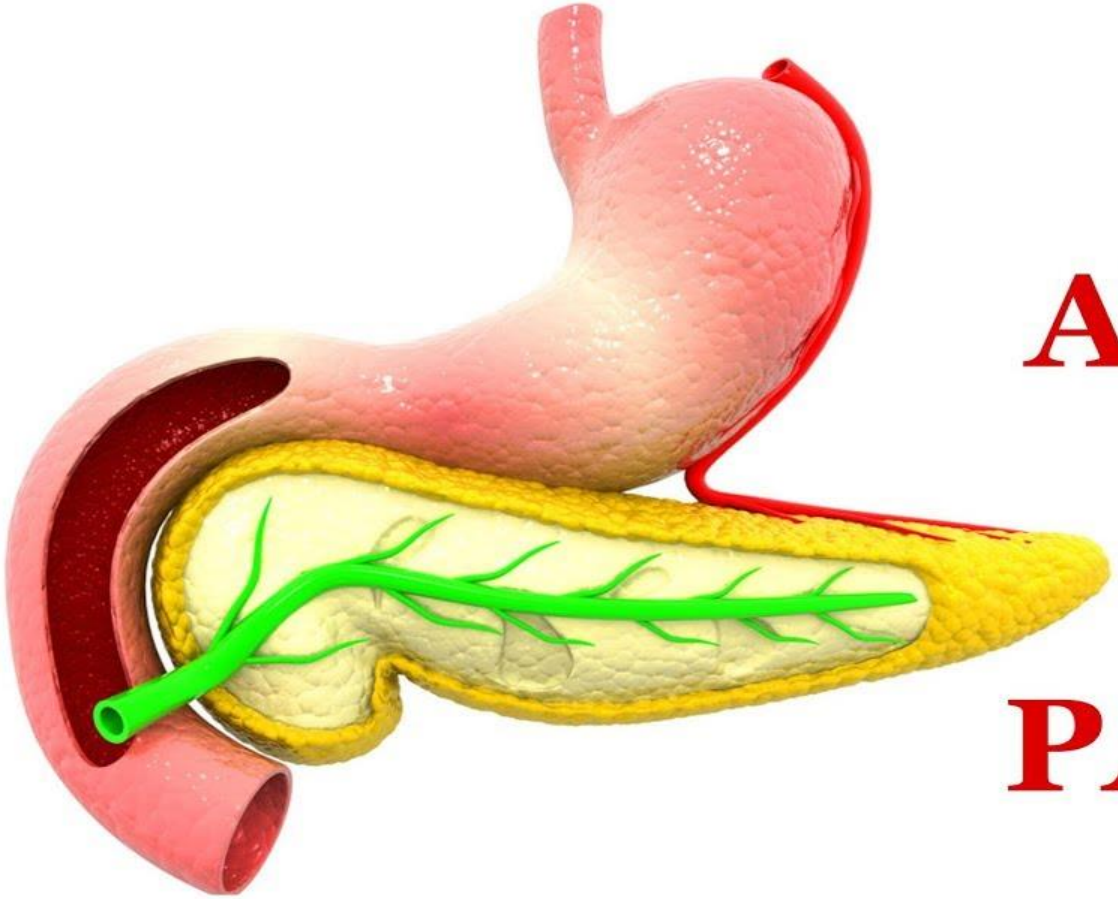
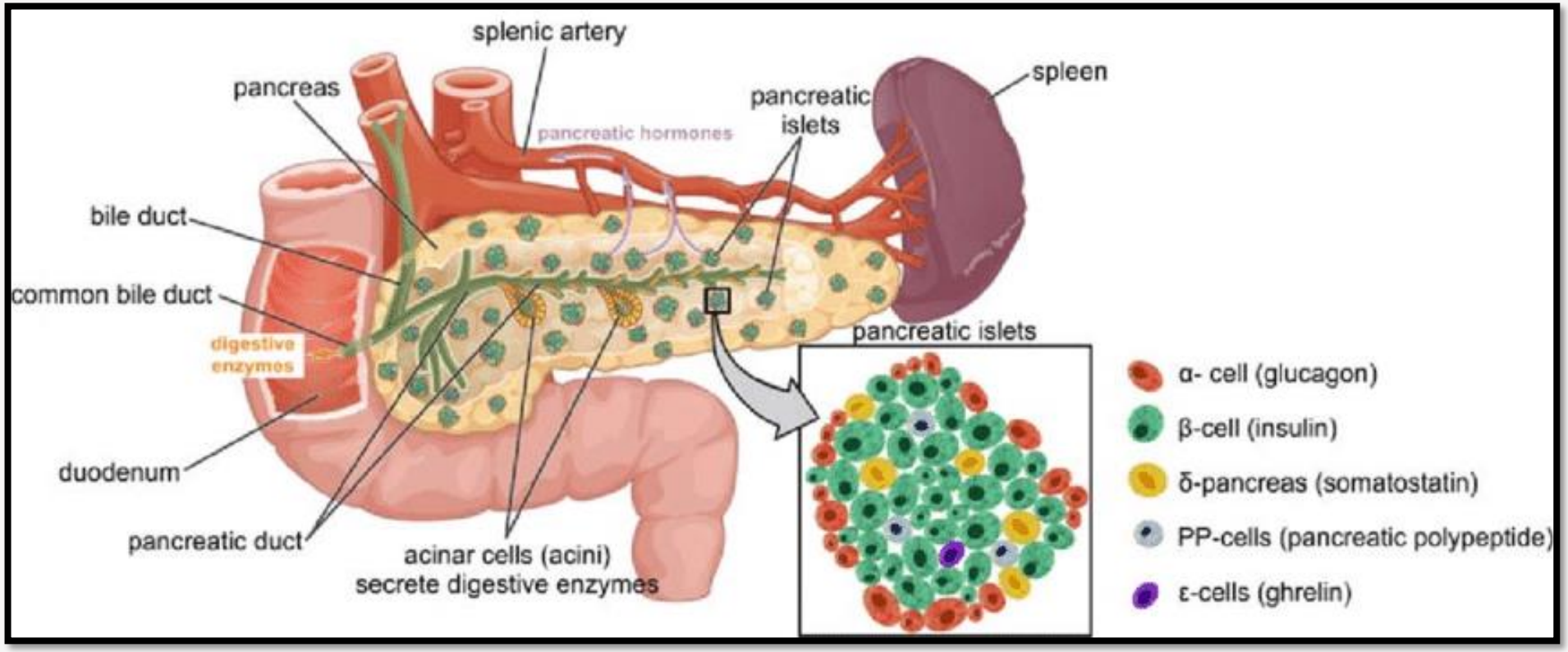


ANATOMY OF PANCREAS

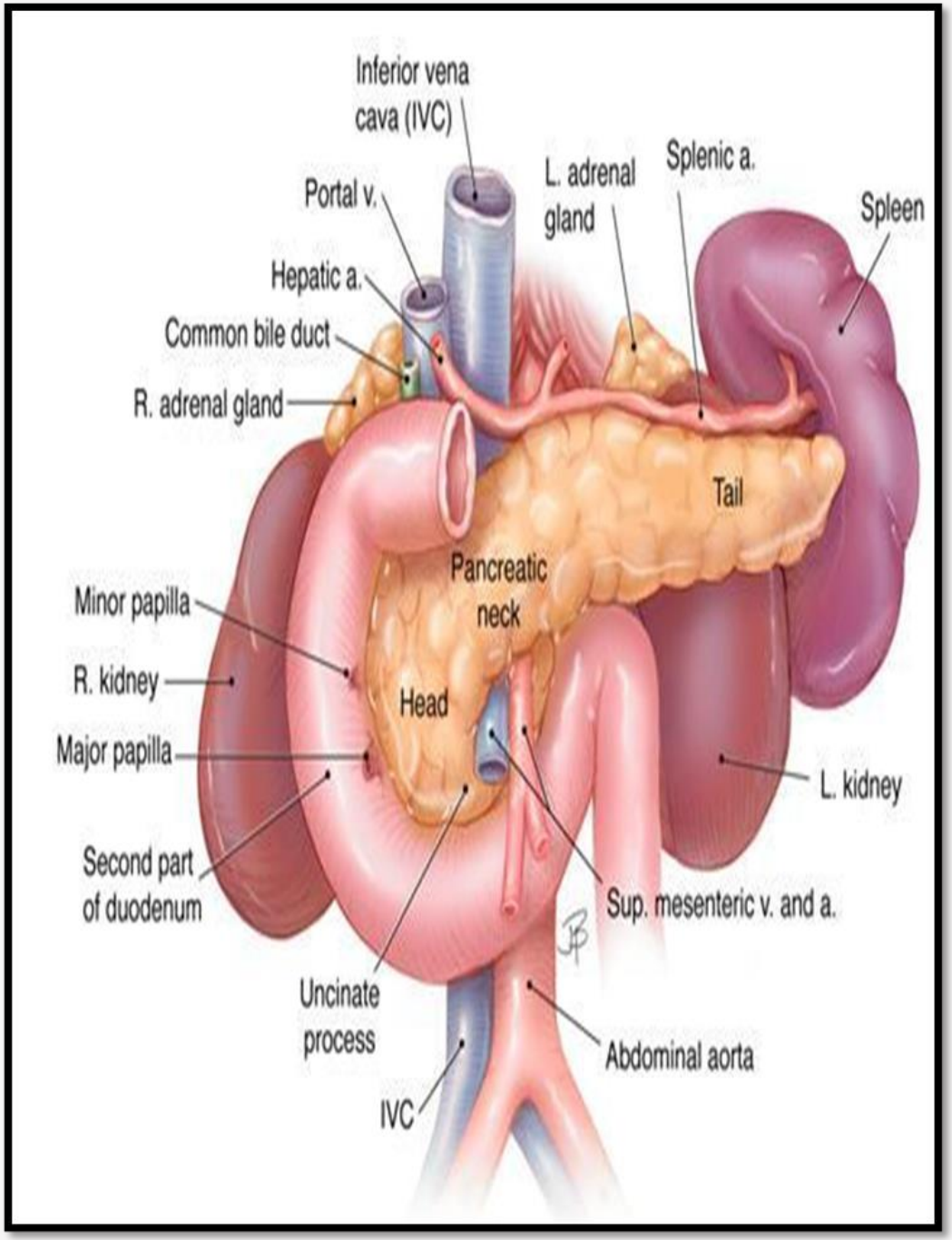
BY DR. DALIA M. BIRAM

Position of the pancreas

It is a combined exocrine & endocrine gland yellow, lobulated gland, lying obliquely across the upper part of posterior abdominal.**It extends from the concavity of the duodenum on the right to the spleen on the left**



.It is **Retroperitoneal** organ except its tail which is totally covered by the peritoneum of lienorenal ligament .It lies in the epigastric, left hypochondriac, and a portion of the umbilical abdominal regions



Parts of pancreas •

It consists of

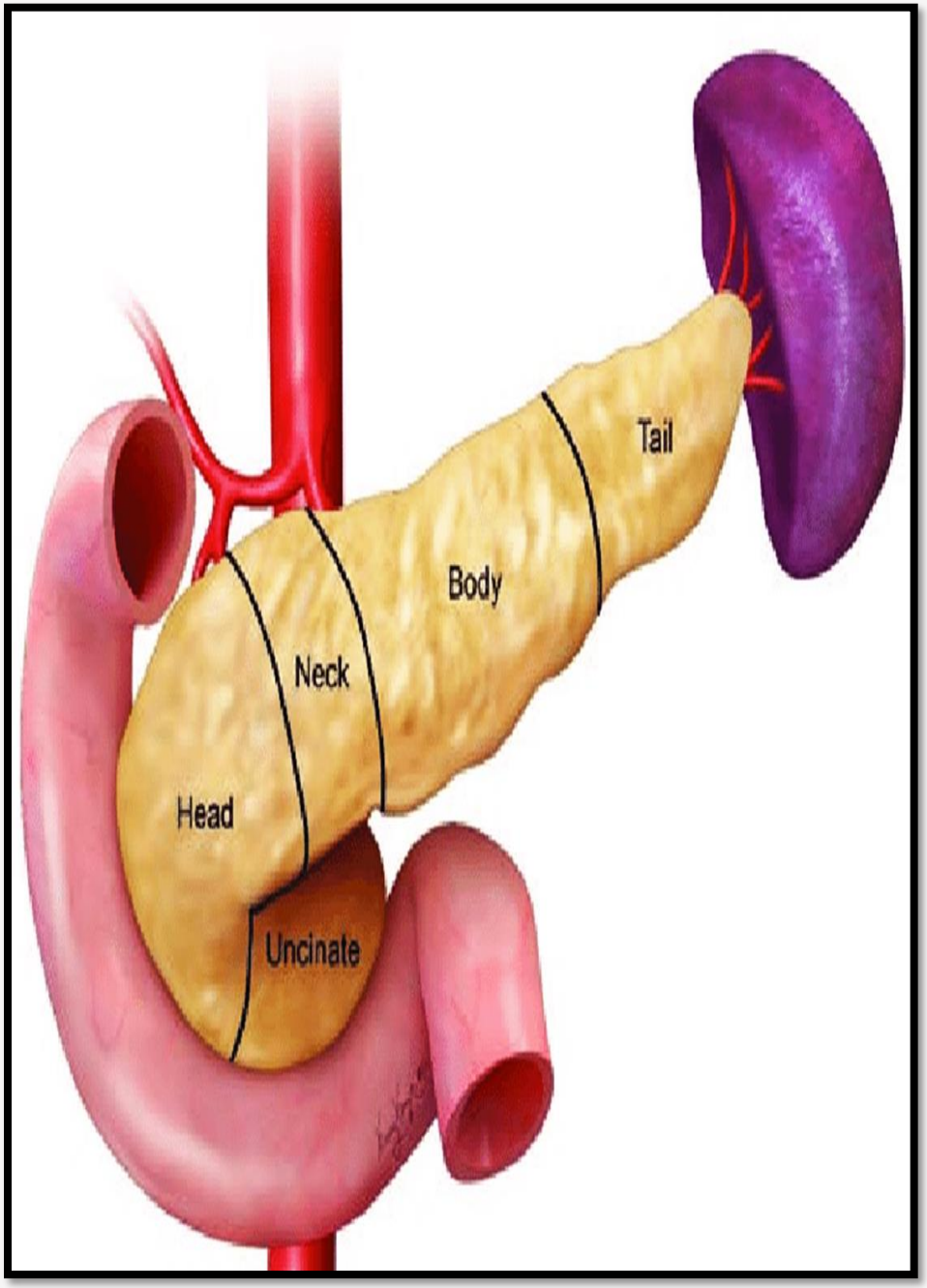
1-head

2- neck, Is a • constricted part between head & body of pancreas

3-body and •

4- tail. •

The lower part of the • **head forms a projection called uncinate process.**



Relations of pancreas

1-Head of pancreas:

It lies in the concavity of the duodenum.

It is related to

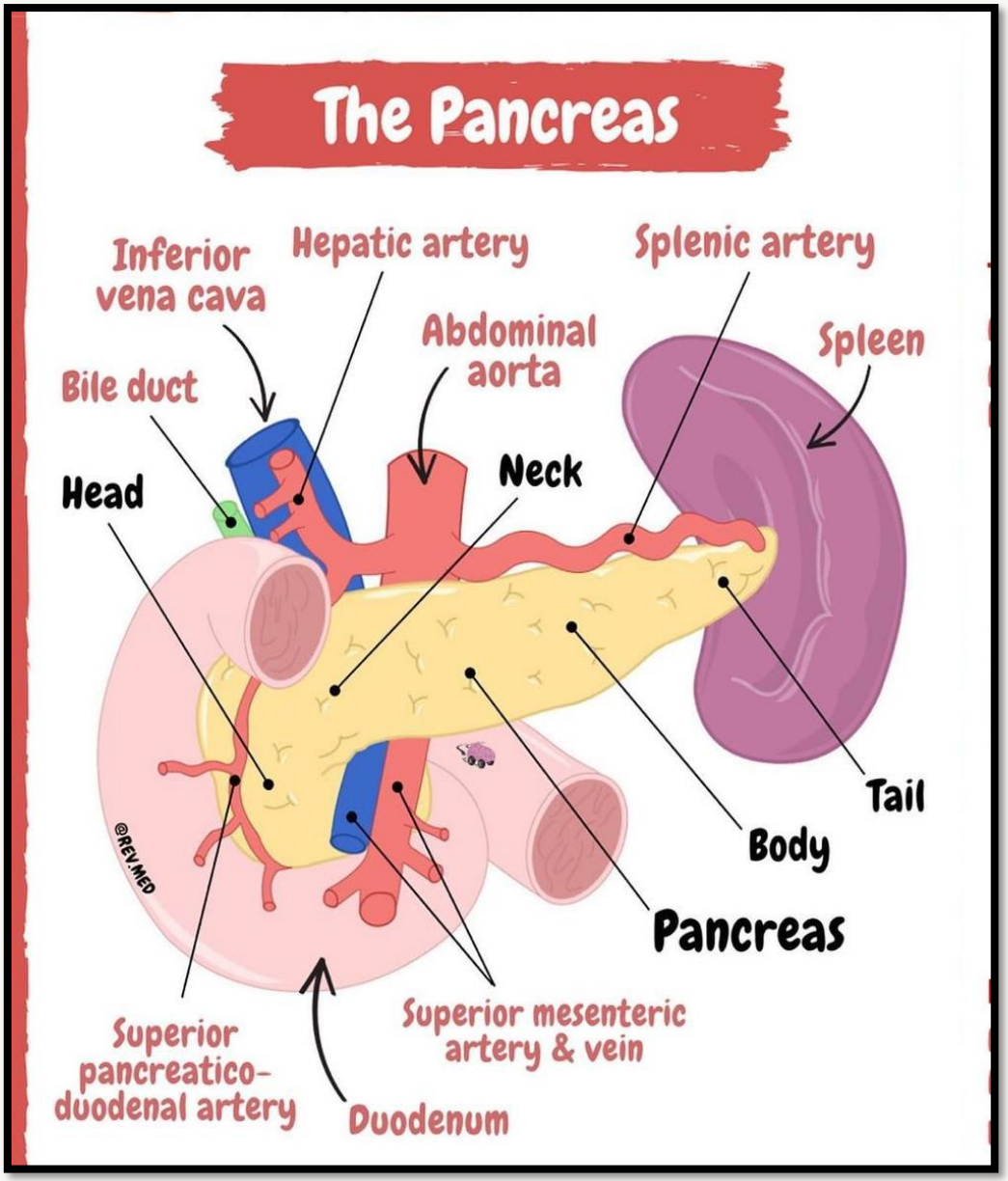
1- the 1st part of duodenum superiorly

2- 2nd part of duodenum on the right side (separated from it by superior & inferior pancreatico- duodenal arteries)

3- 3rd part of duodenum inferiorly.

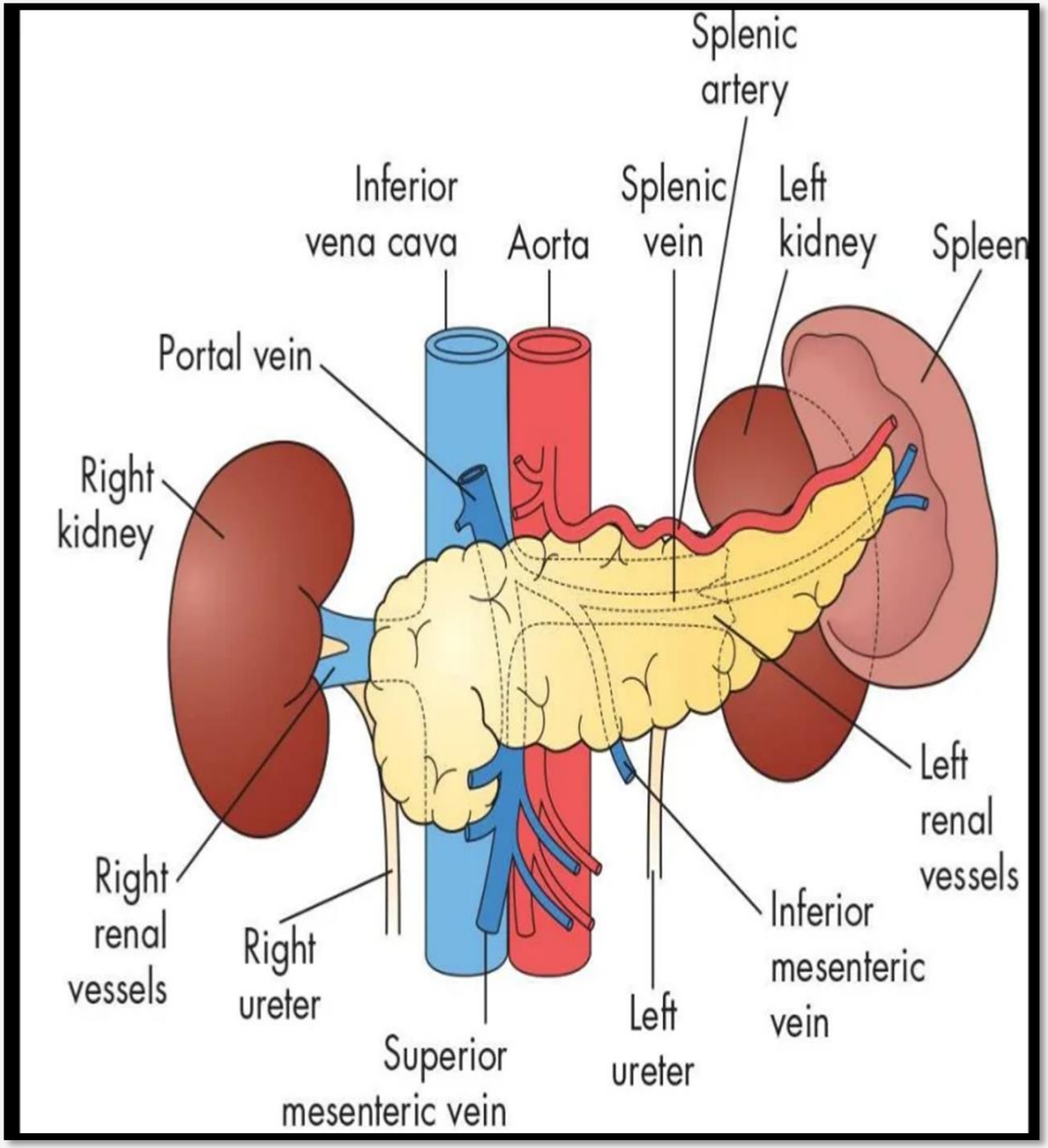
Anteriorly: it is related to transverse colon.

Posteriorly: it is related to IVC, renal veins and common bile duct.



2- Uncinate process

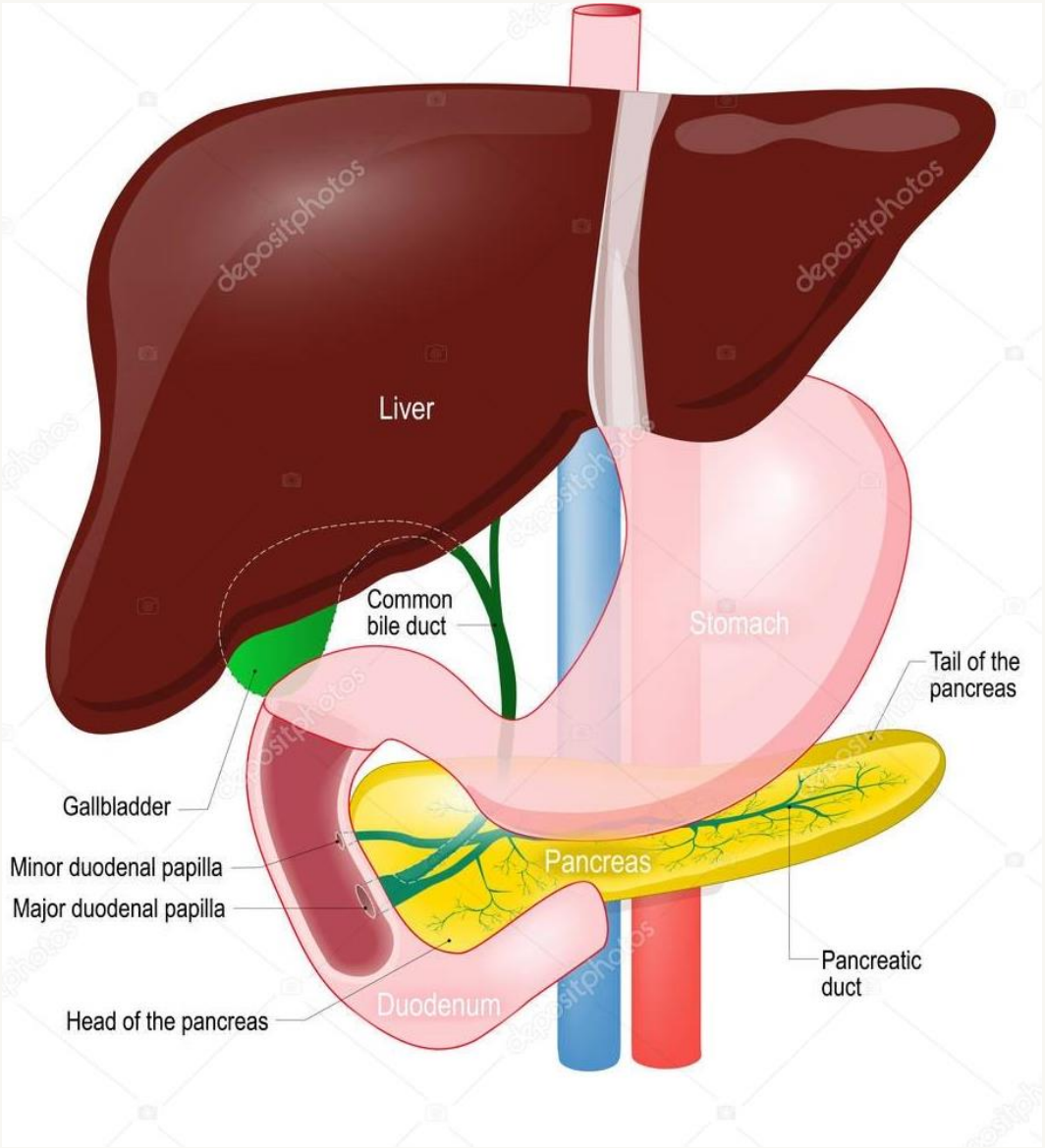
- lies between abdominal aorta **posteriorly** and superior mesenteric vessels **anteriorly.**



3-Neck of pancreas

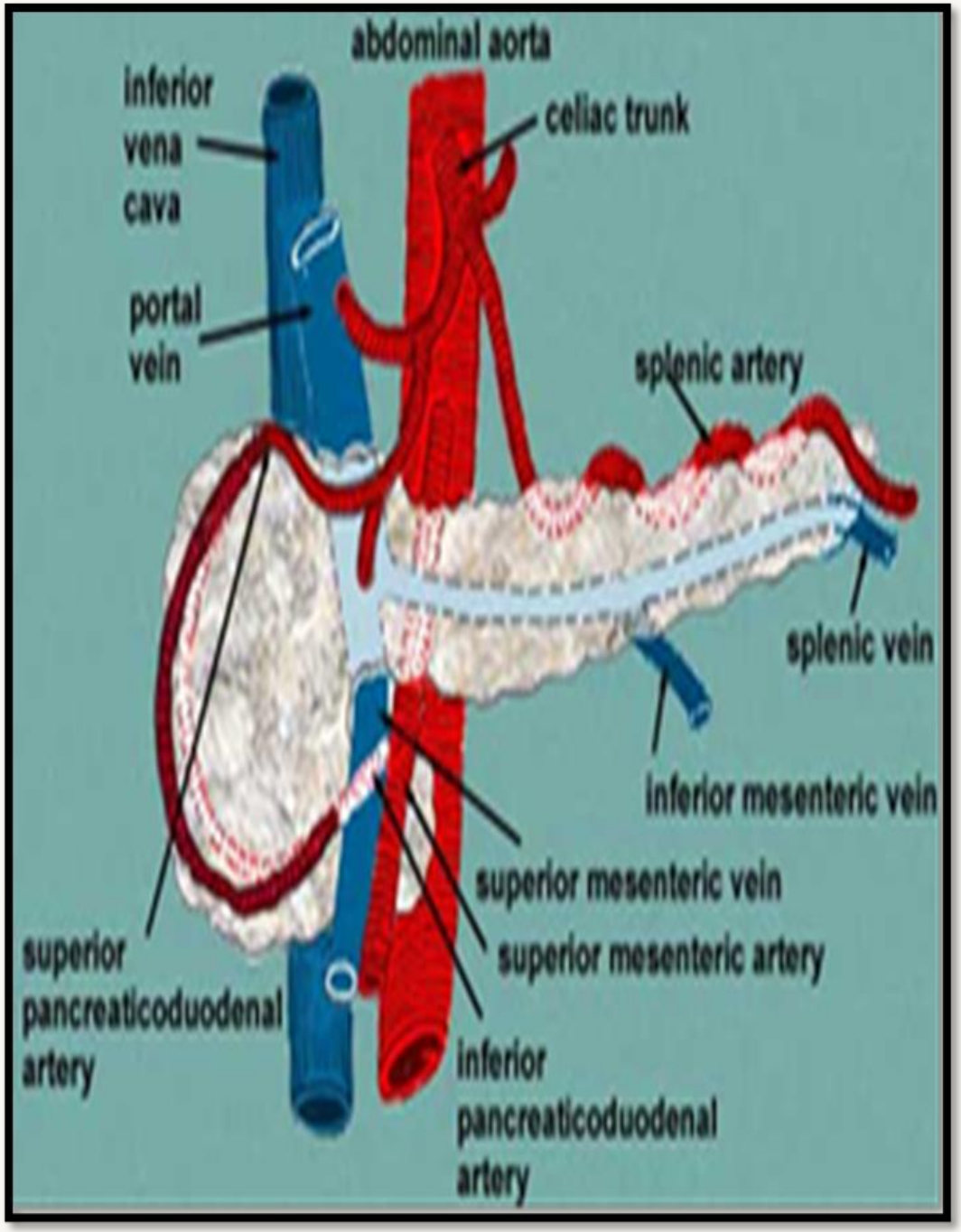
Anteriorly

it is related to gastro-duodenal junction.



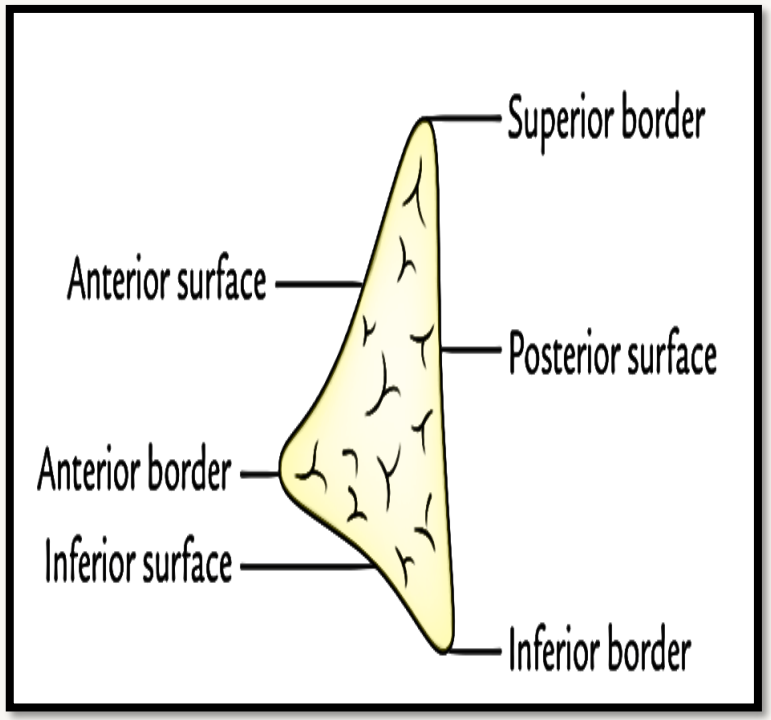
Posteriorly:

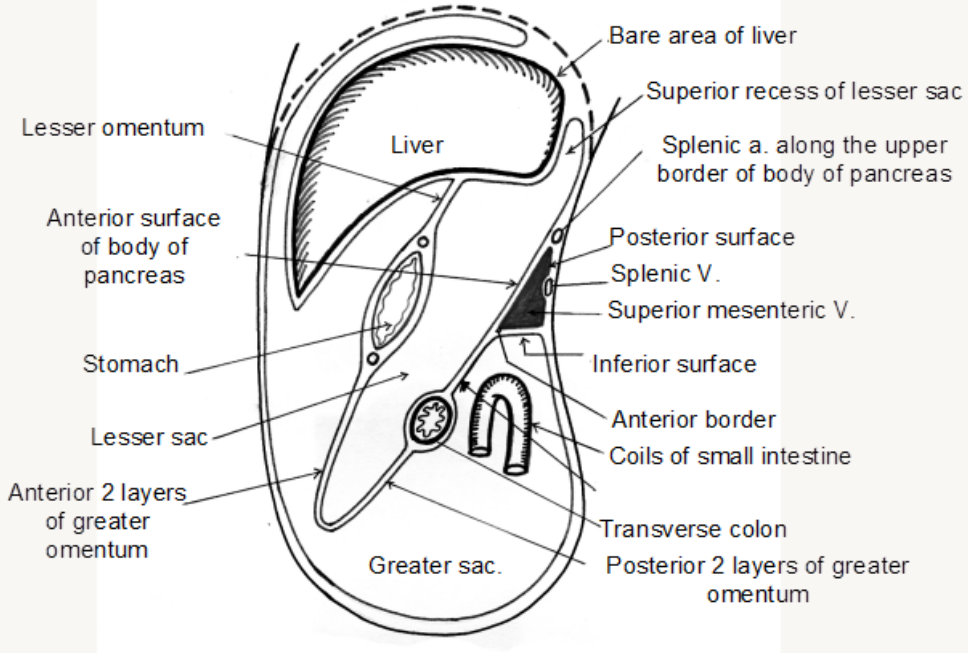
it is related to the formation of portal vein from splenic and superior mesenteric veins.



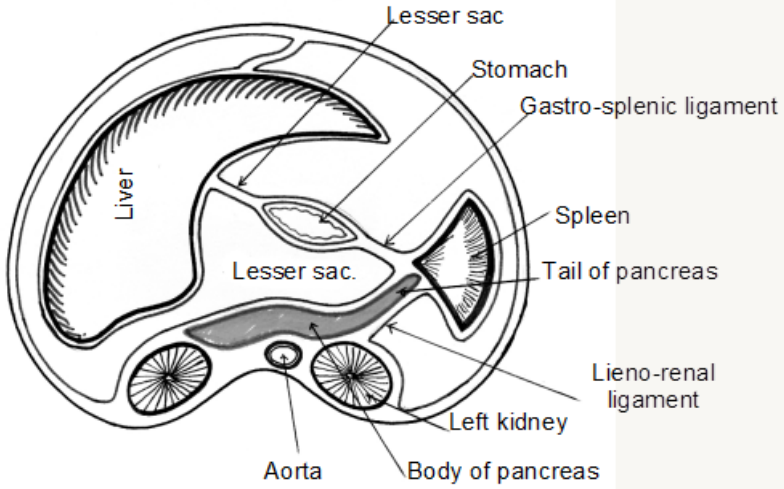
4-Body (triangular in cross section)

It has three surfaces (anterior, posterior and inferior) and three borders (anterior, superior and inferior).





*** Surfaces and borders of body of pancreas ***
(Sagital Section)

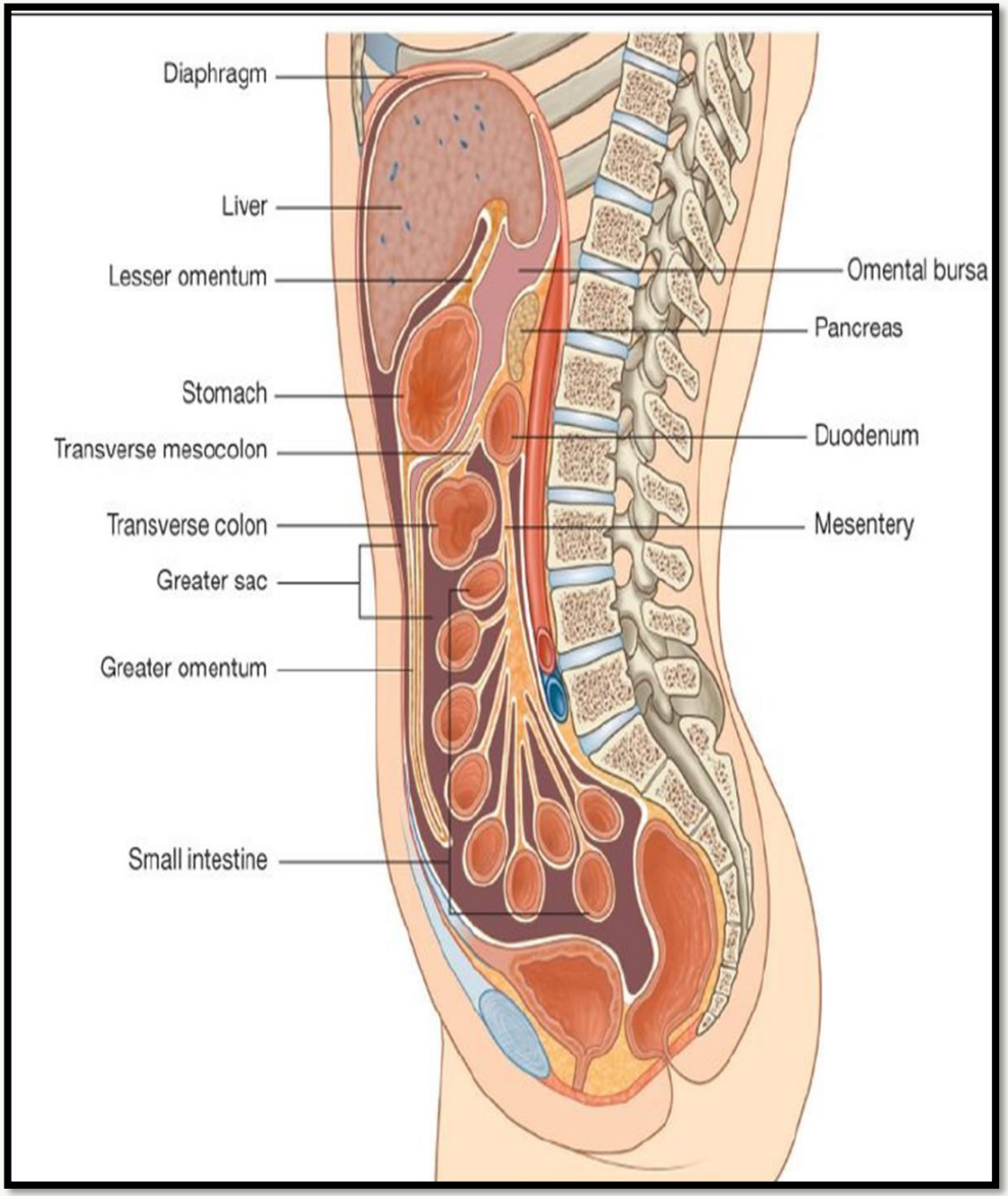


*** Transverse section at the level of the body of pancreas ***

Surfaces:

1- Anterior surface:

Related to stomach, separated from it by the lesser sac.



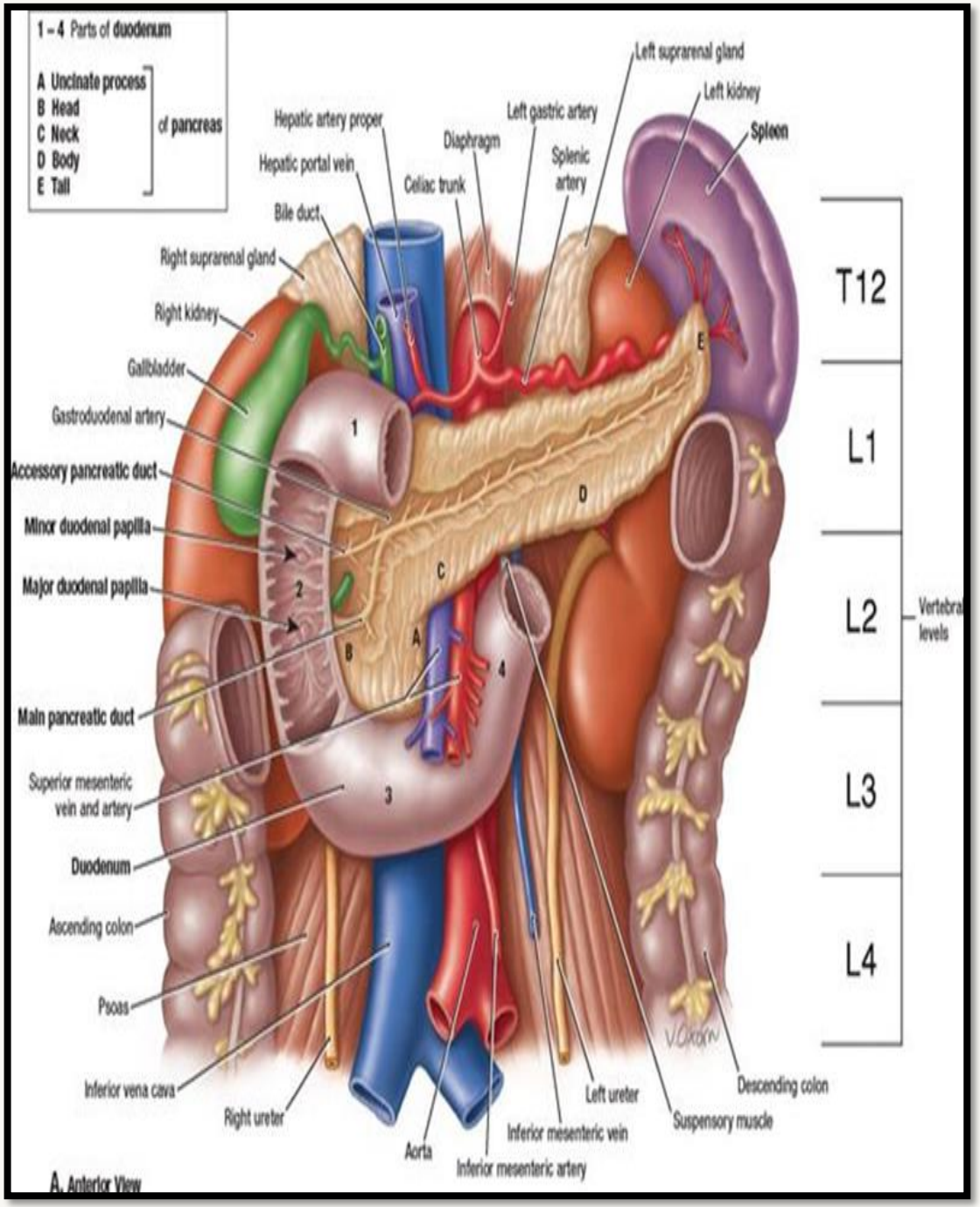
2- Inferior surface:

Related to

-duodeno-jejunal flexure

- **loops of small intestine**

-transverse colon (from right to left).



3- Posterior surface:

It is related to posterior abdominal wall

Aorta and origin of sup. mesenteric artery.

Splenic and left renal vein.

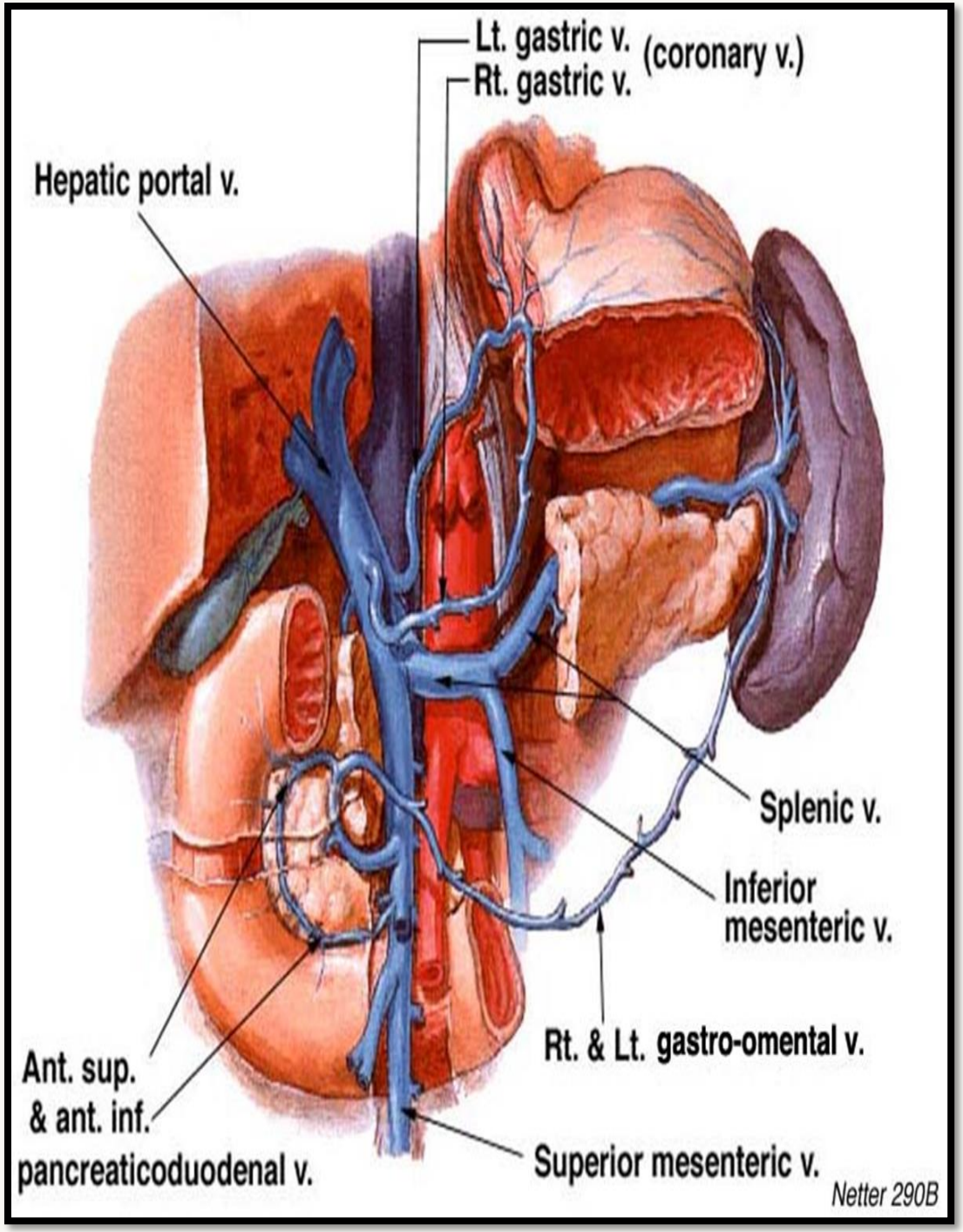
Left psoas major.

Left crus of diaphragm.

Left kidney.

Left supra renal gland.

Left sympathetic chain.



Borders:

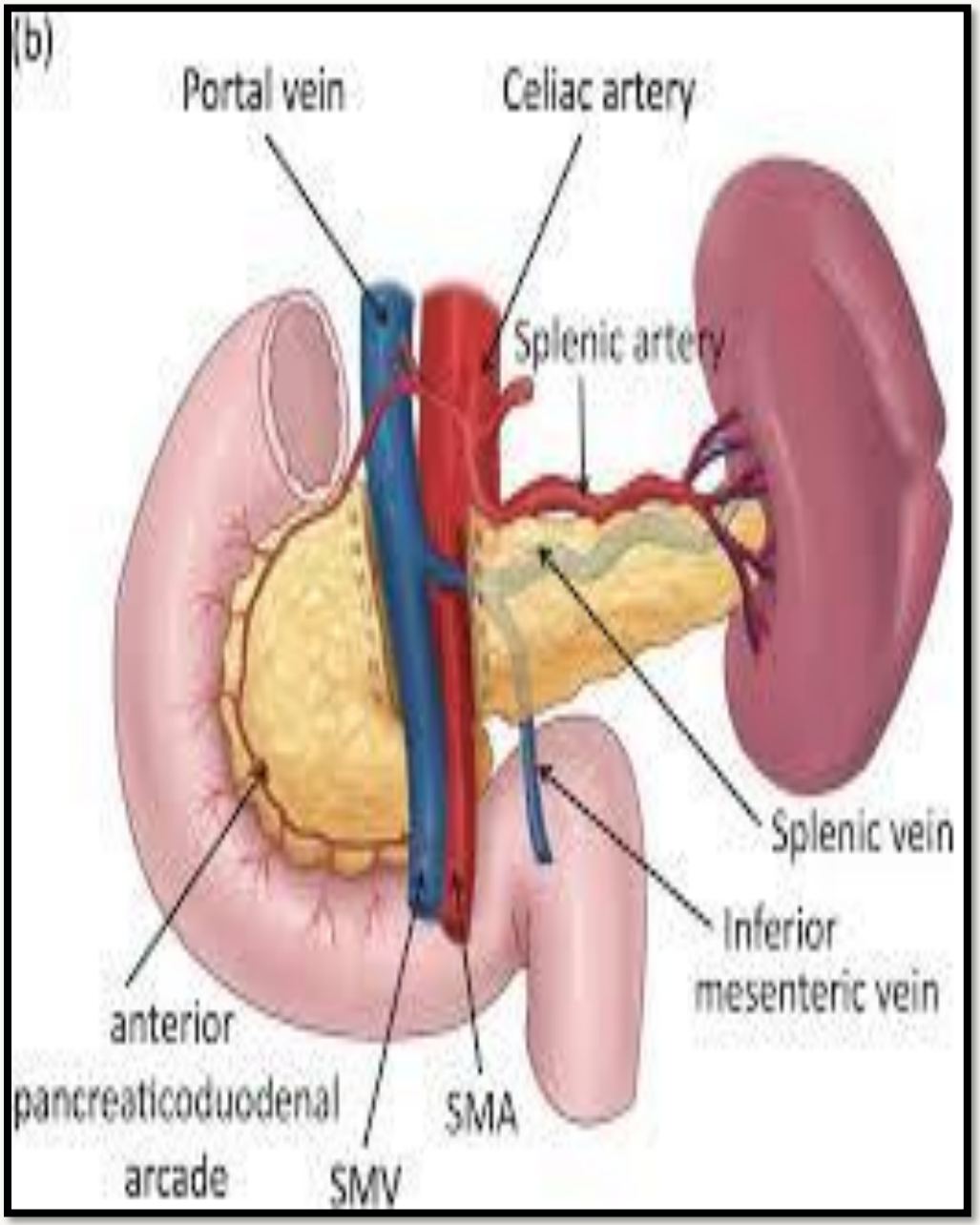
1- Superior border: It is related to splenic artery and pancreatico-splenic lymph nodes.

2- Anterior border: It gives attachment to transverse mesocolon and greater omentum.

3- Inferior border: It separates the inferior from the posterior surfaces It is related to Coils of jejunum.

4-Tail of the pancreas:

It runs in the **lieno-renal** ligament with **splenic vessels** in front of left kidney and ends in contact with the area just below the lateral end of the hilum of **spleen** .



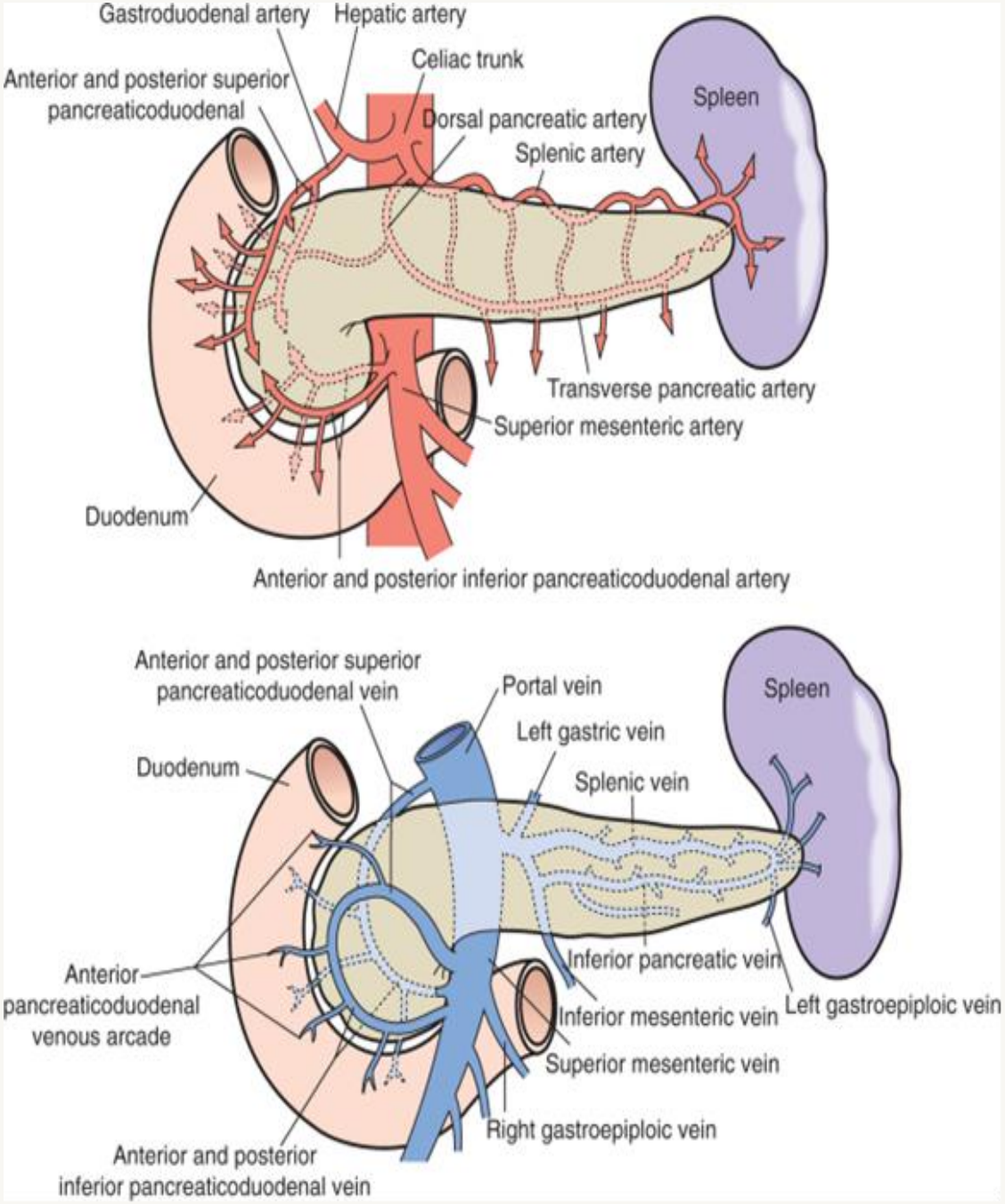
Blood supply

Arterial supply:

1- Superior, inferior pancreatico-duodenal arteries: to the head.

2- Pancreatic branches of splenic artery: to the rest of pancreas.

Venous drainage: neck , body & tail to pancreatic veins of splenic vein while the head to superior & inferior pancreatico-duodenal vein to portal & superior mesenteric veins respectively

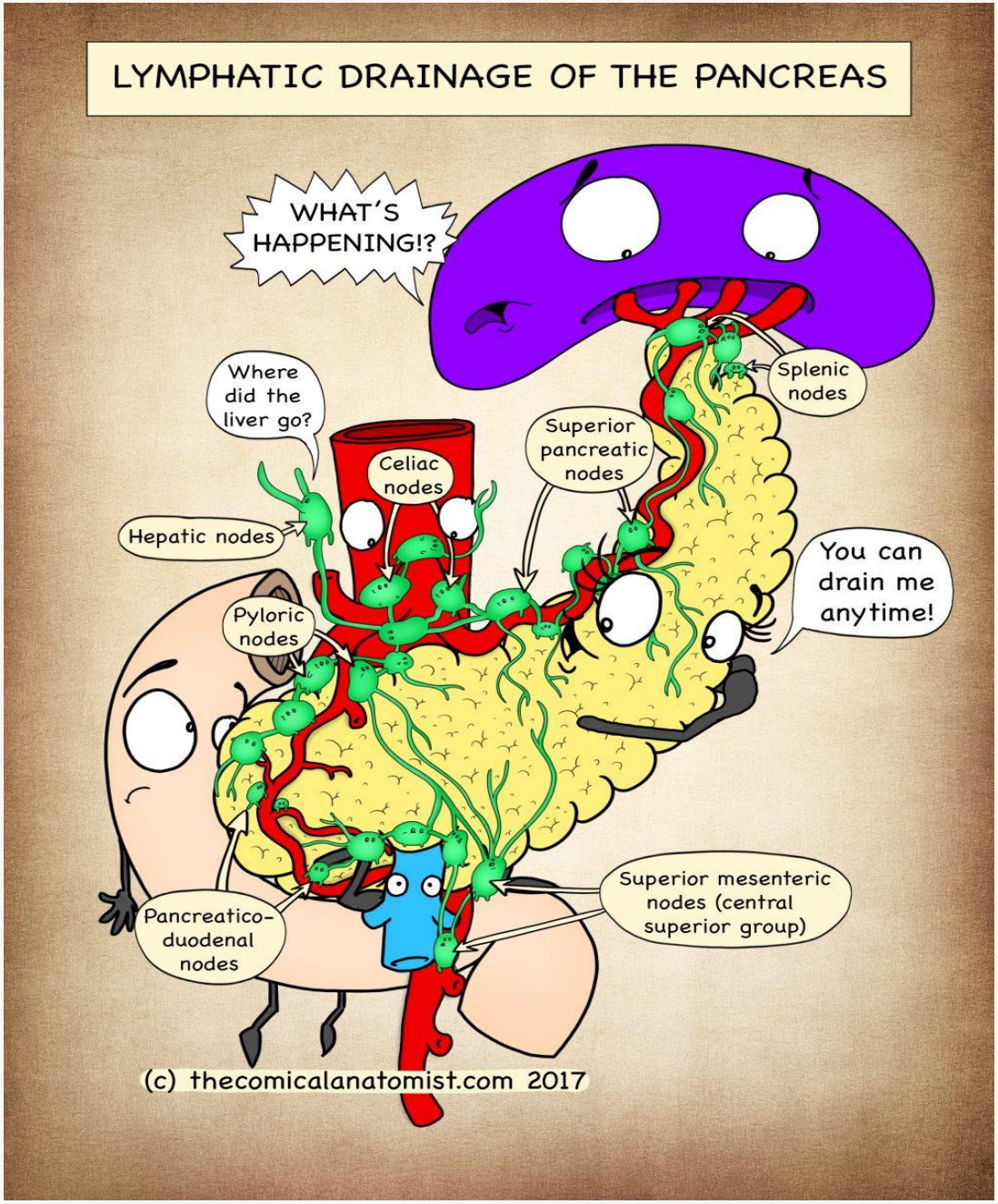


Lymphatic drainage:

1. To the left of the neck: Drains into the pancreatico-splenic lymph nodes.

2. The upper part of the head: Drains into the coeliac lymph nodes.

3. The lower part of the head: Drains into the superior mesenteric lymph nodes



Ducts of pancreas:

It has two ducts:

1- Main pancreatic duct duct of Wirsung) **:**

It drains the upper part of the head, all the body and tail of pancreas.

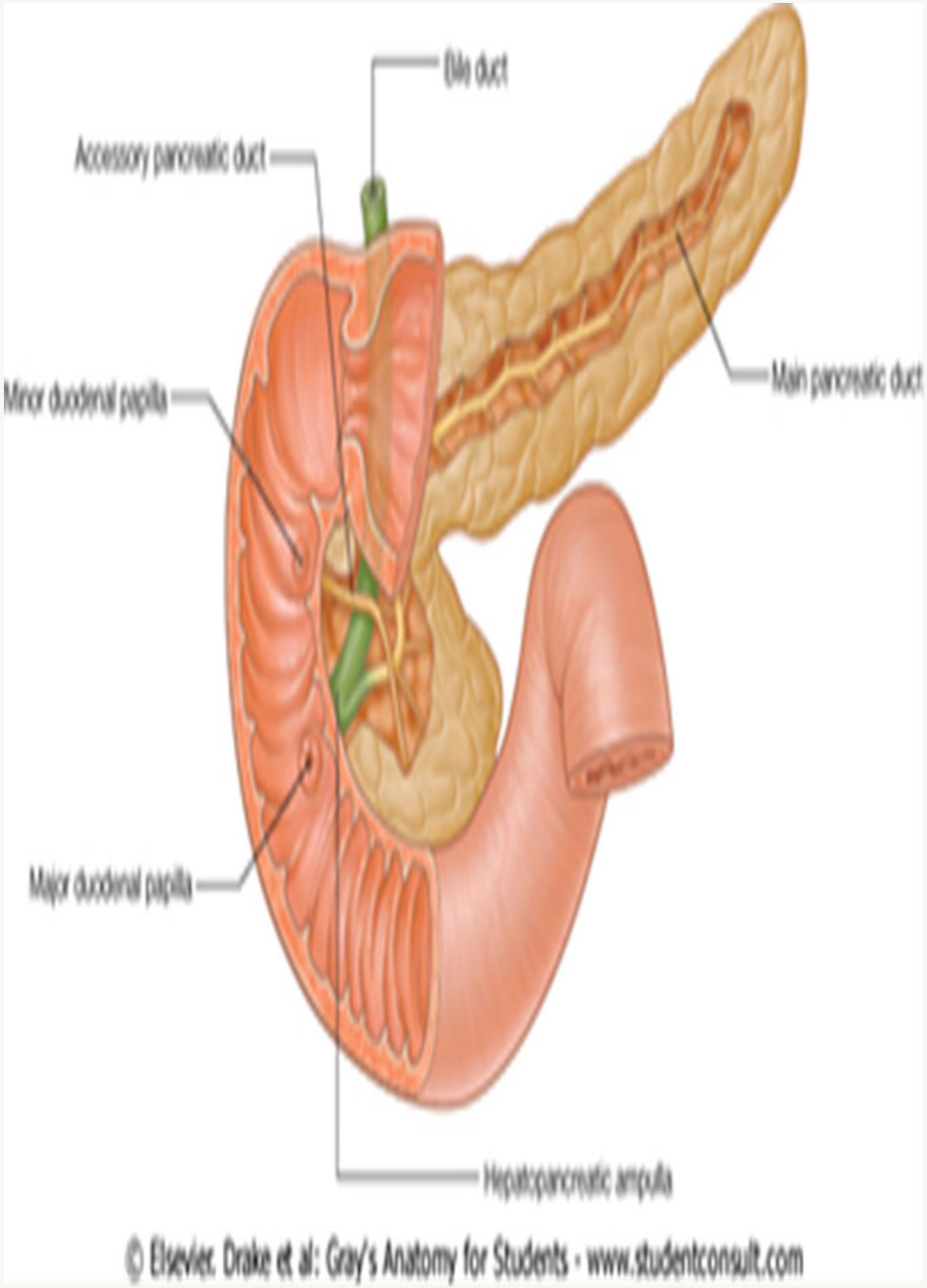
It runs from the tail to the head, then it unites with common bile duct to form ampulla of Vater which opens in the 2nd part of duodenum.

The ampulla of vater opens into the apex of a mucosal elevation in the second part of the duodenum called the major duodenal papilla.

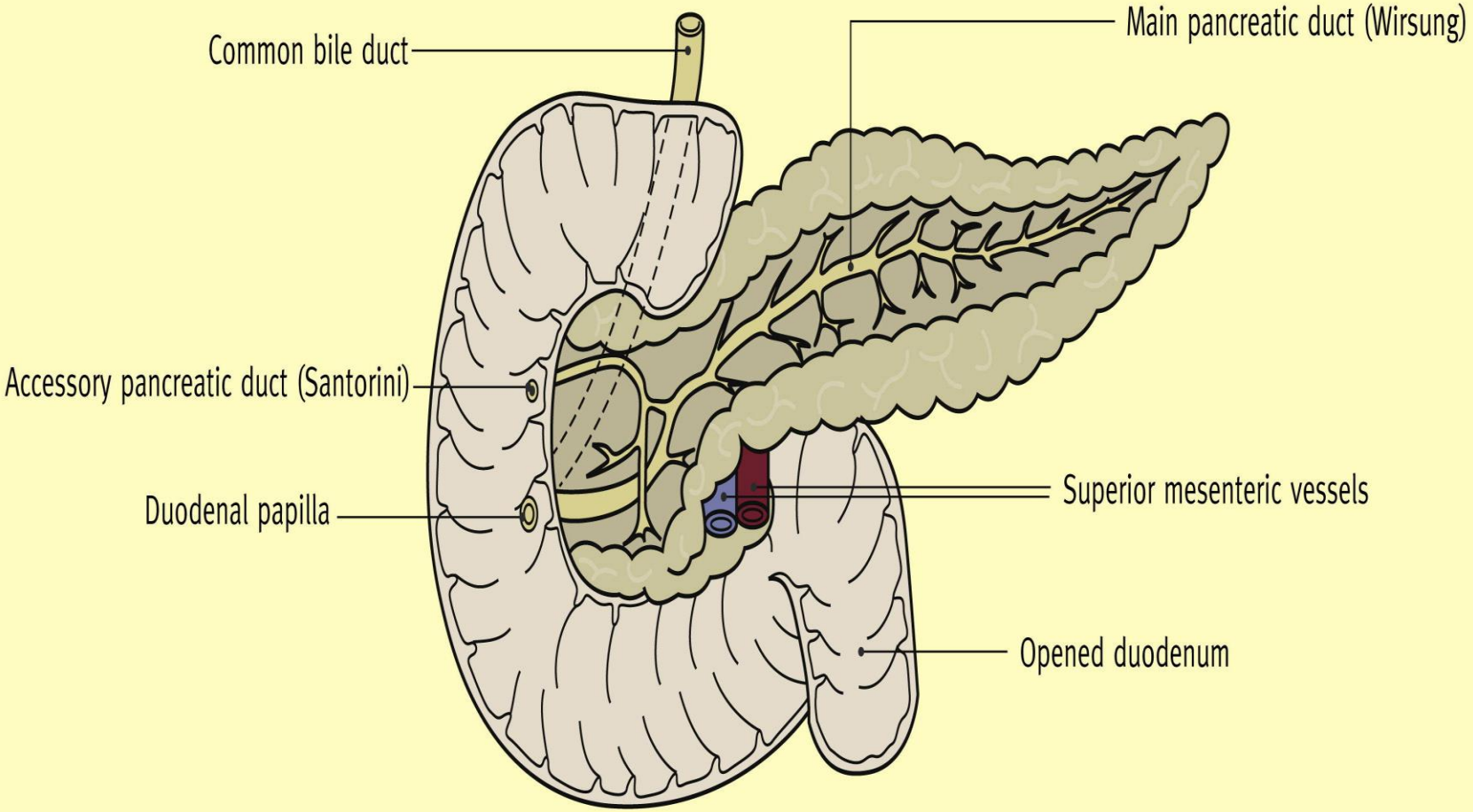
2- Accessory pancreatic duct:(duct of Santorini

It drains the uncinate process and lower part of head.

It open in the 2nd part of duodenum above the ampulla of Vater.



Pancreas opened to show the duct system



Applied Anatomy

(I) Cancer head of the pancreas may infiltrate the following structures:

1. **Common bile duct (CBD) leading to obstructive jaundice.**
2. **IVC leading to oedema in the lower limb.**
3. **Poral vein leading to portal hypertension.**
4. **Pyloric region leading to pyloric stenosis.**
5. **Duodenum leading to duodenal obstruction.**

(II)Blood spread of cancer pancreas along portal blood flow leading to metastases in the *liver* :

Cancer head → metastases is more in the right lobe of liver.

Cancer neck, body or tail → metastases is more common in the left lobe of liver .

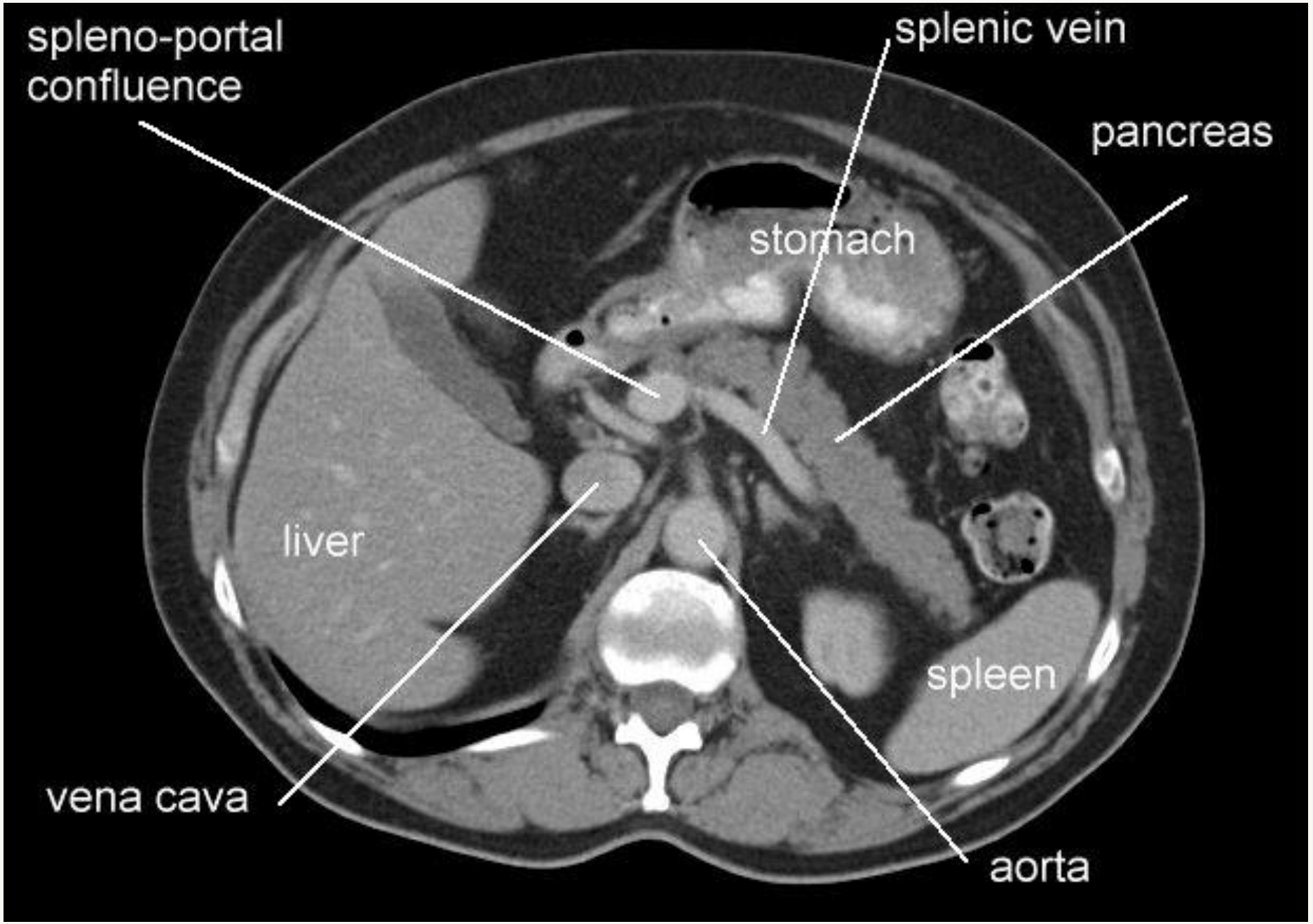
(III)Lymphatic spread of cancer pancreas → metastases in coeliac lymph nodes → retrograde lymphatic spread in the lymph vessels around the hepatic artery → metastases in the lymph nodes in the porta hepatis (may compress CBD)

IV) The head of pancreas and the duodenum are one surgical segment (same blood supply) and in cancer head of pancreas radical resection is pancreatico-duodenectomy .

(IV)Pancreatic pain, due to pancreatic disease (cancer or inflammation), is felt in the epigastric region and radiate to the back, increases by lying down and relieved on leaning forwards.

(V) As a complication of acute inflammation of the pancreas, pancreatic enzymes and inflammatory fluid accumulate between the pancreas and the stomach , in the cavity of the lesser sac, forming pancreatic pseudocyst which compress the stomach and forming a swelling felt in the epigastric region.

(VI) Posterior peptic ulcer in the stomach or duodenum may be complicated by erosion of the pancreas.


spleno-portal
confluence
splenic vein
pancreas
stomach
liver
spleen
vena cava
aorta


Thank you!