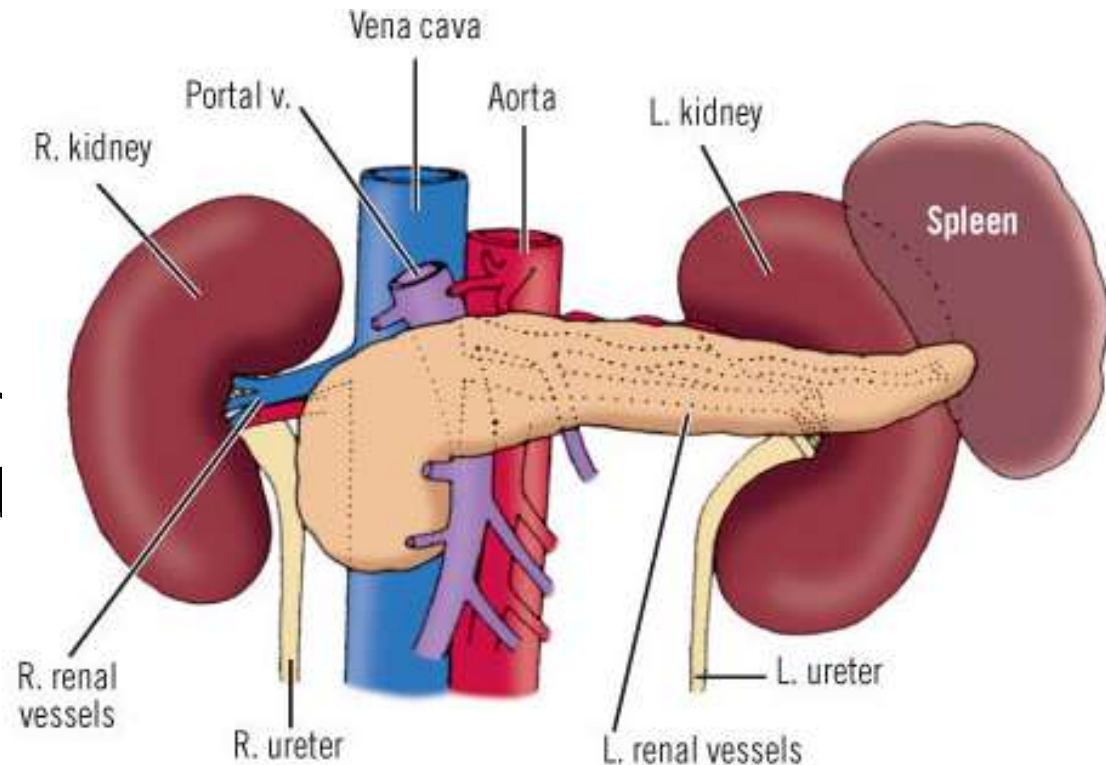
Uncinate process

- Lies posterior to SMA and SMV
- Lies anterior to aorta and the inferior vena cava

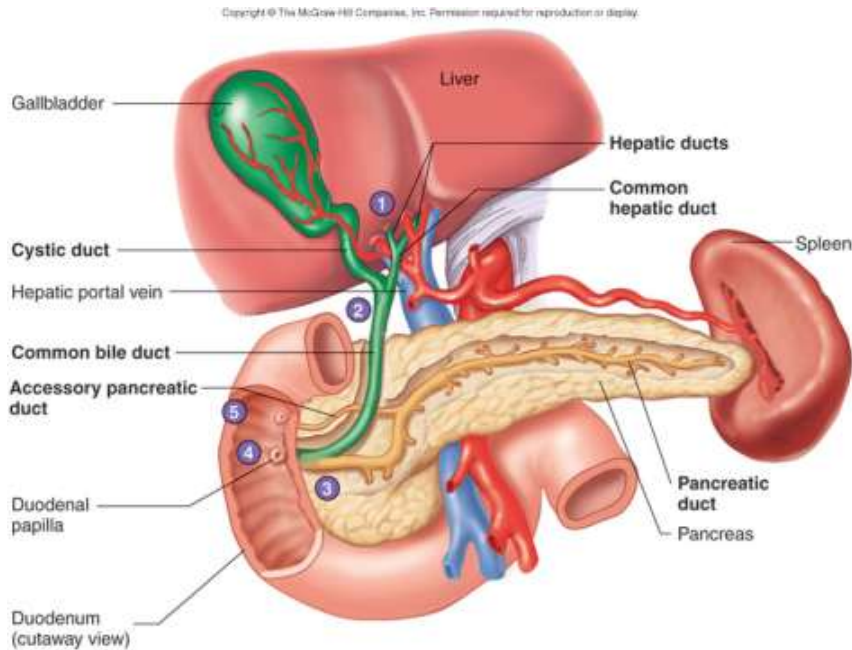


The Neck

- This is the site of passage of the superior mesenteric vessels behind the pancreas
- Lies anterior to Superior Mesenteric Vessels and beginning of the portal vein
- Pylorus is just above



The Body

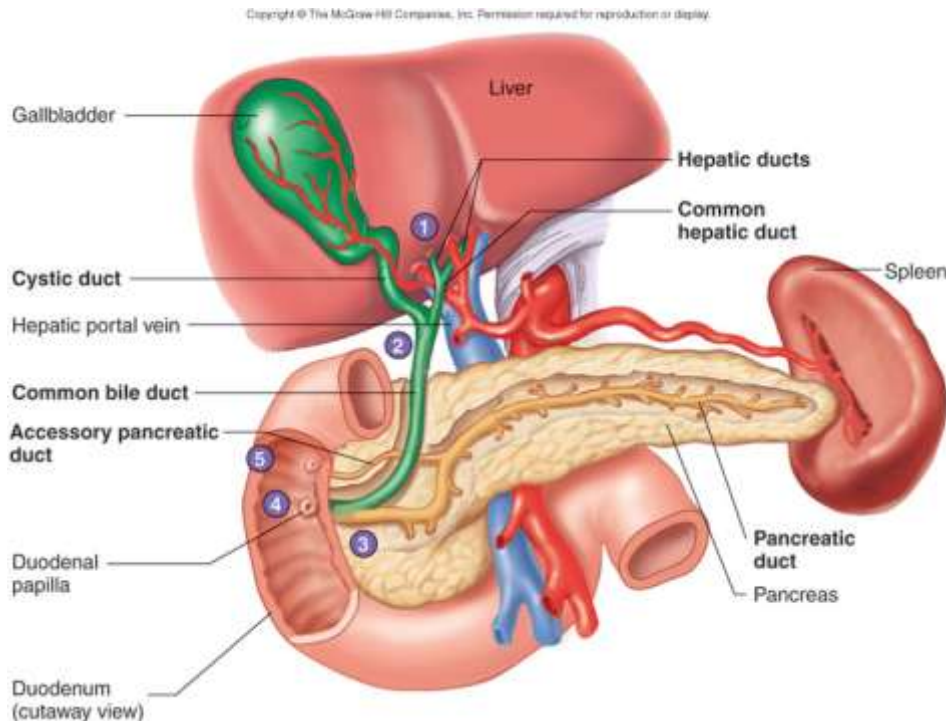


- Related posteriorly to the aorta, the origin of the superior mesenteric artery, the left crus of the diaphragm, the left kidney and its vessels, the left adrenal gland, and the splenic vein

Celiac Axis (trunk, artery)
lies superior to body

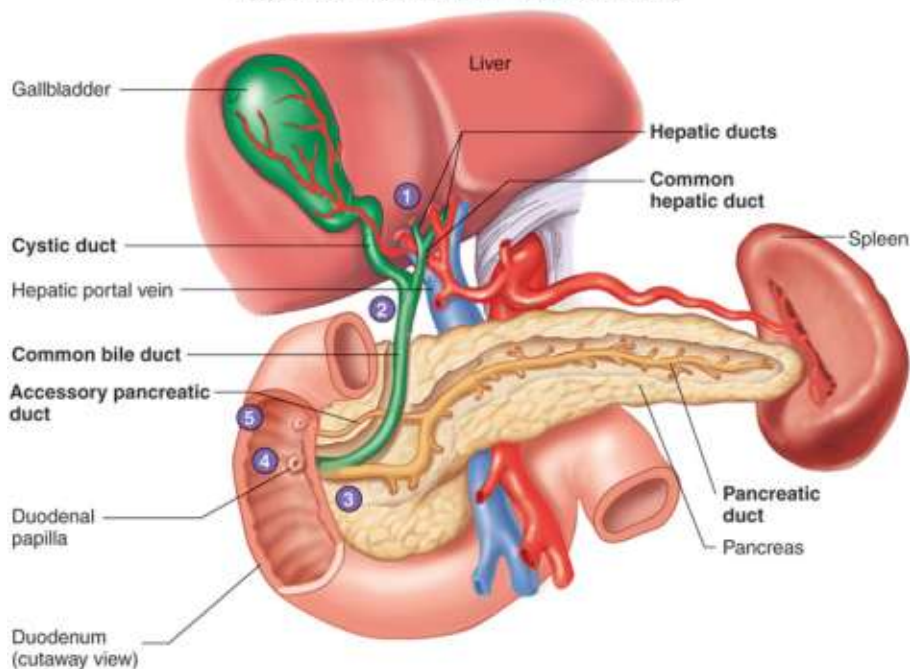
The Body

- The anterior surface of the body of the pancreas is covered by the double layer of peritoneum of the omental bursa that separates the stomach from the pancreas



Landmark structures

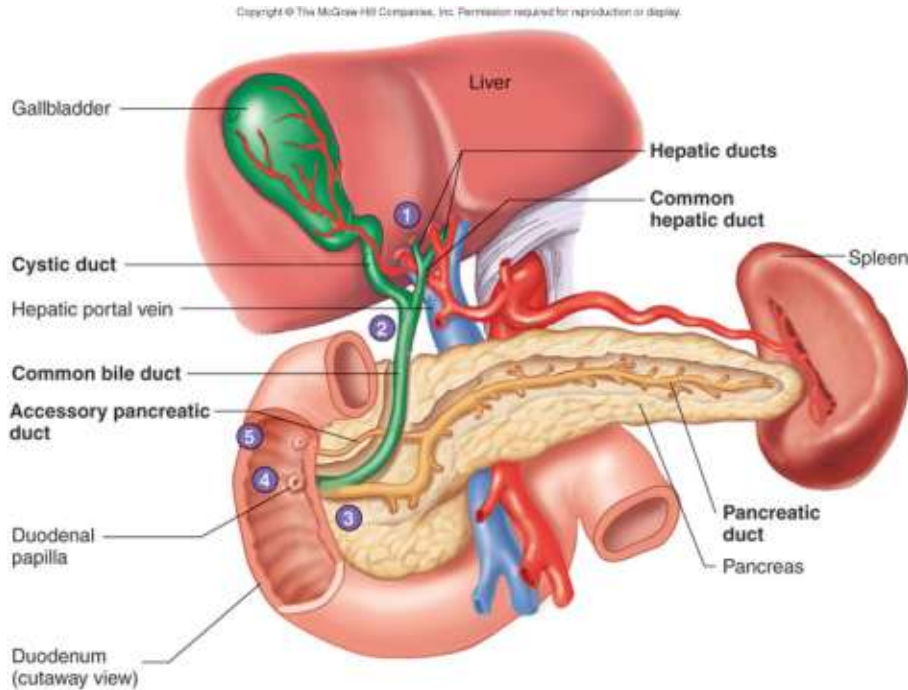
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Splenic Artery:

- Branch of celiac trunk
- Passes right to left
- Course is along upper margin of body and tail

Landmark structures



Hepatic Artery:

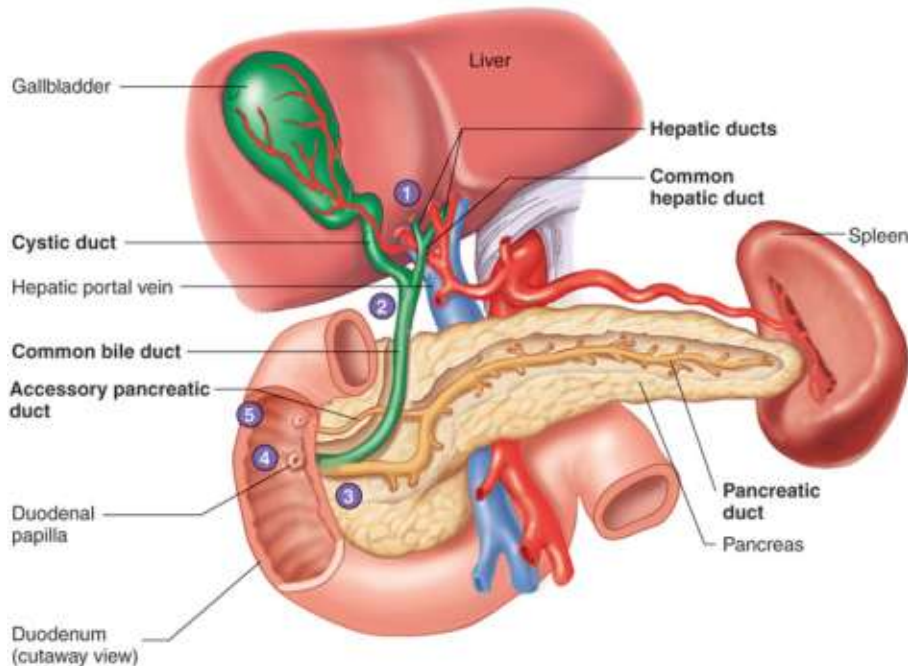
- Branch of celiac trunk
- courses left to right
- along upper margin of neck and head

Superior Mesenteric

Artery: *at its origin from aorta, posterior to the body of pancreas*

Landmark structures

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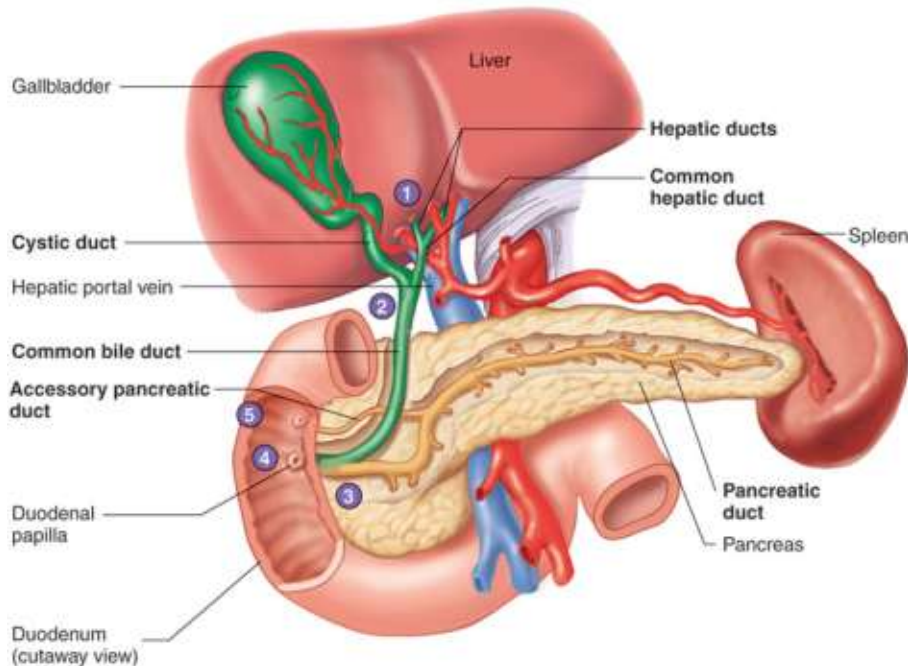


Splenic Vein:

- Runs parallel to artery
- On posterior surface of pancreas
- Terminates in portal vein

Landmark structures

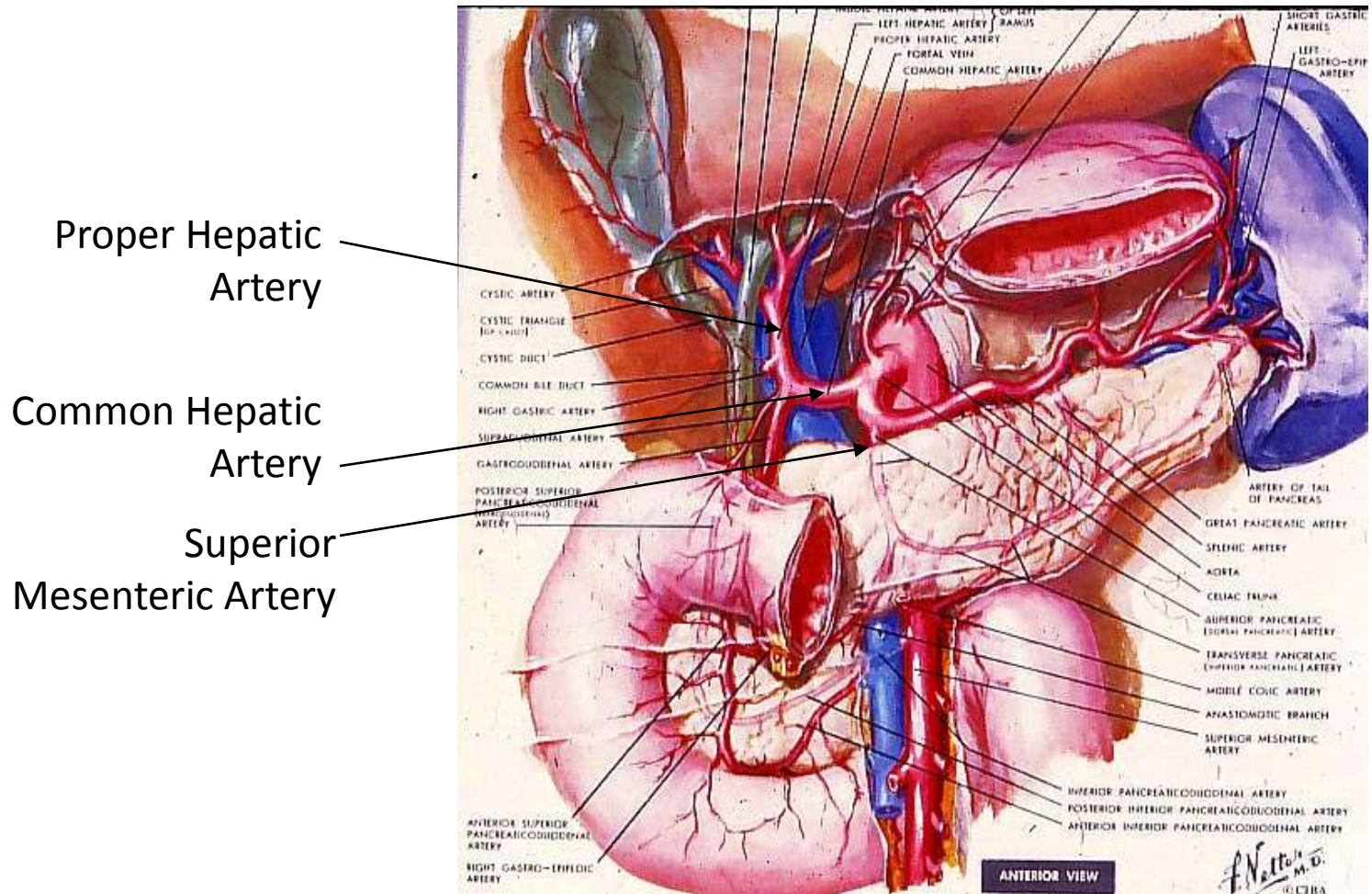
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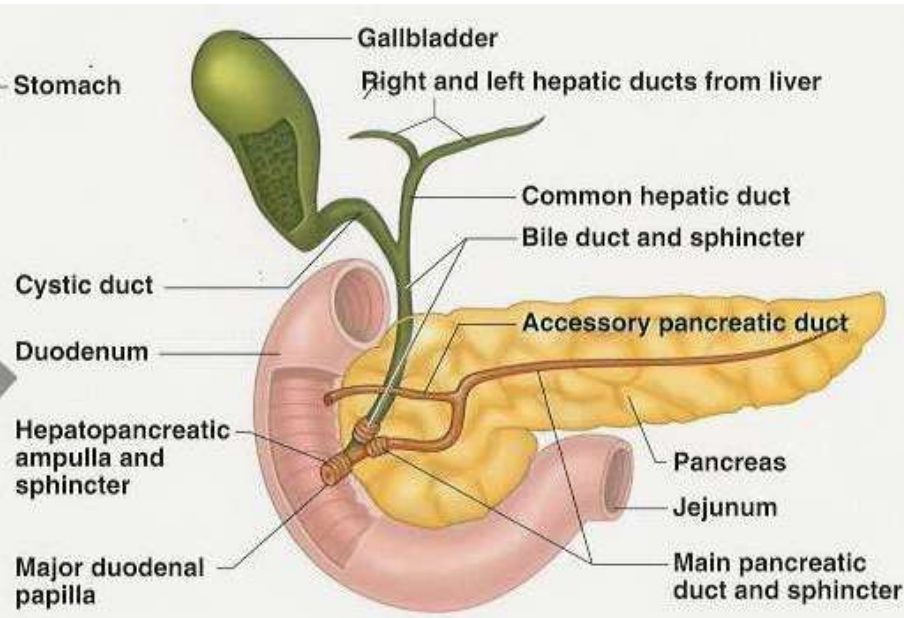
Superior Mesenteric Vein:

- Passes deep to pancreas
- Merges with splenic vein to form the portal vein

Arterial Supply to Pancreas



Landmark structures



Common Bile Duct:

- Passes behind first portion of duodenum
- Then through head of pancreas
- Terminates at ampulla of Vater

Lymphatics from head of pancreas

- Drain to celiac nodes
- Metastases may follow lymph drainage
- Metastases may spread via lesser omentum to liver
- Some terminate in lumbar nodes

Body & Tail of Pancreas

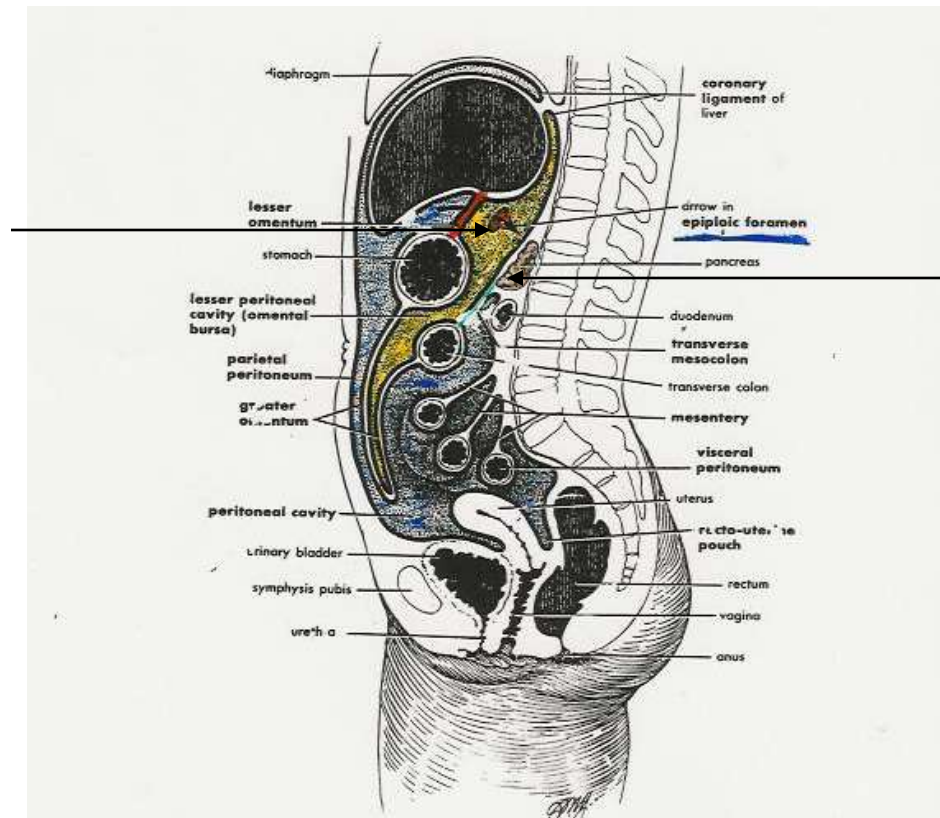
Have three surfaces:

Anterior surface

1. Concave
2. Deep to stomach
3. Separated from stomach by
lesser sac of peritoneum

Anterior surface of pancreas

Epiploic foramen



Anterior surface of pancreas

Body & Tail of Pancreas

Posterior surface: separated from vertebrae by

- Aorta
- Splenic vein
- Left kidney and renal vessels
- Left adrenal gland
- Left Crus of diaphragm
- SMA and SMV

Body & Tail of Pancreas

Inferior surface

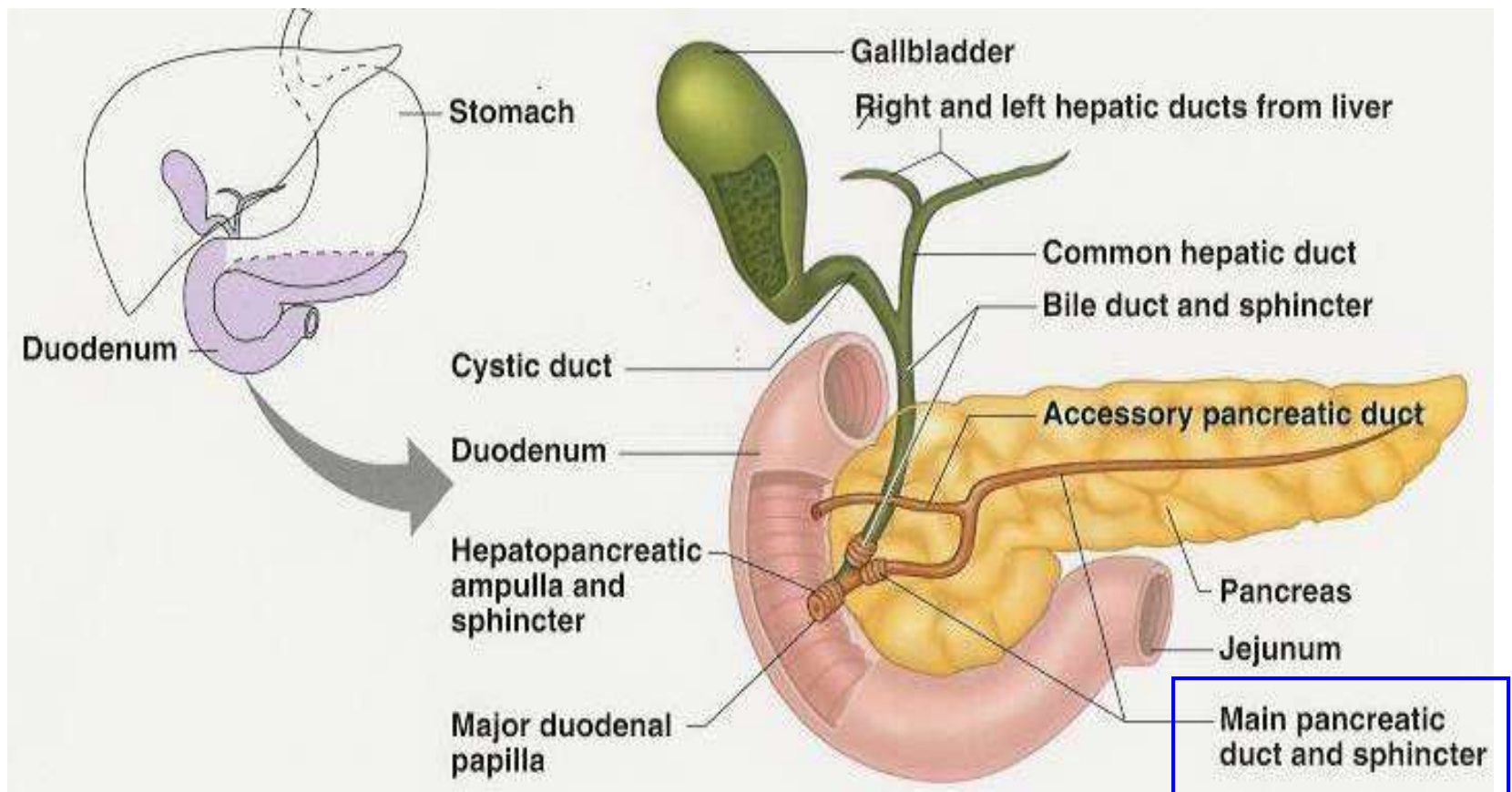
- Rests on duodeno-jejunal flexure
- Left extremity (tail)
 - i. Rests on splenic flexure
 - ii. Abuts hilus of spleen

Pancreatic Duct System

Main Pancreatic Duct (of Wirsung)

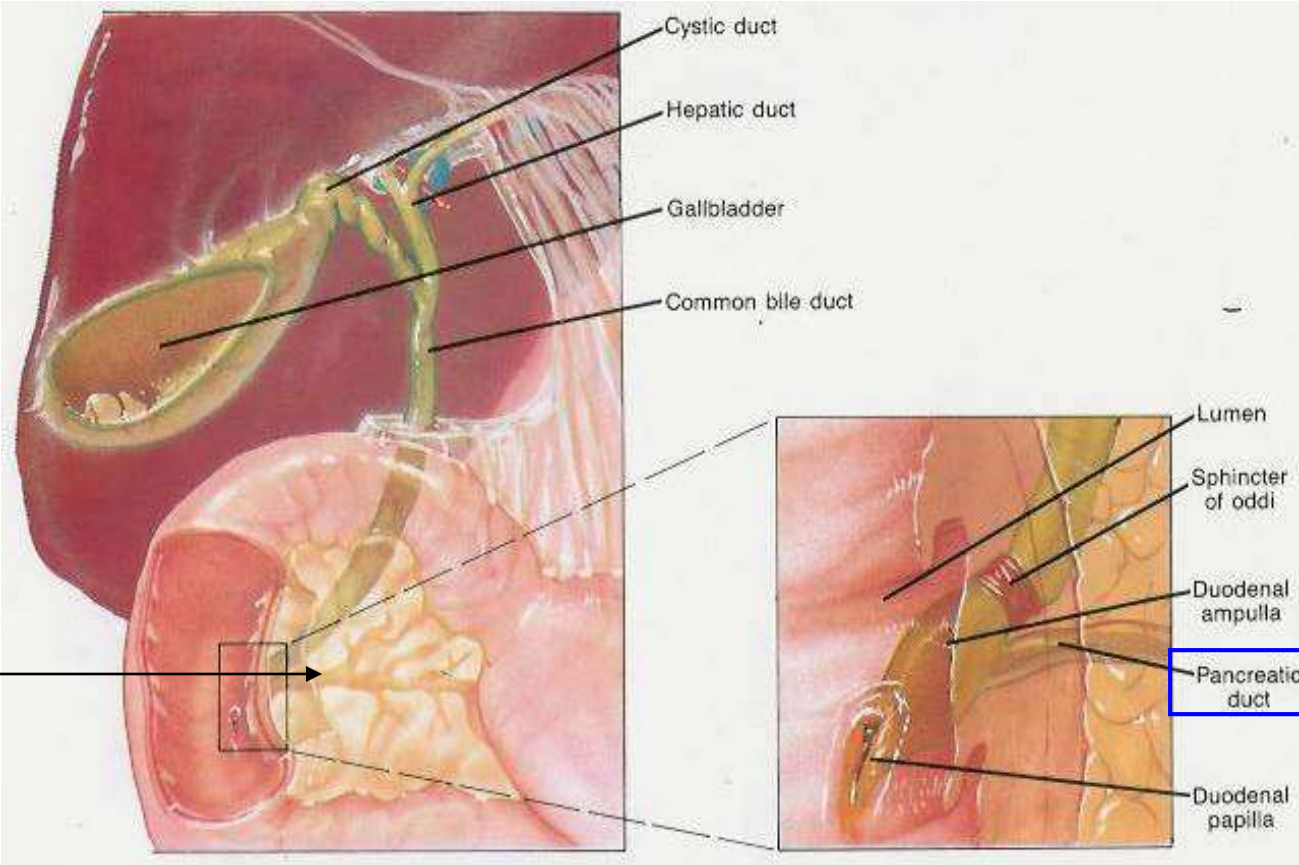
- Begins at the tail
- Course is left to right
- Receives numerous small ducts
- At the neck of pancreas, duct turns inferior, posterior & to the right
- joins CBD at Ampulla of Vater 7-10 cm below pylorus

Duct of Wirsung (Main pancreatic duct)



Duct of Wirsung

Duct of Wirsung

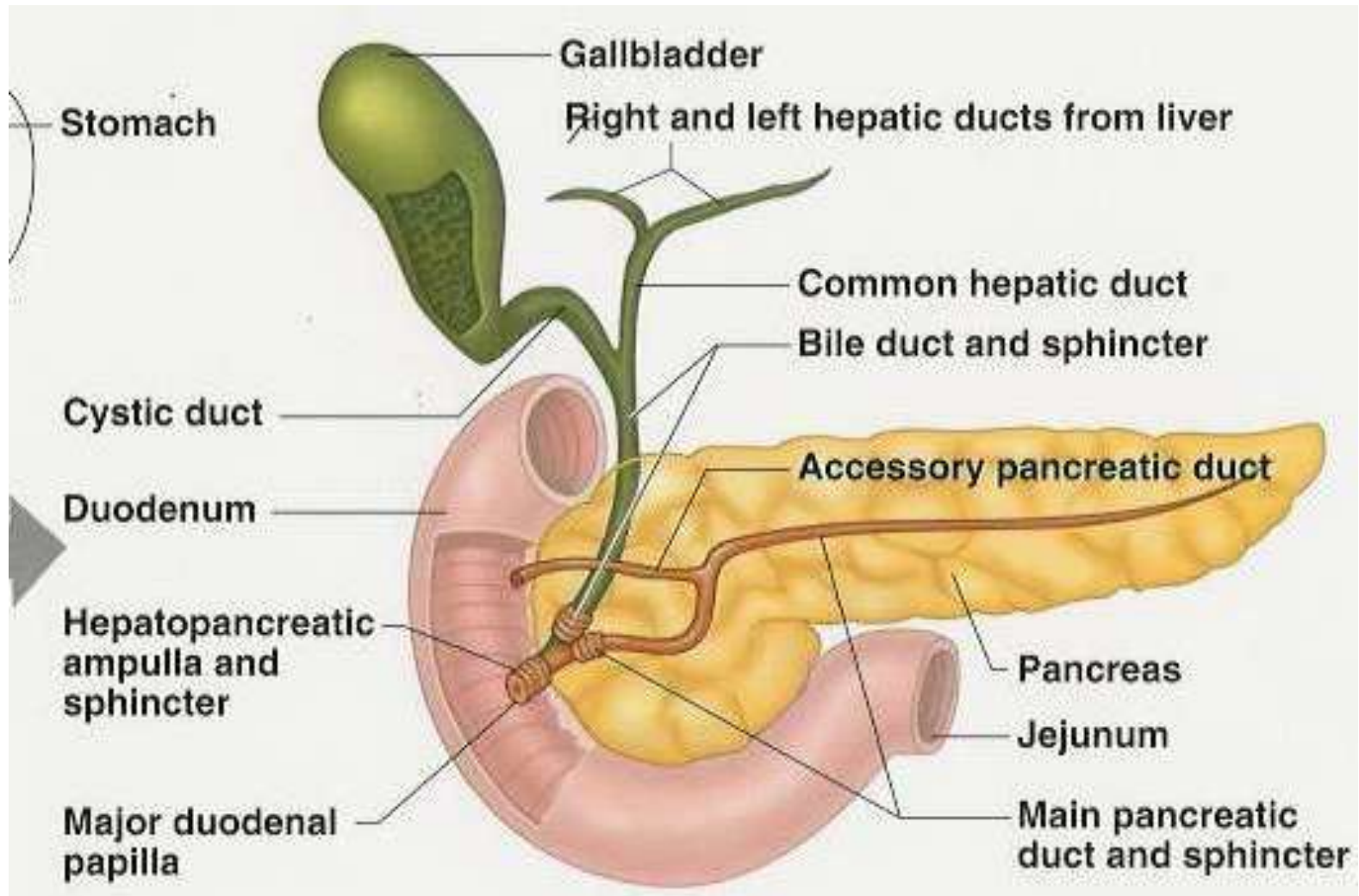


Pancreatic Duct System

Duct of Santorini:

- Accessory pancreatic duct
- Not universally identified
- Joins duodenum at minor papilla
- Part of duct from dorsal pancreas

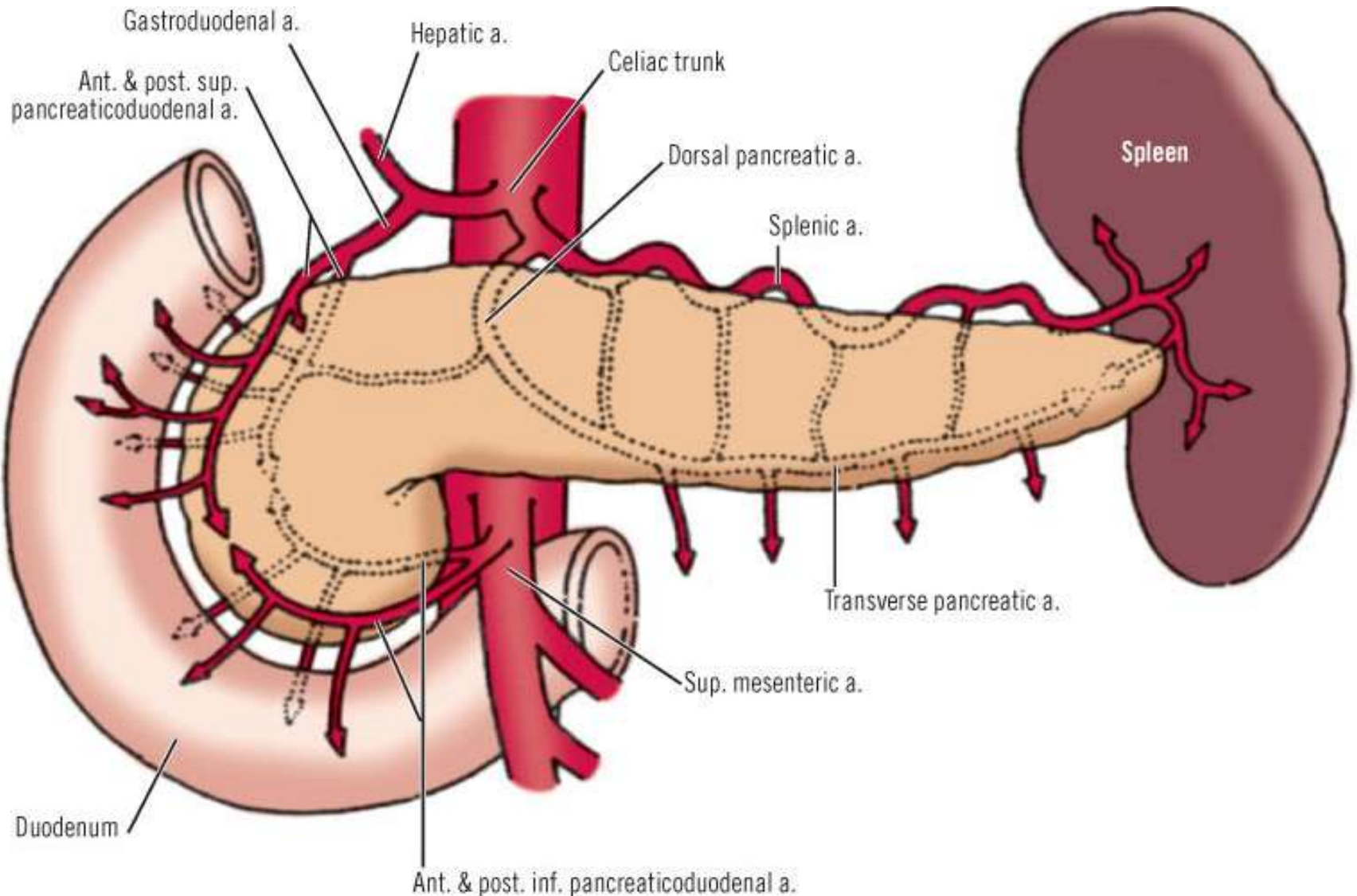
Duct of Santorini



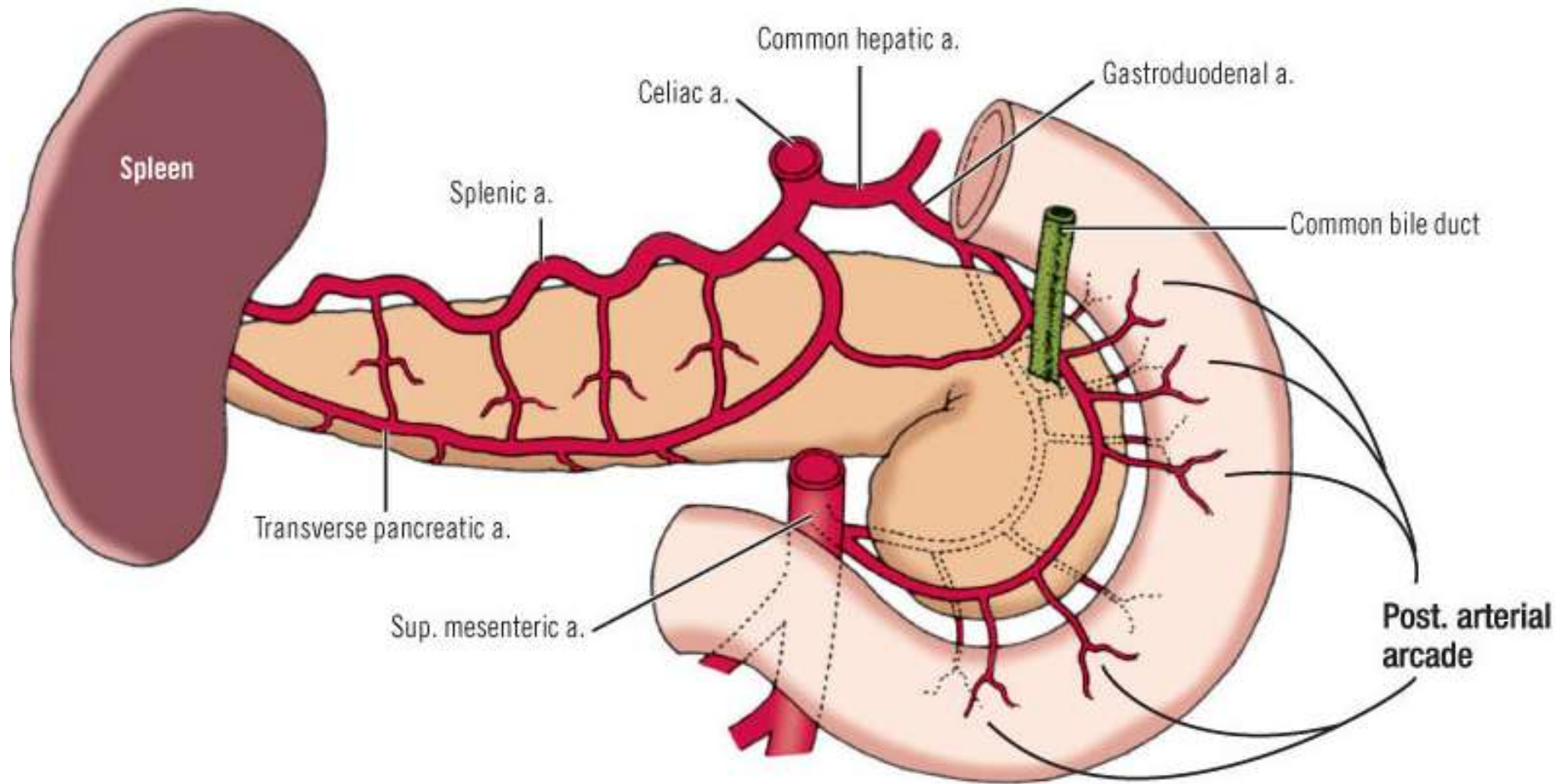
Blood supply of the Pancreas

- Head is supplied:
 - i. Superior pancreaticoduodenal artery
 - ii. Inferior pancreaticoduodenal artery
- Body and tail are supplied by branches from the splenic artery

Arterial Supply: Anterior view



Arterial Supply: Posterior view



Lymphatic drainage

- The pancreatic lymphatic vessels follow the blood vessels to:
 - i. Pancreaticosplenic lymph nodes along the splenic artery.
 - ii. Pyloric lymph nodes.
- Efferent vessels from these nodes drain to the
 - i. Superior mesenteric lymph nodes or to the
 - ii. Celiac lymph nodes via the hepatic lymph nodes.

Lymphatic drainage

