A young mother brings her 8-year-old daughter to a pediatrician for the first time because the girl has been complaining of a big lump and discomfort in her right groin area. The physician discovers what appears to be a complete indirect inguinal hernia on the right side. Which of the following structures is most likely to be compressed by the body of the hernial sac?

A. Iliohypogastric nerve.

B. Pampiniform plexus.

C. Inferior epigastric artery.

✓ D. Ilioinguinal nerve.

E. Superficial inguinal lymph nodes.

A 42-year-old man visits his primary care physician complaining that his left scrotum is swollen. Complete physical examination reveals an idiopathic acquired hydrocele in the left side tunica vaginalis. In tapping the hydrocele to remove the excess fluid, the physician inserts a fine trocar and cannula into the lumen of the tunica vaginalis. Which of the following is the last (deepest) structure to be traversed by the cannula?

A. Visceral layer of the tunica vaginalis.

✓ B. Parietal layer of the tunica vaginalis.

C. Internal spermatic fascia.

D. Tunica albuginea.

E. Dartos muscle.

During prenatal development, the tissue layers in the lower abdominal wall give rise to several structures that become related to the external genitalia. Which of the following is the source of the cremaster muscle and fascia?

- ✓ A Internal abdominal oblique.
- B Transversus abdominis.
- C Fatty layer of the superficial fascia.
- D Transversalis fascia.
- E External abdominal oblique.

A physician is conducting a preseason physical examination of a 16-year-old boy trying out for his high school football team. In examining the groin area, it is important that the physician understands the superficial (external) inguinal ring is an opening in which of the following?

A. Belly of the internal oblique muscle.

✓ B. Aponeurosis of the external oblique muscle.

C. Lacunar ligament.

D. Fascia transversalis.

E. Conjoint tendon.

During a physical examination of the inguinal region, a physician asks his 35-year-old male patient to turn his head and cough. Which of the following is true of the inguinal canal when the patient coughs?

A. The contracting internal oblique muscle reinforces the posterior wall of the canal behind the deep inguinal ring.

B. Contraction of the abdominal wall shortens the inguinal canal and draws the deep and superficial inguinal rings into position opposite one another.

✓ C. Contraction of the arching fibers of the internal oblique and transversus abdominis muscles lowers the roof of the canal so that the canal is practically obliterated.

D. The inguinal ligament is tensed by reflex flexion of the hip joint.

E. The conjoint tendon is loosened and relaxes the superficial inguinal ring.

A 12-year-old boy presents in the emergency room with nausea, fever, and abdominal pain. Thorough examination leads to a diagnosis of acute appendicitis, and the boy is moved to the operating room for an emergency appendectomy. Which of the following is a correct relation with respect to conducting the appendectomy?

A. The site for the incision is in the epigastric region of the abdominal wall.

✓ B. When muscle splitting while making the incision (McBurney's incision), the surgeon will first encounter muscle fibers that angle down and medially.

C. The appendix is located in the lower left quadrant.

D. The incision line follows the lower part of the linea alba.

E. The incision will include cutting the conjoint tendon.

Abdominal palpation is a common component of a general physical examination. Assuming examination of an adult woman of average body build and normal health, which of the following organs is palpable in the upper right abdominal quadrant?

A Descending colon.

B Spleen.

C Right external iliac artery.

D Cecum.

✓ E Liver.

A 30-year-old man is diagnosed with an early stage malignant tumor in his left testicle. Which of the following groups of lymph nodes would receive the initial primary metastasis from this tumor?

A. Anterior axillary.

B. Superficial inguinal.

C. Internal iliac.

✓ D. Para-aortic.

E. Posterior axillary.

In performing a vasectomy, a small incision is made in the upper, anterior part of the scrotal wall, the spermatic cord is located, and the vas (ductus) deferens is dissected free and divided. The surgeon should understand that which of the following is a correct relation?

A. The testicular artery arises from the inferior epigastric artery.

B. The pampiniform plexus leaves the spermatic cord outside the superficial inguinal ring.

C. The spermatic cord extends from the superficial inguinal ring to the testis.

✓ D. The vas deferens originates from the tail of the epididymis.

E. The spermatic cord is covered by five layers of spermatic fascia.

A 50-year-old man presents with multiple symptoms suggestive of an abdominal hernia. Which of the following is most indicative of a direct inguinal hernia?

A. The neck of the hernial sac lies lateral to the inferior epigastric artery.

B. The neck of the hernial sac lies below and lateral to the pubic tubercle.

C. The hernial sac extends the length of the inguinal canal.

✓ D. The hernia bulges forward through the posterior wall of the inguinal canal.

E. The hernia forms a swelling in the upper anterior thigh, below the inguinal ligament.

Initial examination of a newborn boy baby reveals a complete indirect inguinal hernia on the right side that is severely compressing the structures within the inguinal canal. Which of the following structures is most likely to be spared in this case?

A. Genital branch of the genitofemoral nerve.

B. Testicular lymph vessels.

C. Testicular artery.

D. Ilioinguinal nerve.

✓ E. Deep circumflex iliac artery.

A 38-year-old professional baseball player suffers a severe abdominal oblique muscle strain during batting practice. Which of the following is the most likely outcome?

A. This injury probably includes damage to the psoas major muscle.

B. This injury will limit rotation of the trunk.

C. The pain from this injury is conveyed mainly through autonomic nerves.

D. The pain from this injury will be eliminated by performing an anterior abdominal nerve block of spinal nerve L1.

E. The pain from this injury will be reduced during forced expiration.

The conjoint tendon is an important structure in that it reinforces the posteromedial wall of the inguinal canal immediately behind the superficial inguinal ring. Which of the following is true of the conjoint tendon?

A. It is fused across the midline with the opposite side conjoint tendon.

B. It is the insertion area for the cremaster muscle.

C. Its lateral edge is fused with the inguinal ligament.

D. It is formed by the fusion of the aponeuroses of the external oblique and internal oblique muscles.

✓ E. It is attached to the pubic crest and pectineal line.

During a domestic dispute, a 28-year-old pregnant woman was knocked down and kicked violently in the lower abdominal wall. She was later taken to the emergency room complaining of nausea and severe pain in the area she was kicked. Physical examination revealed extensive bruising and an acutely tender mass with a well-defined lateral border inferolateral and right of the umbilicus. CT scans confirmed a diagnosis of a hematoma within the right rectus sheath. Which of the following vessels had most likely ruptured?

A Lumbar arteries.

B Superficial epigastric veins.

C Lower posterior intercostal arteries.

D Inferior epigastric vein.

E Deep circumflex iliac artery.

A 40-year-old woman is diagnosed with an internal abdominal hernia in which a loop of small bowel has passed through the epiploic foramen and become lodged in the lesser sac. During the procedure to release the hernia, the surgeon finds it necessary to incise the free edge of the lesser omentum. Which of the following structures must the surgeon take care to spare when cutting the lesser omentum?

A. Gastroepiploic arteries.

B. Aorta.

C. Esophagus.

D. Inferior vena cava.

✓ E. Portal vein.

A 65-year-old woman suffering severe lacerations of the spleen must have that organ removed. In dissecting at the hilum of the spleen during the splenectomy, the surgeon must be careful to avoid damaging which of the following parts of the pancreas?

A. Tail.

B. Uncinate process.

C. Neck.

D. Head.

E. Body.

A 21-year-old male soldier is brought to the emergency room with multiple injuries suffered in a bomb explosion. His abdomen is burst, with coils of intestine exposed and some lying extra-abdominal. In assessing the abdomen, which of the following features best distinguishes the jejunum from the ileum?

A. The jejunal mesentery is attached to the posterior abdominal wall below and to the right of the aorta.

B. The jejunal mesentery contains more fat distributed throughout its extent.

✓ C. There are fewer vascular arcades serving the jejunal wall.

D. The jejunum is narrower bored and thinner walled.

E. The jejunum possesses more numerous, visible Peyer's patches along the antimesenteric border.

A 55-year-old man has a 90% occlusion of the inferior mesenteric artery due to atherosclerotic plaque formation at the origin of the vessel. Which of the following is the most likely outcome of this condition?

A. Blood flow to the pancreas via the inferior pancreaticoduodenal artery is affected.

B. Blood flow to the ileum via the ileocolic artery is reduced.

C. Blood flow through the marginal artery remains unchanged.

D. Blood flow to the descending colon via the left colic artery is affected.

E. Blood flow to the sigmoid colon via the sigmoid arteries is normal.

A 75-year-old woman is found dead in her home by her part-time visiting nurse. Autopsy reveals a perforated ulcer in the posterior wall of the body of the stomach and erosion of a closely related artery. Death was likely caused by fatal hemorrhage from the damaged vessel. Which of the following arteries is most likely ruptured?

A. Left gastroepiploic artery.

B. Splenic artery.

C. Short gastric artery.

D. Gastroduodenal artery.

E. Left gastric artery.

A 9-year-old boy suffers severe traumatic lacerations of the liver as the result of an automobile accident. Following thorough evaluation in the emergency room, the medical staff concludes most of the right lobe of the liver must be removed. Which of the following relations should the surgical team recognize as correct in preparing to resect the liver?

A. The ligamentum venosum is attached to the right branch of the portal vein in the porta hepatis.

B. The right triangular ligament of the liver connects the liver to the abdominal part of the esophagus.

C. The quadrate lobe drains into the right hepatic duct.

✓ D. The attachments of the hepatic veins to the inferior vena cava constitute the major supports for the liver.

E. The lesser omentum suspends the stomach from the bare area of the liver.

A 55-year-old woman is diagnosed with an early stage cancer of the ascending colon. If this cancer spreads, it most likely will first metastasize to which of the following groups of lymph nodes?

A. Superior mesenteric nodes.

B. Inferior mesenteric nodes.

C. Lateral aortic nodes.

D. Cisterna chyli.

E. Celiac nodes.

A 40-year-old man with a history of chronic gastric and duodenal ulcers is scheduled to undergo a vagotomy and partial gastrectomy in an attempt to reduce acid and gastrin secretions. If both vagal trunks are sectioned at the cardiac orifice of the stomach, which of the following organs will most likely be affected, as well?

A. Third part of the duodenum.

B. Descending colon.

C. Esophagus.

D. Diaphragm.

E. Urinary bladder.