

# Lab 1 Challenge Question Answers

- The anterior rectus sheath superior the umbilicus consists of which layers?
  - From anterior to posterior = aponeurosis external abdominal oblique, aponeurosis of anterior ½ (anterior lamina) internal abdominal oblique
- Where does the posterior rectus sheath end?
  - Arcuate line
- What forms the boundary of the superficial inguinal ring?
  - The external abdominal oblique aponeurosis
- Which nerve of the lumbar plexus courses through both rings (superficial and deep)?
  - Genital portion of genitofemoral n.
- Which nerve of the lumbar plexus only courses through the superficial ring?
  - Ilioinguinal n.
- Trace the superior epigastric artery back to the aorta.
  - Superior epigastric → internal thoracic (mammary) → 1<sup>st</sup> part subclavian artery
    - Left side: → aorta
    - Right side: → brachiocephalic trunk (artery) → aorta

## Lab 2 Challenge Question Answers

- What provides preganglionic parasympathetic innervation to the esophagus?
  - Vagus
    - Upper 1/3 = via recurrent laryngeal
    - Lower 2/3 = esophageal plexus via L and R vagus n.
- Where are the divisions between the foregut, midgut and hindgut?
  - Foregut/Midgut = major duodenal papilla (middle of duodenal 2<sup>nd</sup> part)
  - Midgut/Hindgut = splenic flexure
- What divides the right infracolic space from the left infracolic space?
  - Root of the mesentery
- What space allows communication between the greater sac from the lesser sac?
  - Epiploic foramen (Foramen of Winslow)

## Lab 3 Challenge Question Answers

- What spinal cord levels provide preganglionic sympathetic fibers to the foregut? Describe the path of these fibers.
  - Greater splanchnic n. (T5-T9)
  - T5-T9 lateral horns → white rami communicans → sympathetic ganglia → greater splanchnic nerve → celiac ganglia → celiac plexus
- Where is the location of neuron cell bodies of postganglionic sympathetic fibers that supply the foregut?
  - Celiac ganglia
- Where is the location of GVA neuron cell bodies that innervate the foregut? Describe their path.
  - Dorsal root ganglia of levels T5-T9
  - Organ → celiac plexus → pass through celiac ganglia → greater splanchnic nerve → pass through sympathetic ganglia → white ramus communicans → ventral ramus → spinal nerve → dorsal ramus → dorsal horn (T5-T9)
- Can you find a coronary (left gastric)? vein What is the clinical significance of this vein?
  - Drain into portal vein, but also drain into esophageal veins → azygous venous system → S vena cava
  - If portal hypertension, blood that takes the alternate path of getting back to the heart by passing through the esophageal venous system to drain into the S. vena cava. Large amount of blood taking this route can lead to engorgement of esophageal veins (esophageal varices).

## Lab 4 Challenge Question Answers

- What spinal cord levels and nerves provide preganglionic sympathetic fibers to the midgut? Describe the path of these fibers.
  - T10-T12 neurons in lateral horn → axons pass through ventral ramus → white ramus communicans → paravertebral ganglia → lesser/least splanchnic → SM Ganglia synapse with postganglionic neurons → superior mesenteric plexus
- Where is referred pain from the midgut “felt?”
  - T10-T12 dermatomes “periumbilical” region
- What nerve provides preganglionic parasympathetic innervation to the hindgut?
  - Pelvic splanchnic nerve (S2-S4)
- To what dermatomes will pain from the descending colon be referred?
  - (T12) L1-L2
- To what dermatomes will pain from the distal ½ of the sigmoid colon be referred?
  - S2-S4