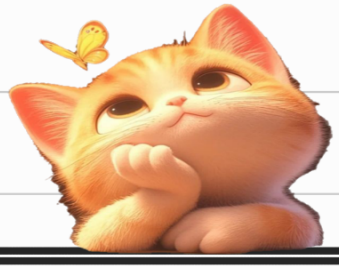
Celiac trunk

- Left gastric A.
- Splenic A.
  - Pancreatic branches (Ant. & post.)
  - Short gastric branches
  - Left gastroepiploic A.
- Common hepatic A.
  - Gastro-duodenal A.
    - Right gastroepiploic A.
    - Superior Pancreatico-duodenal A.
  - Right gastric A.
  - Right hepatic
    - Cystic A. (gallbladder)
  - Left hepatic



Superior mesenteric artery

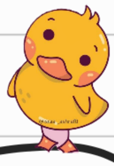
- Inf. pancreatico-duodenal A.
- Middle colic A.
- Right colic A
- Iliocolic A.
  - Cecal branches
    - Ant. cecal A.
    - Post. cecal A.
      - Appendicular A.
- Jejunal & ilial branches

Inferior mesenteric artery

- Left colic A. (Lateral 1/3 of transverse colon + descending colon)
- Sigmoid As (Sigmoid colon)
- Sup. rectal A. (rectum + upper half of anal canal)

Abdominal Aorta

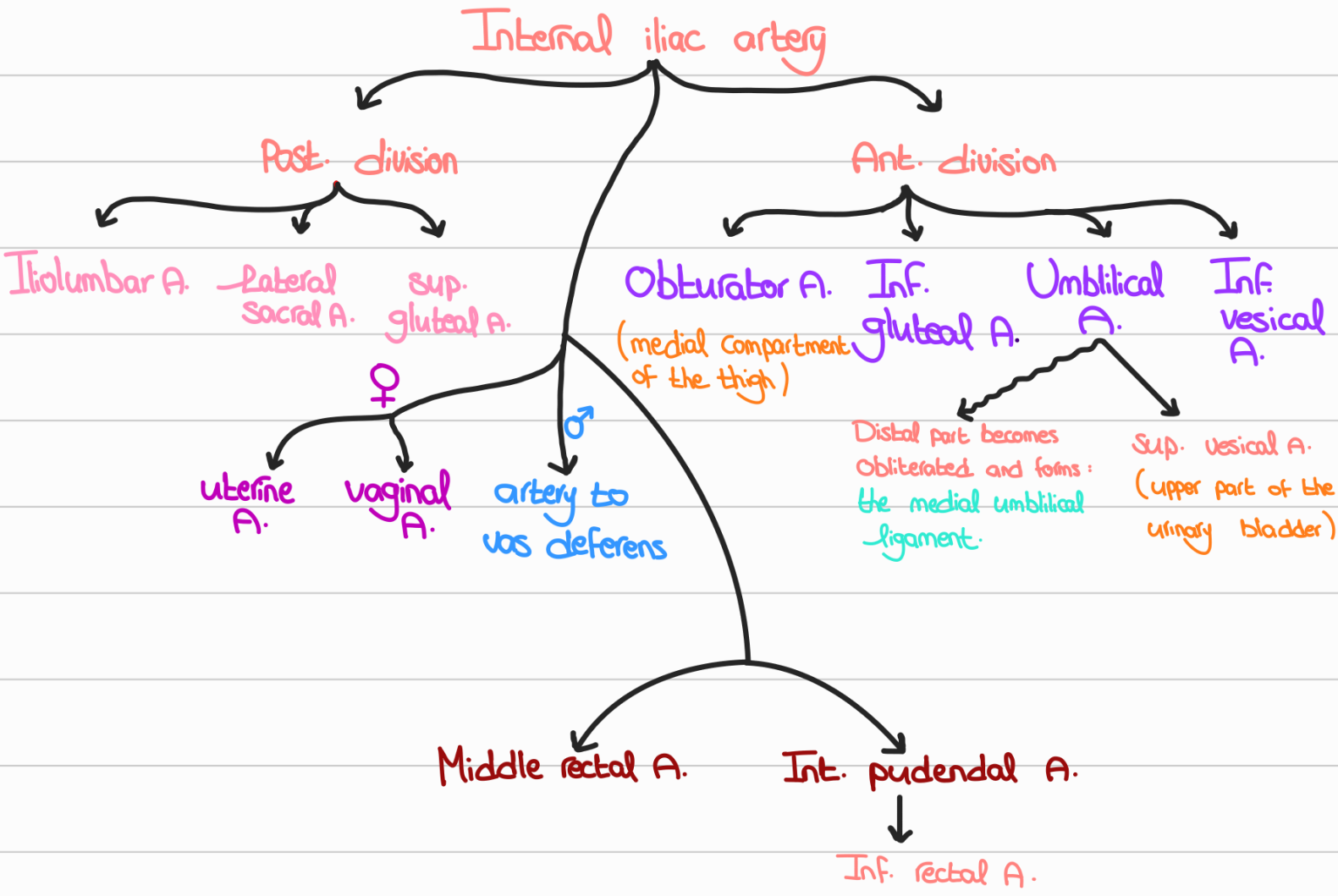
- **Single branches**
  - **Back**
    - Median sacral A.
  - **Front**
    - Celiac trunk
    - Sup. mesentric
    - inf. mesentric
- **Paired branches**
  - **Back**
    - 4 Lumbar arteries
  - **Sides**
    - Inf. phrenic A. (diaphragm)
    - Middle supra-renal A. (adrenal gland)
    - Renal arteries (-ℓ2)
  - **Front**
    - Gonadal A. (-ℓ2)



Abdominal Aorta

- **Rt. common iliac A.**
  - **Ext. iliac A.**
    - Inf. epigastric A.
    - Deep circumflex iliac A. (muscles of the lower abdominal wall)
    - Femoral A.
  - **Int. iliac A.**
    - next page
- **Lt. common iliac A.**
  - **Ext. iliac A.**
    - Inf. epigastric A.
    - Deep circumflex iliac A. (muscles of the lower abdominal wall)
    - Femoral A.
  - **Int. iliac A.**
    - next page

حسن علي محمد



Quick Notes :)

- Sup. rectal is a terminal branch of the inf. mesentric A.
  Middle " " " " " int. iliac A.
  Inferior " " " " " int. pudendal which is a terminal branch of int. iliac A.

Left gastric ⟶ Celiac trunk
Right gastric ⟶ Common hepatic
Left gastroepiploic ⟶ Splenic A
Right gastroepiploic ⟶ Gastroduodenal A.
Sup. pancreaticoduodenal ⟶ Gastroduodenal
Inf. pancreaticoduodenal ⟶ Sup. mesentric.

IVC tributaries

- **Anterior**
  - Rt. hepatic v.
  - Lt. hepatic v.
  - Central hepatic v. (may be absent)
- **Lateral visceral**
  - Rt. suprarenal v.
    - Rt. NOT Lt. 'cause Lt. suprarenal v. drains into the Lt. renal v.
  - Renal veins
  - Rt. gonadal v.
    - Rt. NOT Lt. 'cause Lt. gonadal v. drains into the Lt. renal v.
- **Lateal abdomial wall**
  - Inf. phrenic v.
  - 4 Lumbar veins
- **veins of origin**
  - 2 common iliac veins
  - Median sacral v.

---

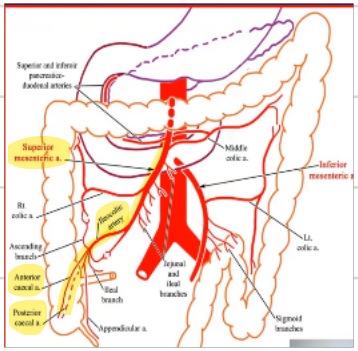
portal v. tributaries

- **Splenic v.**
  - Short gastric v.
  - Lt. gastroepiploic v.
  - Inf. mesenteric v.
  - pancreatic v.
  - Sup. mesenteric v.
- **Sup. mesenteric v.**
  - Jejunal & Ilial branches
  - Iliocolic v.
  - Rt. colic v.
  - Middle colic v.
  - Inf. pancreaticoduodenal v.
  - Rt. gastroepiploic v.
- **Inf. mesenteric v.**
  - Sup. rectal v.
  - Sigmoid v.
  - Lt. colic v.
- **Lt. gastric v.**
  - branches of the distal esophagus
  - left portion of the lesser curvature of the stomach
- **Rt. gastric v.** → Rt. portion of the lesser curvature of the stomach
- **Cystic v.** → Gall bladder

Remember

Abdominal aorta
↳ superior mesentric

BLOOD SUPPLY



Midgut

superior mesentric
↓
iliocolic
↓
Ant & post cecal

VENOUS DRAINAGE

Ant & post cecal
↓
superior mesentric vein (joins splenic vein → portal vein)

positive neck of pancreas

LYMPHATIC DRAINAGE

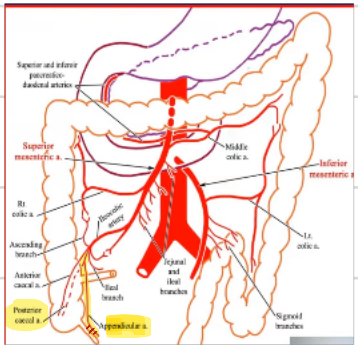
mesentric lymph nodes → superior mesentric nodes

NERVE SUPPLY

superior mesentric plexus

formed by sympathetic & parasympathetic (vagus)

BLOOD SUPPLY



Mid gut

iliocolic
↓
posterior cecal
↓
appendicular artery

VENOUS DRAINAGE

appendicular vein (accompanies the artery)
↓
posterior cecal
↓
superior mesentric

LYMPHATIC DRAINAGE

They drain into one or two nodes lying in the mesoappendix
↓
superior mesentric nodes

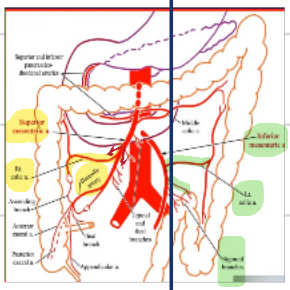
NERVE SUPPLY

take care it takes visceral innervation from t10

BLOOD SUPPLY

Midgut

ileocolic artery
+
Rt. colic artery



Hindgut

Inferior mesentric
↓
Lt. colic artery + 1st sigmoid branch

VENOUS DRAINAGE

Corresponding to the arteries
↓↓
superior mesentric

Also, ending in
↓↓
Inferior mesentric vein ≈ splenic vein

LYMPHATIC DRAINAGE

superior mesentric nodes

Inferior mesentric nodes

NERVE SUPPLY

Sympathetic → superior mesentric Ganglia

Parav → vagus

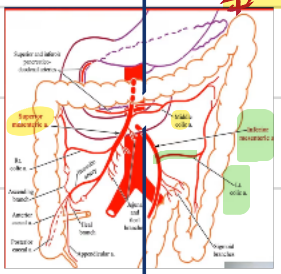
vagus + sympathetic fibers join forming nerve plexus → follows arterial supply of ascending colon

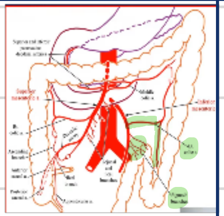
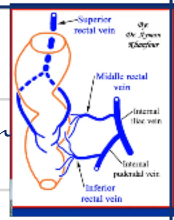
Sym → Inferior mesentric ganglion L1/2

para → S2/3/4

They join forming inferior mesentric plexus/ hypogastric plexus

Proximal 2/3 | Distal 1/3

	Proximal 2/3	Distal 1/3
BLOOD SUPPLY	# Midgut superior mesentric ↓ Middle colic A.	 # hindgut Inferior mesentric A. ↓ left colic A.
VENOUS DRAINAGE	superior mesentric vein	Inferior mesentric vein
LYMPHATIC DRAINAGE	superior mesentric nodes	Inferior mesentric nodes
NERVE SUPPLY	Same as Ascending (Midgut)	Same as descending (Hindgut)

	SIGMOID	RECTUM	ANAL CANAL
BLOOD SUPPLY	# Hind gut Inferior mesentric → left colic, sigmoid artery 	# Hind gut Inferior mesentric → superior rectal Internal iliac → middle rectal; → internal pudendal → inferior rectal  	# Hind gut upper half : superior rectal lower half : middle & inferior rectal (internal iliac)
VENOUS DRAINAGE	inferior mesentric	superior rectal → portal vein # portal circulation middle & inferior → inferior vena cava # systemic circulation  	Same as rectum
LYMPHATIC DRAINAGE	inferior mesentric nodes	**Lymph drainage:** ✓ Rectum & upper part of anal canal → para-aortic lymph nodes (inferior mesenteric → superior mesenteric → celiac → thoracic duct). ✓ Lower half of anal canal → superficial inguinal lymph nodes (on femoral triangle).	Same as rectum
NERVE SUPPLY	Both from inferior hypogastric plexus Sym → from the lumbar splanchnic nerves (L1, 2) goes to (synapse on) inferior mesentric ganglia ↓ post ganglionic the post ganglionic is called the hypogastric pelxus which carries sym & para para → from pelvic splanchnic (S2,3,4)	Same as Sigmoid	• upper half : Autonomic (involuntary), sensitive to stretch • lower half : S4, painful, voluntary

رَبَّنا آتِنا فِي الدُّنيا حَسَنةً وفِي الآخِرةِ حَسَنةً وقِنا عَذابَ النّارِ

BLOOD SUPPLY

Hepatic Artery

Right Branch — right lobe

left branch — left/ caudate/ quadrate lobes

Hepatic Artery → Right branch → cystic Artery

+

superior pancreatico duodenal artery

- similar as duodenum

superior & inferior

pancreatico duodenal

VENOUS DRAINAGE

- not precisely opposite of the arterial supply.

→ Right hepatic (right lobe)
→ left hepatic (left lobe)
→ central hepatic (caudate & quadrate)

directly to inferior vena cava

right atrium → lungs

cystic vein → right branch of portal vein

splenic → superior mesenteric

LYMPHATIC DRAINAGE

majority of liver ↓ via porta hepatis to the liver

hepatic lymphs → celiac.....

Bare area ↓ few vessels pass through the diaphragm ⇒ right lymphatic duct

cystic → hepatic → celiac

splenic → superior mesenteric → celiac

NERVE SUPPLY

sym → greater splanchnic nerves (T5-T9)

pathway: pregangionic → (synapse) Celiac ganglion → post.gan →

follow the hepatic artery to the liver

Para sym → vagus nerve

- sym & para
- Hormonal reg. by CCK

Released by duodenum in response to fatty changes

gall bladder contraction / sphincter of Oddi relaxation

sym → greater splanchnic (T5-T9)
→ lesser splanchnic (T10-T11)

pathway: pre-gan → celiac/ superior (synapse) mesenteric ganglion → post.gan →

follow the splenic & pancreaticoduodenal arteries

para → vagus

اللَّهم يا مغيث أغث أهلنا في غزّة، اللَّهم يا جبّار اجبر أهلنا في غزّة، اللَّهم طمئنهم وامنهم وأعزّهم وانصرهم وكُن معهم ولا تكن عليهم، اللَّهم ارفع البلاء عنهم وعنا، اللَّهم أرنا الويل بأعداءنا وأعنا عليهم.

BLOOD SUPPLY

splenic Artery —divides→ 5-6 branches at the hilum

VENOUS DRAINAGE

splenic vein

LYMPHATIC DRAINAGE

splenic → superior mesenteric → Celiac

NERVE SUPPLY

symp: greater splanchnic nerve (T_5-T_9)

Pathway: preganglionic → celiac ganglion (synapse) → post → follow the splenic A. to the spleen.