Portal Vein: collects blood from

- abdominal & pelvic part of alimentary tract
- gall bladder
- pancreas
- spleen

→ transport collected blood to liver

→ it provides ≈ 80% of the blood that flows through the liver

→ its tributaries & branches contain upto 1/3 of total body blood volume

→ devoid of valves

Formation: formed behind neck of pancreas by union of superior mesenteric & splenic vein at level of L2

↓

Course:

ascends posterior to 1st part of duodenum

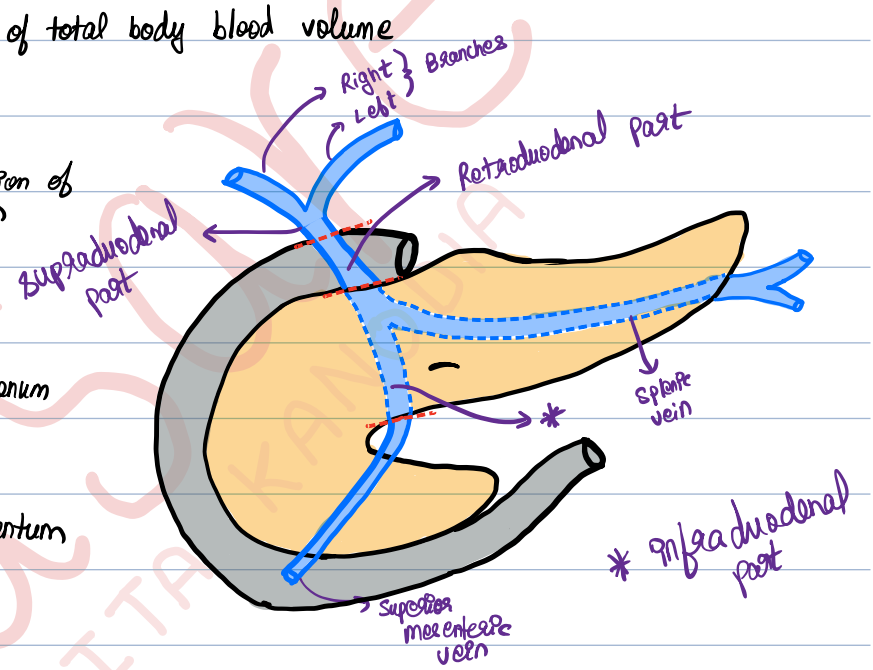
↓

enters right free edge of lesser omentum

↓

Termination:

ends at right end of porta hepatis by dividing into a right & left branch



Branches:

Right Branch → shorter & wider & enters right lobe of liver after receiving cystic vein

Left Branch → longer & narrower

↳ gives branches to caudate & quadrate lobes

→ unites with ligamentum teres & ligamentum venosum & paraumbilical veins

→ enters left lobe of liver.

Parts & Relations:

- infraduodenal part (1st part)
- retroduodenal part
- supraduodenal part

Infraduodenal part :

Anterior : Neck of pancreas

Posterior : IVC

Retroduodenal part :

Anterior : 1st part of duodenum
- bile duct
- gastroduodenal artery

Posterior : IVC

Supraduodenal part :

Anterior: hepatic artery (on the left)
bile duct (on the right)

Posterior: IVC

Tributaries:

(i) Splenic vein

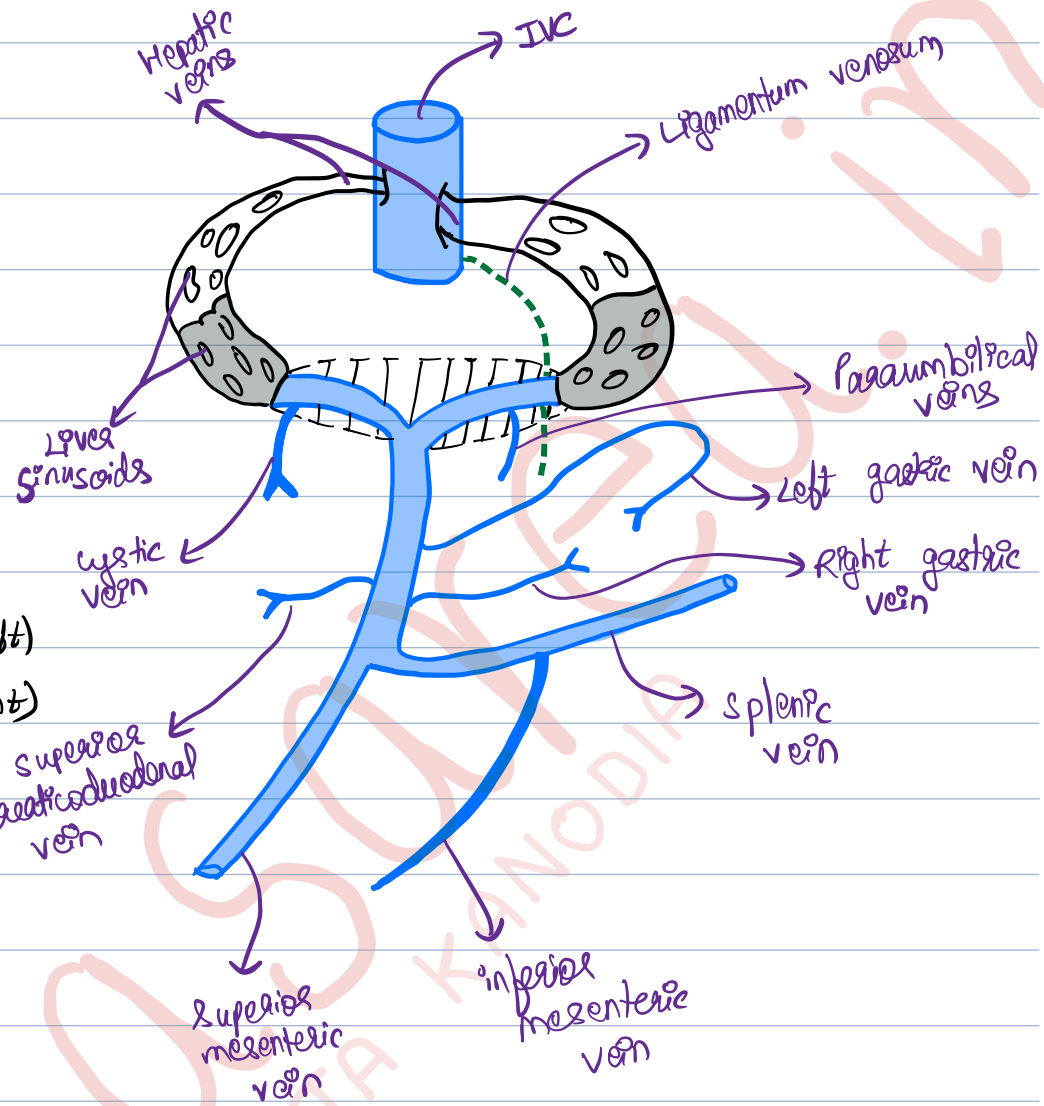
(ii) Superior mesenteric vein

(iii) Superior pancreaticoduodenal vein

(iv) left & right gastric veins

(v) cystic vein – joins the right branch

(vi) Paraumbilical veins – join the left branch.



Portocaval Anastomosis:

→ anastomosis between portal & systemic venous systems

→ important routes of collateral circulation in case of portal obstruction

Important sites:

Umbilicus: → left branch of portal vein

→ superficial veins of AAW around umbilicus through paraumbilical veins (of Sappey)

→ in portal obstruction ⇒ superficial veins around the umbilicus become distended & tortuous. ⇒ Caput medusae

Lower end of oesophagus: → Left gastric vein (oesophageal branches)

→ oesophageal tributaries of accessory hemiazygous veins

→ in portal obstruction as in liver cirrhosis ⇒ Oesophageal varices

which may rupture causing haematemesis (vomiting of blood)

Anal Canal: → superior rectal vein

→ middle & inferior rectal veins

→ Haemorrhoids / piles ⇒ responsible for repeated bleeding per annum.

Bare area of liver: hepatic venules (portal)

→ phrenic & intercostal veins

Extraperitoneal surfaces of retroperitoneal organs such as duodenum, ascending & descending colon.

Applied Aspect: Portal hypertension

→ obstruction of portal vein or its branches

→ portal hypertension ⇒ pressure > 40mm Hg (normal = 5-15 mm Hg)

→ enlargement of collateral channels

→ most common cause is alcoholic cirrhosis of liver

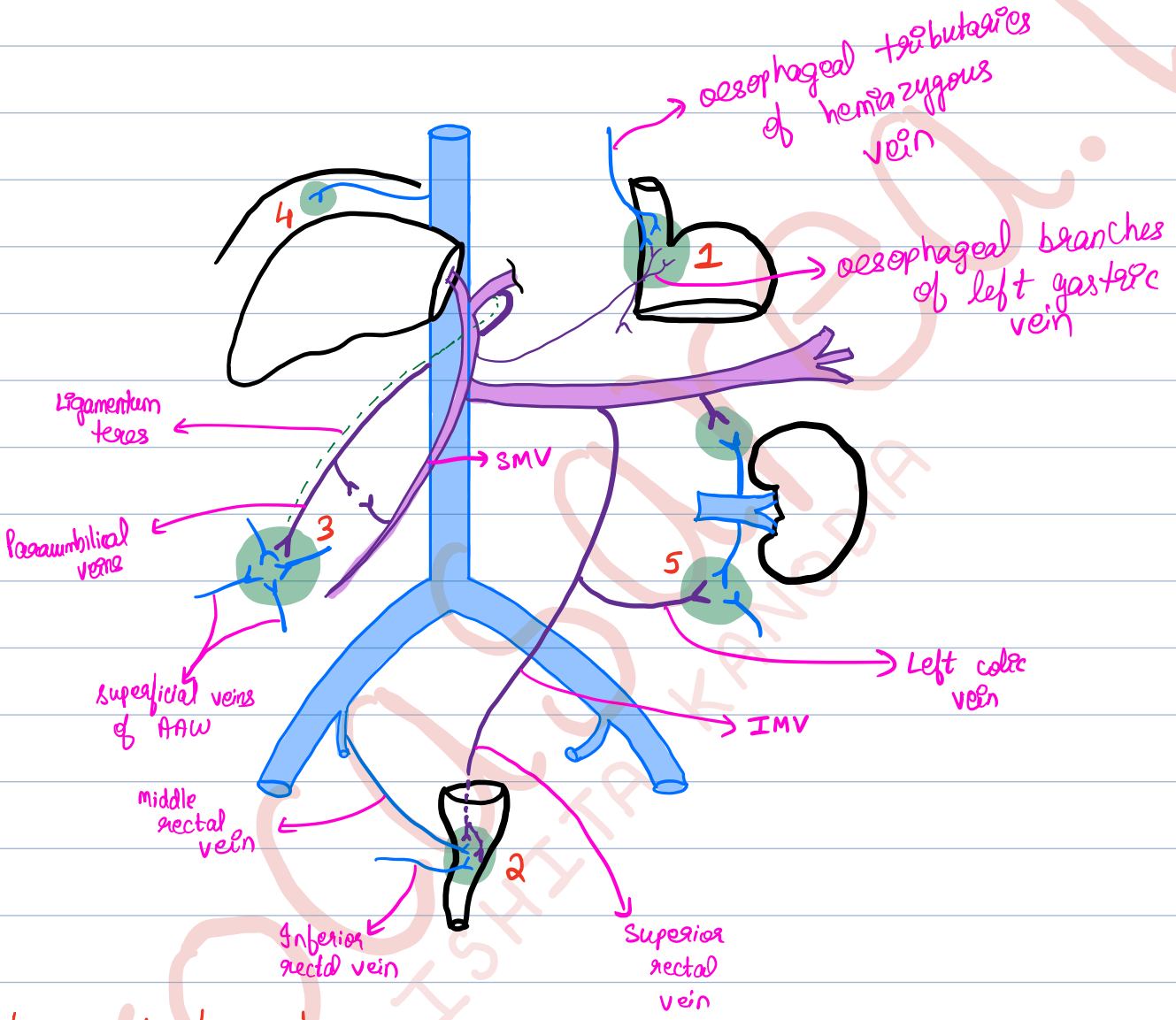
→ Effects of portal hypertension – splenomegaly

– ascites (accumulation of fluid in peritoneal cavity)

– oesophageal varices

– haemorrhoids

– Caput medusae



1 = lower end of oesophagus

2 = anal canal

3 = in the region of umbilicus

4 = bare area of liver

5 = between colic veins & renal veins