

What is the Alimentary Canal Blood Supply?

Worksheet

The gut tube is supplied by three unpaired aortic branches: the celiac trunk (foregut), the superior mesenteric artery (midgut), and the inferior mesenteric artery (hindgut), each matching the organ's embryonic origin.

Questions

1. Which artery supplies the midgut?

- A) Celiac trunk
- B) Superior mesenteric artery
- C) Inferior mesenteric artery
- D) Renal artery

2. The hindgut extends from the distal transverse colon to which structure?

- A) The stomach
- B) The cecum
- C) The upper anal canal
- D) The duodenum

3. Which vessel is NOT a branch of the celiac trunk?

- A) Left gastric artery
- B) Splenic artery
- C) Common hepatic artery
- D) Superior mesenteric artery

4. Gut venous blood ultimately drains into which vein before the liver?

- A) Inferior vena cava directly
- B) Portal vein
- C) Renal vein
- D) Azygos vein

5. A patient has sudden severe pain after a meal and known atherosclerosis. Angiography shows an embolus at the origin of the SMA. Which gut segments are at risk?

6. During surgery, the surgeon ligates the celiac trunk. Which organs lose their primary arterial supply?

7. A tumor is found in the sigmoid colon. Which artery must the surgeon control first?

8. Define: What supplies the foregut?

9. Define: What supplies the midgut?

10. Define: What supplies the hindgut?

Answer Key

1. B) Superior mesenteric artery - The SMA supplies the midgut, from the major duodenal papilla to the proximal transverse colon.
2. C) The upper anal canal - The hindgut ends at the pectinate line, roughly the upper anal canal.
3. D) Superior mesenteric artery - The SMA is a separate, more inferior branch of the aorta, not a celiac branch.
4. B) Portal vein - Splenic and superior mesenteric veins join to form the portal vein, delivering nutrient-rich blood to the liver.
5. The SMA supplies the midgut Midgut = distal duodenum, jejunum, ileum, cecum, appendix, ascending colon, proximal two-thirds of the transverse colon All of these segments are now ischemic-at-risk
6. Celiac trunk = foregut territory Branches: left gastric, splenic, common hepatic arteries Organs affected: stomach, proximal duodenum, liver, spleen, pancreas (via these branches)
7. Sigmoid colon develops from the hindgut Hindgut is supplied by the inferior mesenteric artery (IMA) Surgeon ligates the IMA (or its sigmoid branches) to control bleeding and lymphatic spread
8. The celiac trunk, via its left gastric, splenic and common hepatic branches.
9. The superior mesenteric artery (SMA).
10. The inferior mesenteric artery (IMA).

Bounlu

All cards, step-by-step solutions and an AI tutor are in the Notek app.
Promy turns exam dates into automatic reminders.