

GI - VASCULATURE

LEARNING OBJECTIVES

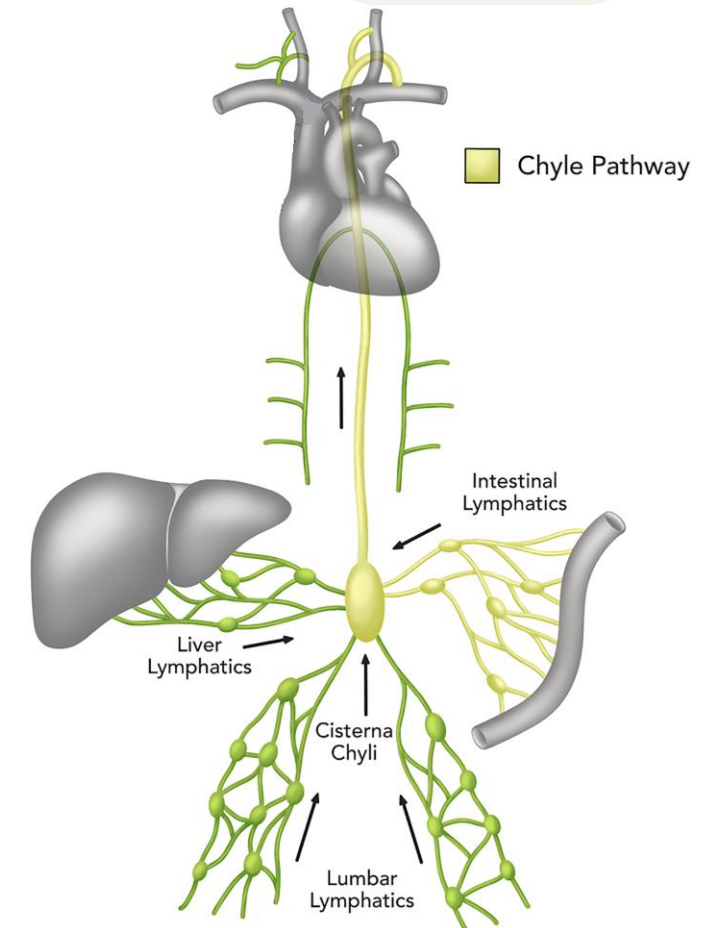
- Identify and describe the arterial system of the GI tract
- Identify and describe the portal system and how it relates to the liver and the intestines
- Identify the important lymphatic drainage of the abdomen
- Identify anatomy of the major vessels of the GI tract using CTA and angiography. Include the coeliac axis and its branches, the SMA, IMA, SMV, portal vein and splenic vein.

LYMPHATICS

Lymph nodes – connected by a network of lymph vessels

- Coeliac nodes – follow coeliac trunk and inferior mesenteric nodes – follow inferior mesenteric artery
- Lymph nodes drain into **CISTERNA CHYLI** – major lymph duct in abdomen
- CISTERNA CHYLI becomes **THORACIC DUCT** once it passes up through diaphragm

- **Celiac lymph nodes**
 - situated around the celiac trunk
- **Superior mesenteric lymph node** situated around superior mesenteric a.
- **Inferior mesenteric lymph node** situated around inferior mesenteric a.



EMBRYOLOGY

Coeliac trunk: T12

- Supplies FOREGUT
- Lower oesophagus, stomach, first ½ duodenum, liver, gallbladder, pancreas

Superior mesenteric artery: L1

- Supplies MIDGUT
- Last ½ duodenum, jejunum, ileum, caecum, ascending colon, ¾ transverse colon

Inferior mesenteric artery: L3

- Supplies HINDGUT
- Last ¼ transverse colon, descending and sigmoid colon, rectum

Come Study Islam – T12 to L1,3

REMEMBER THE VERTEBRAL LEVELS TOO!!!



COELIAC TRUNK

LEFT GASTRIC ARTERY:

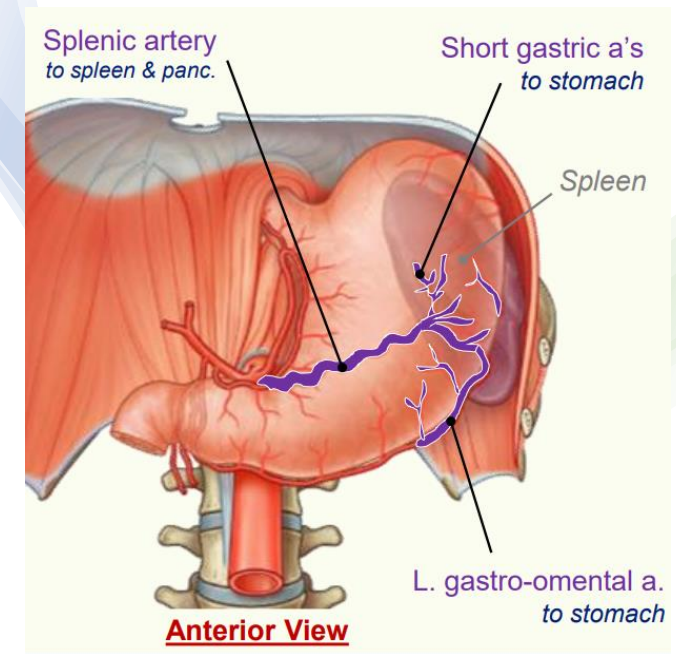
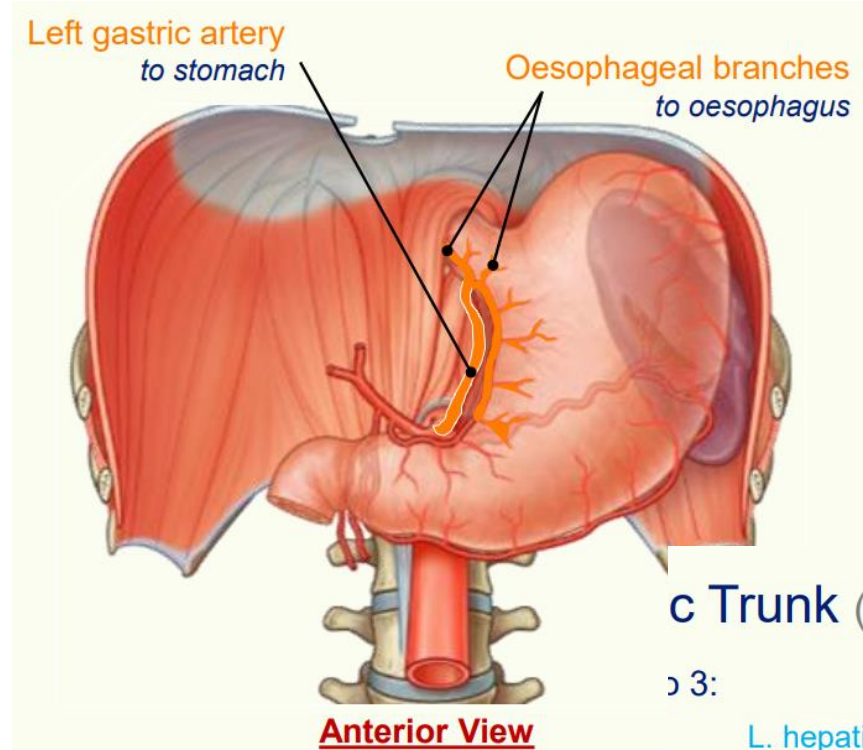
- Lower oesophagus
- Lesser curvature

SPLenic ARTERY:

- Spleen
- Pancreas
- Stomach

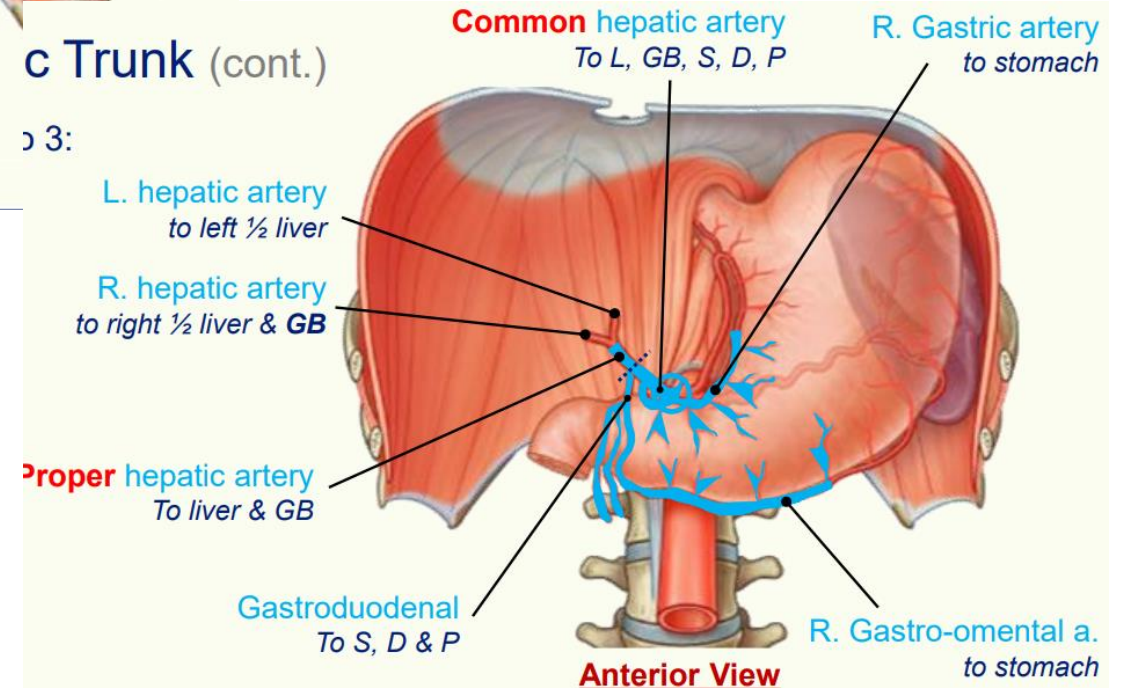
COMMON HEPATIC ARTERY:

- Liver
- Gallbladder
- Right ½ stomach
- Upper ½ duodenum
- Part of pancreas



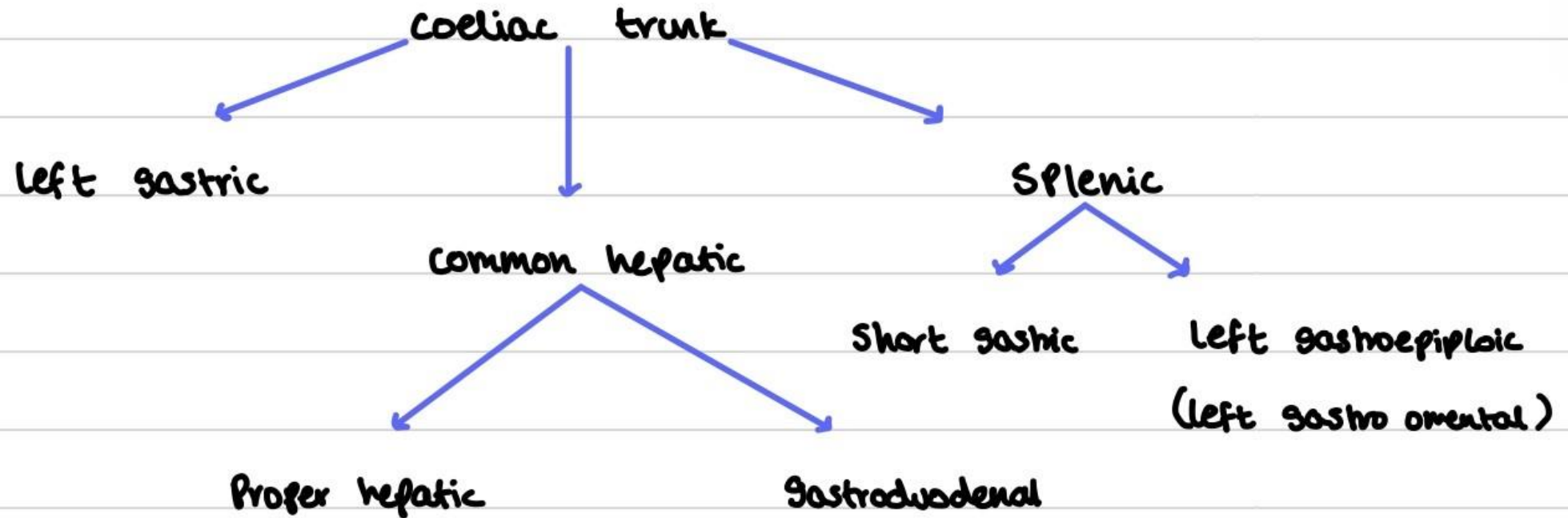
c Trunk (cont.)

3:



foregut:

• T12 - coeliac trunk

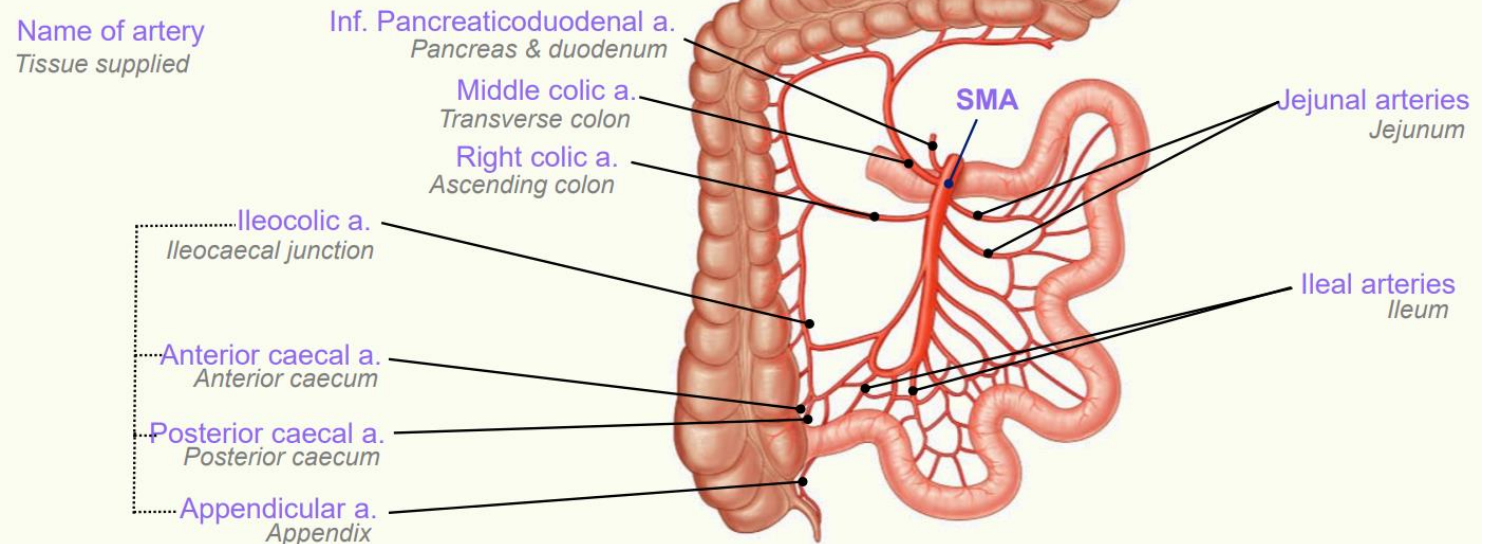


SUPERIOR MESENTERIC ARTERY

1. Inferior pancreaticoduodenal artery → pancreas + duodenum
2. Jejunal artery → jejunum
3. Ileal artery → ileum
4. Ileocecal artery → ileocecal junction
5. Anterior caecal artery → anterior caecum
6. Posterior caecal artery → posterior caecum
7. Right colic artery → ascending colon
8. Middle colic artery → transverse colon

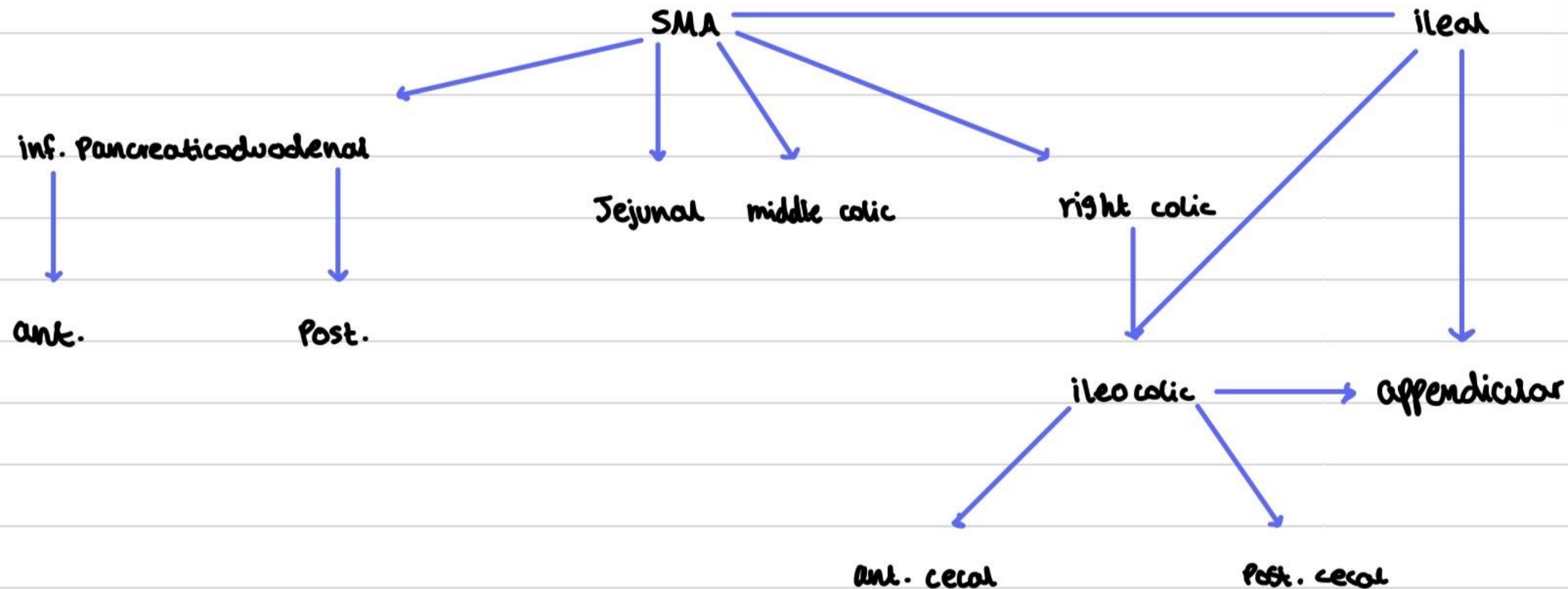
1. Appendicular artery → appendix

Branches of the SMA

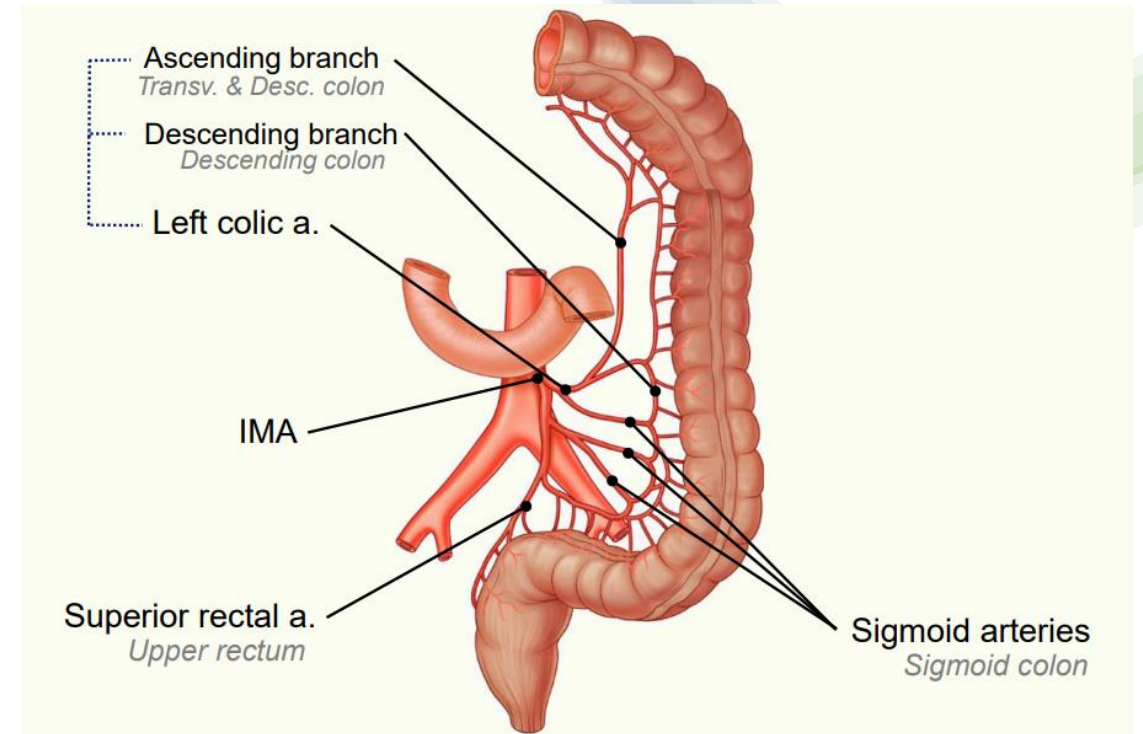
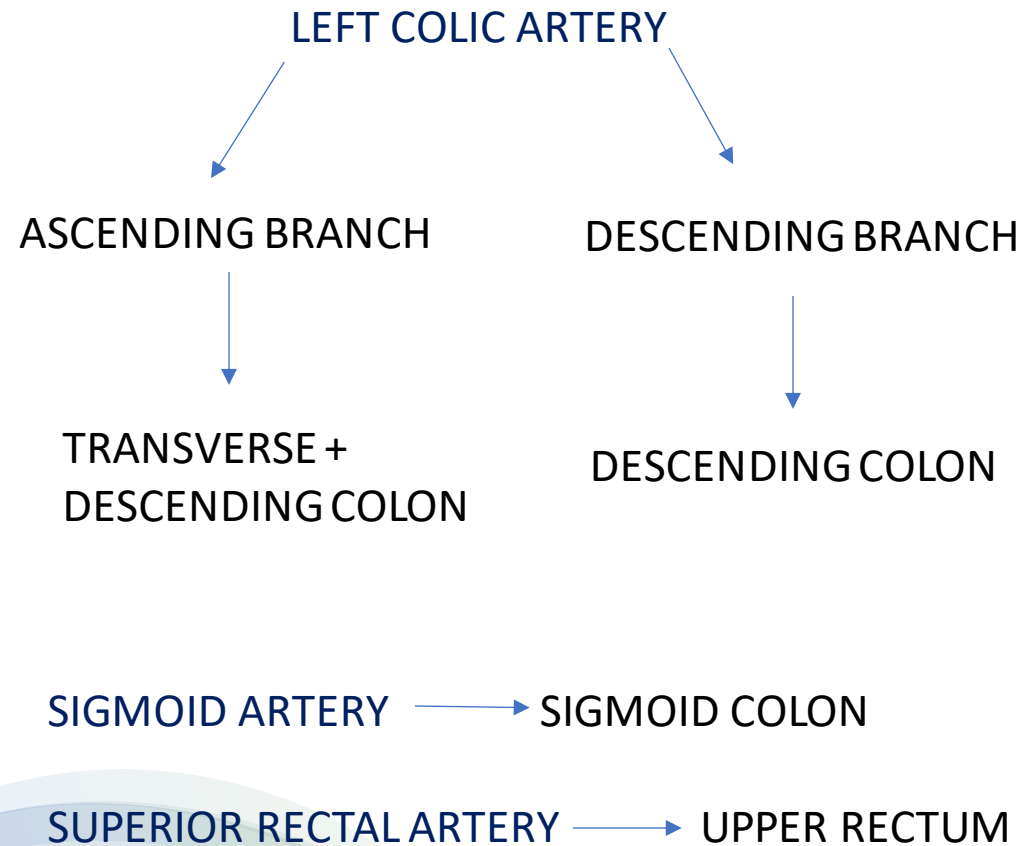


midgut:

• L1 - SMA

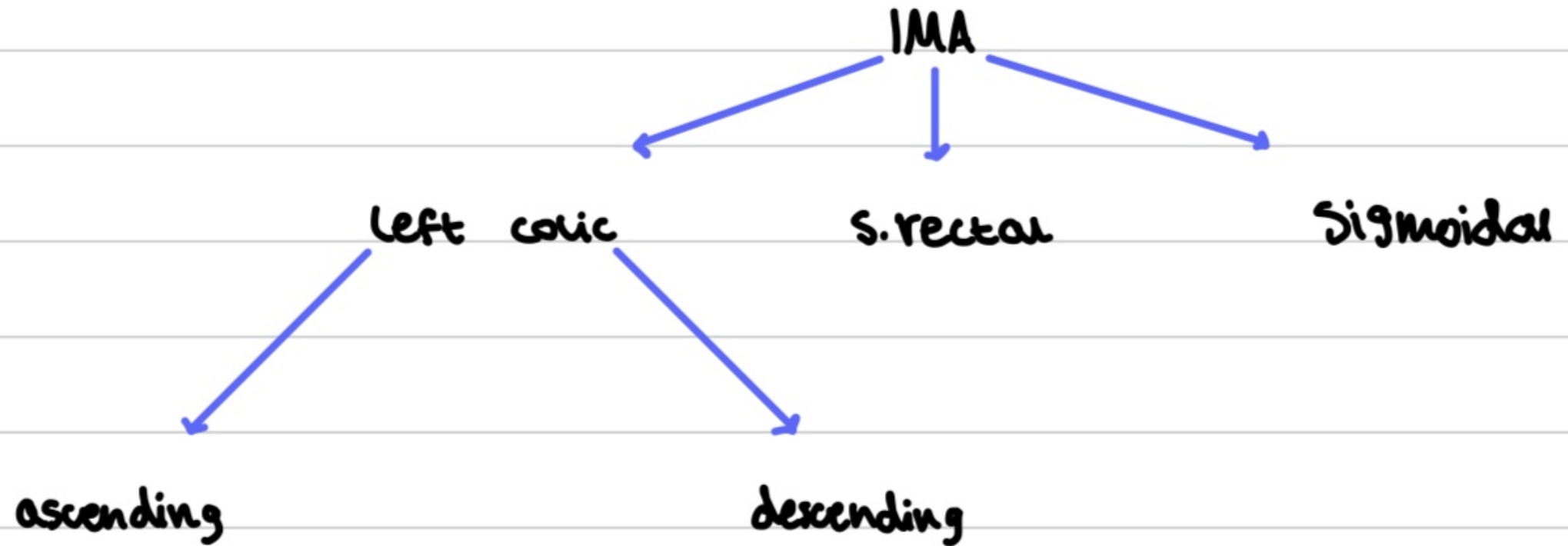


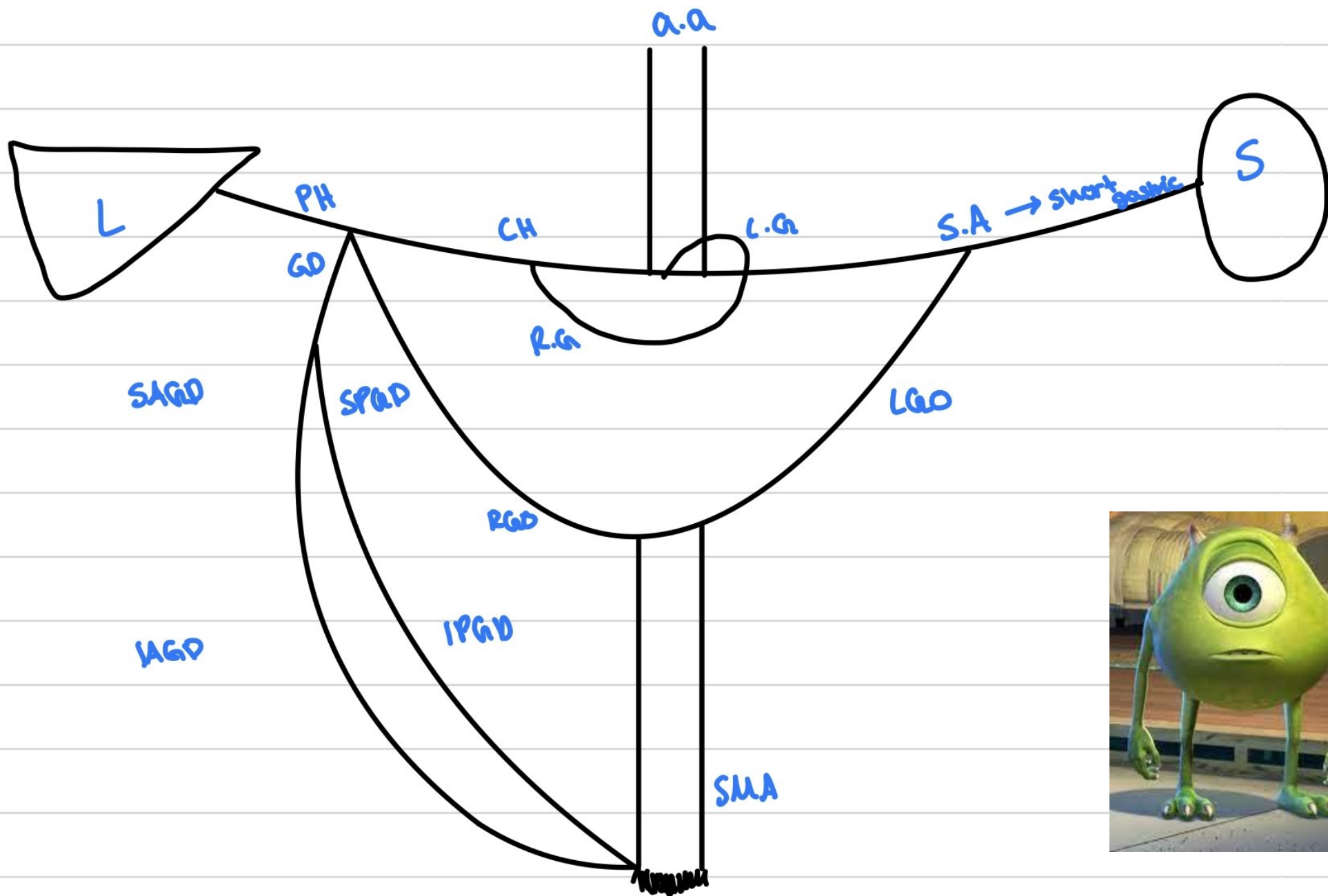
INFERIOR MESENTERIC ARTERY



hindgut:

* L3 - IMA





VEINS

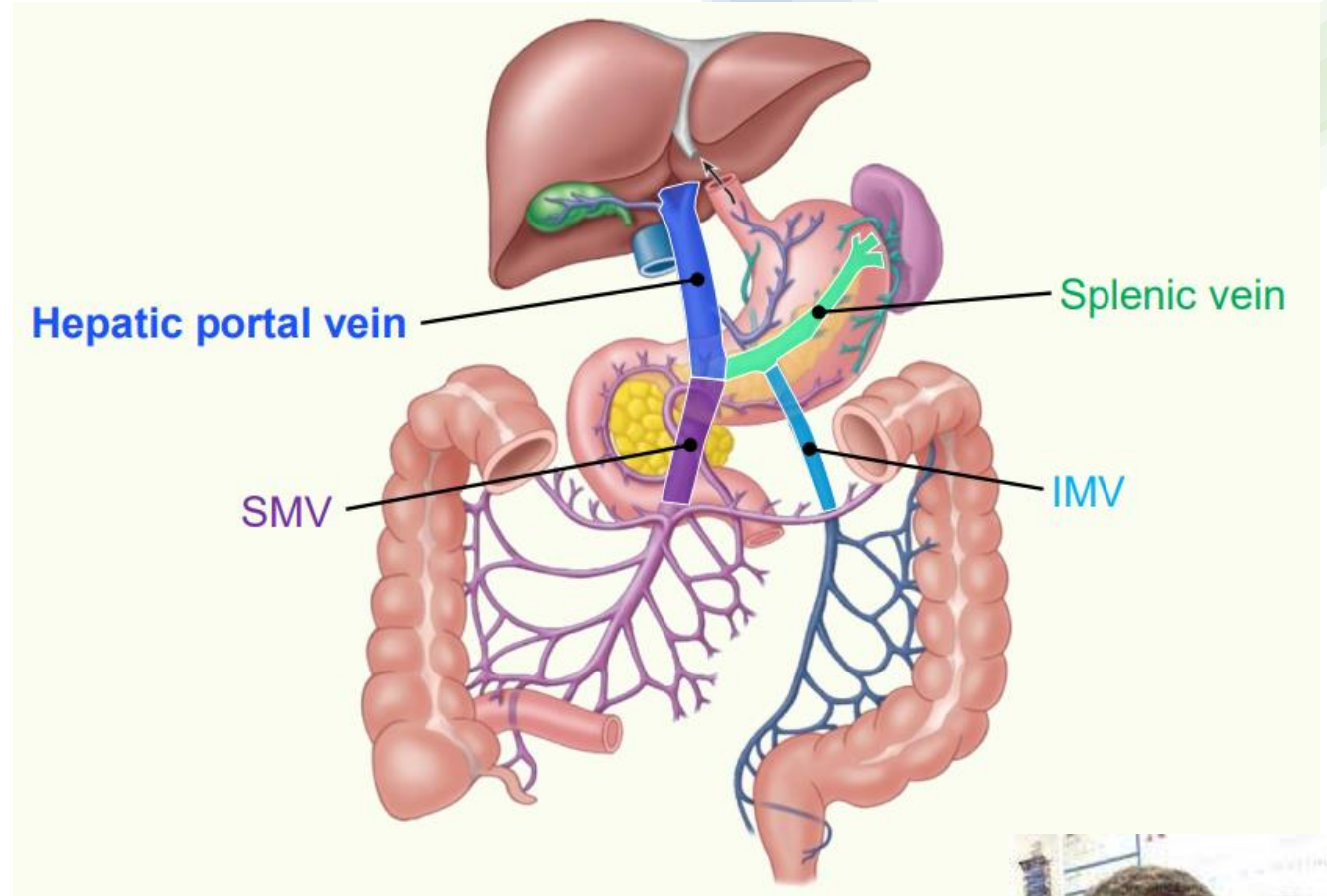
3 key veins:

1. Splenic vein
2. Superior mesenteric vein
3. Inferior mesenteric vein

IMV – drains into splenic vein

Hepatic portal vein – formed by splenic vein + SMV

- Drains into IVC

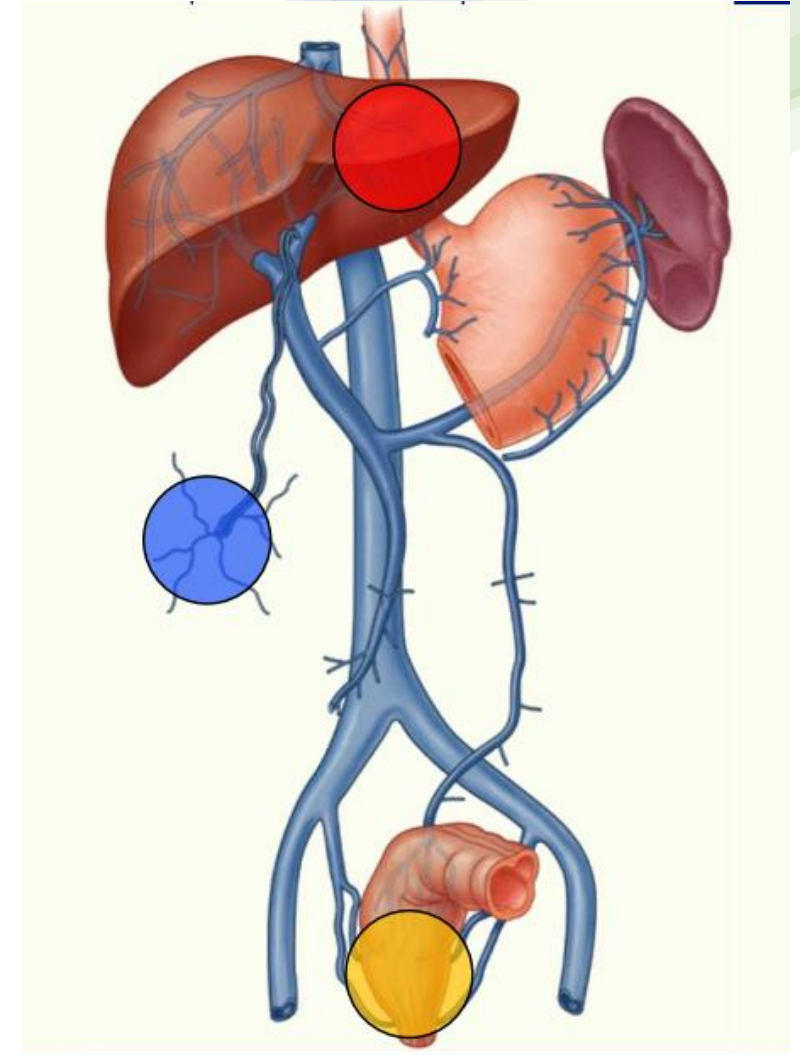


ANASTAMOSES

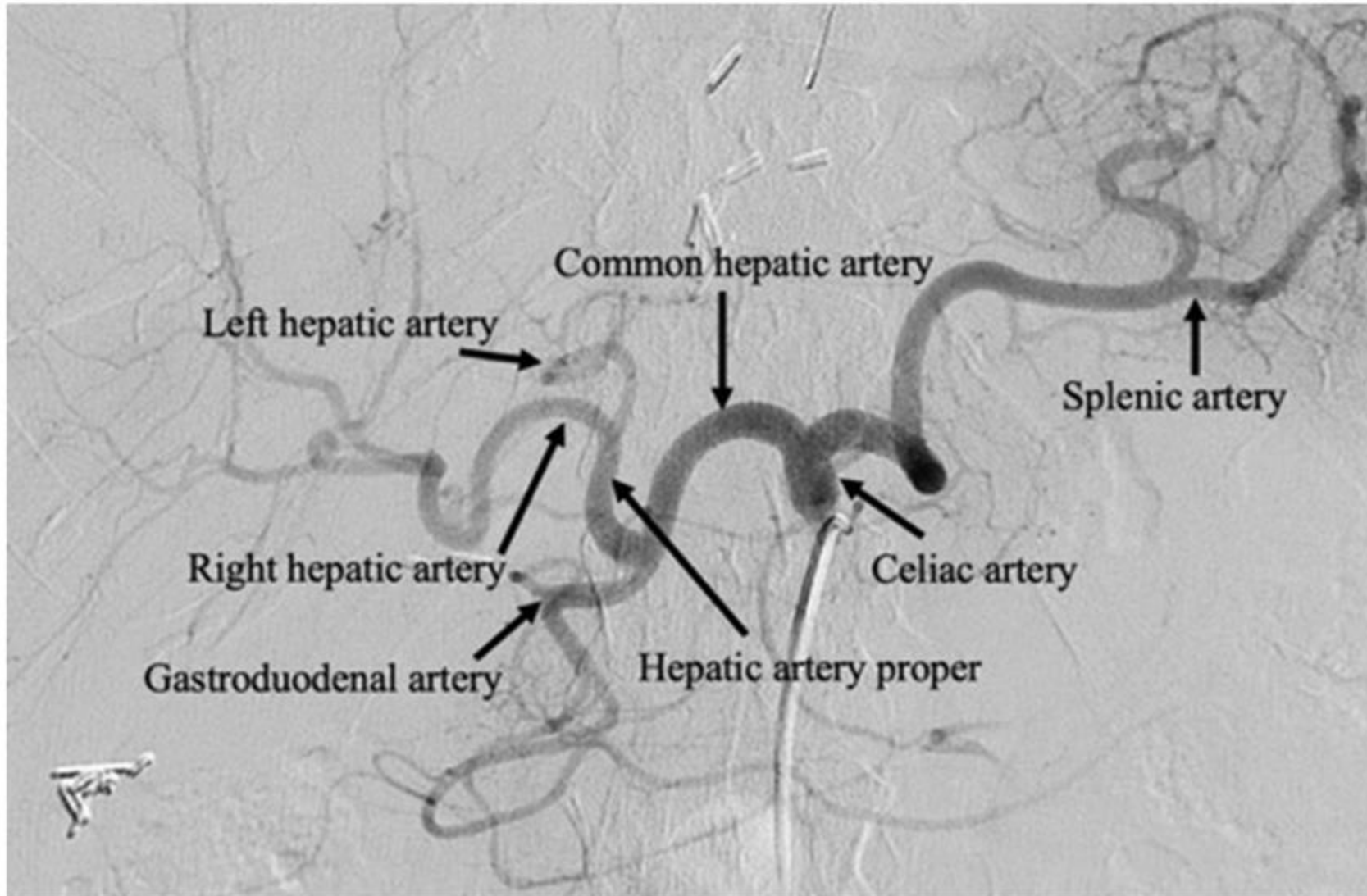
Anastomoses – connection between 2 vessels that allows blood to flow between them

3 main sites:

- Oesophagus
- Rectum
- Anterior abdominal wall



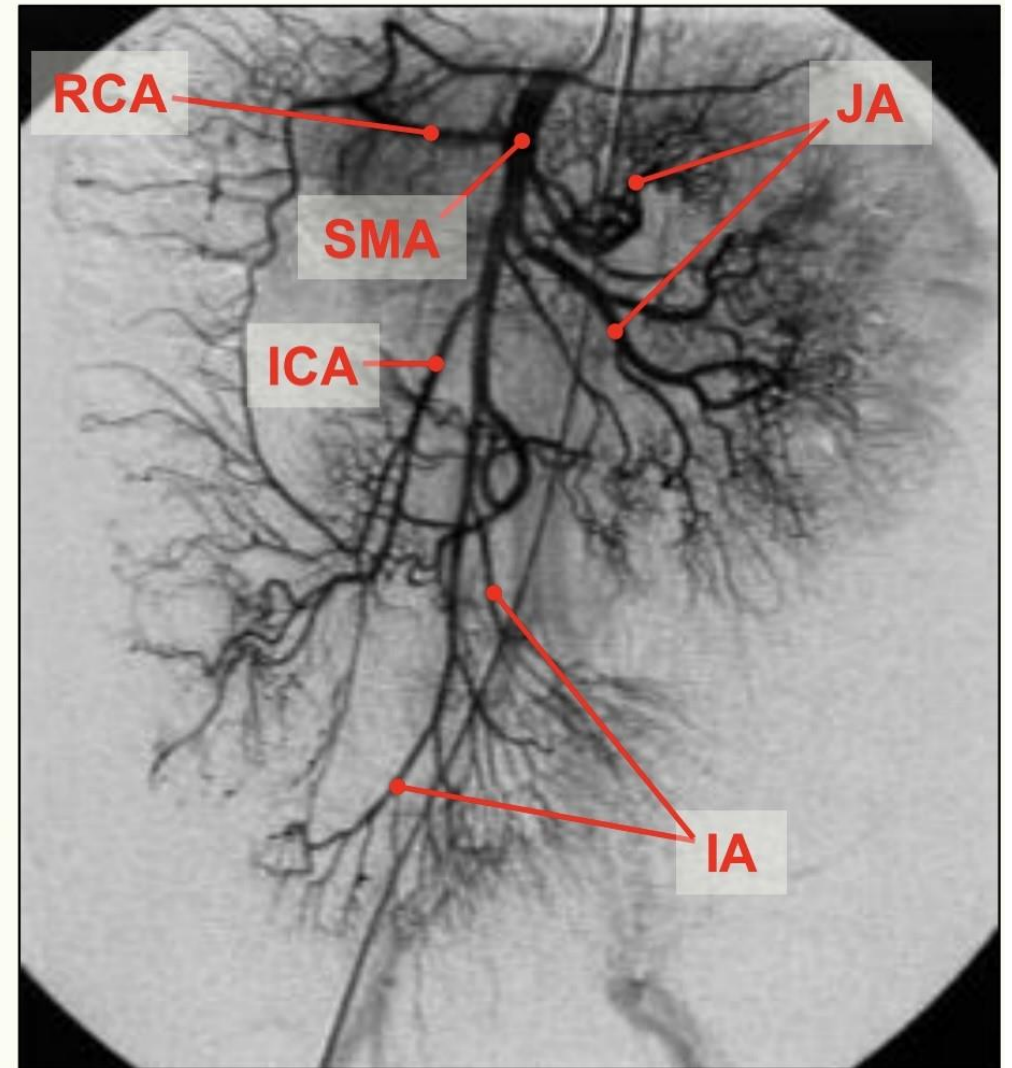
ANGIOGRAM – COELIAC TRUNK



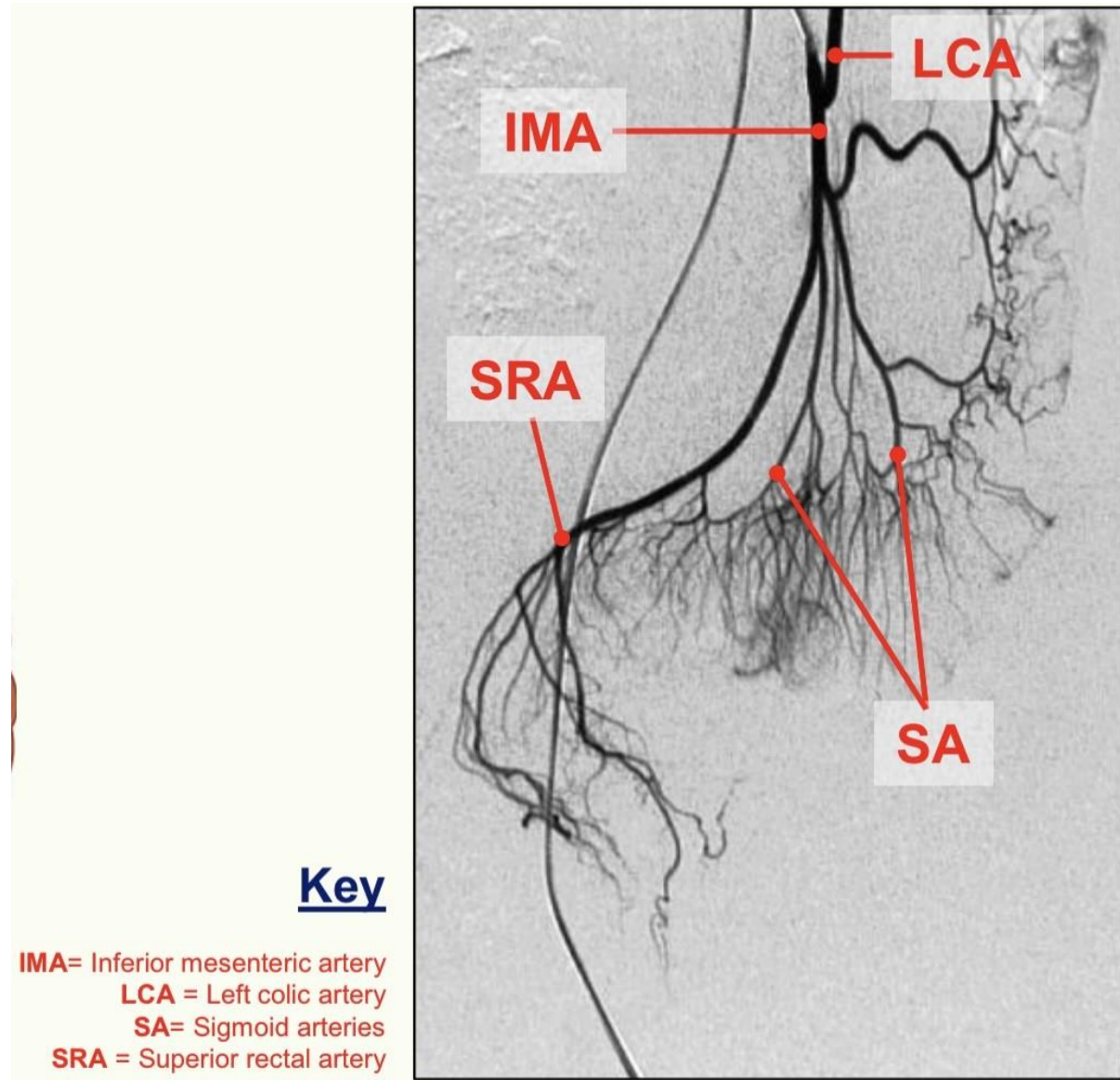
ANGIOGRAM - SMA

Key

SMA = Superior mesenteric artery
JA = Jejunal arteries
IA = Ileal arteries
ICA = Ileocolic artery
RCA = Right colic artery



ANGIOGRAM - IMA

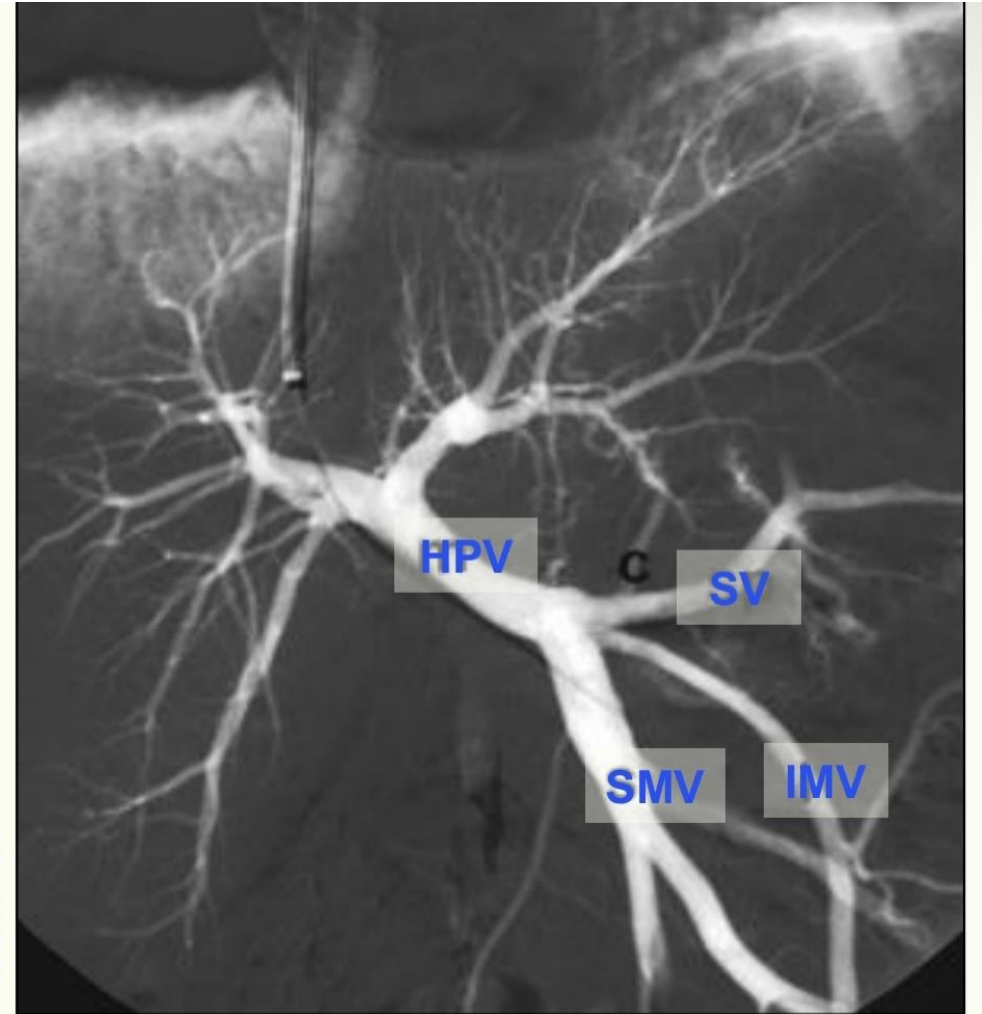


VENOUS ANGIOGRAM

ography

Key

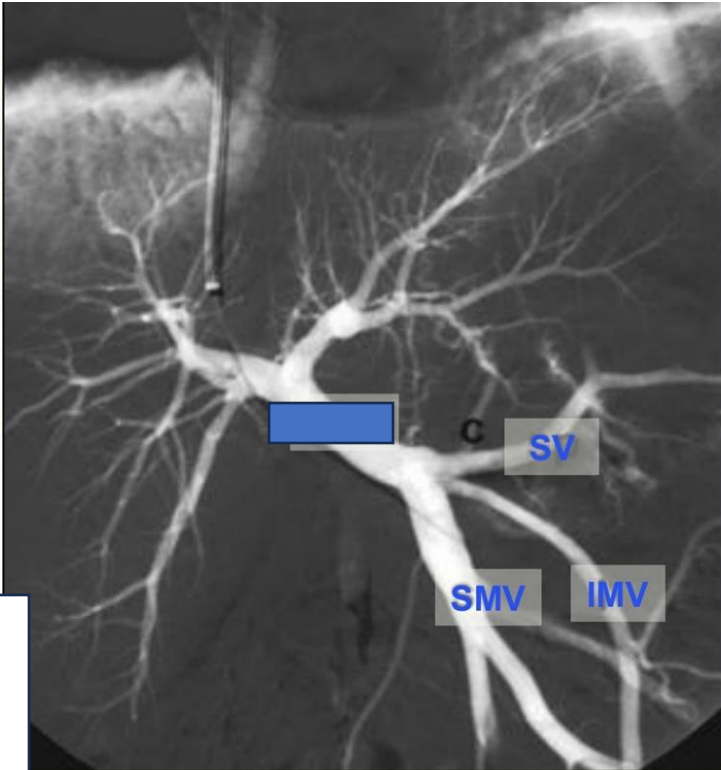
HPV= Hepatic portal vein
SV = Splenic vein
SMV= Superior mesenteric vein
IMV = Inferior mesenteric vein



Questions!!!

1. What do the lymph nodes primarily drain into?
2. What 4 things does the IMA supply?
3. What is the vertebral level for the coeliac trunk?
4. What artery supplies the pancreas AND duodenum?

ography



Key

