

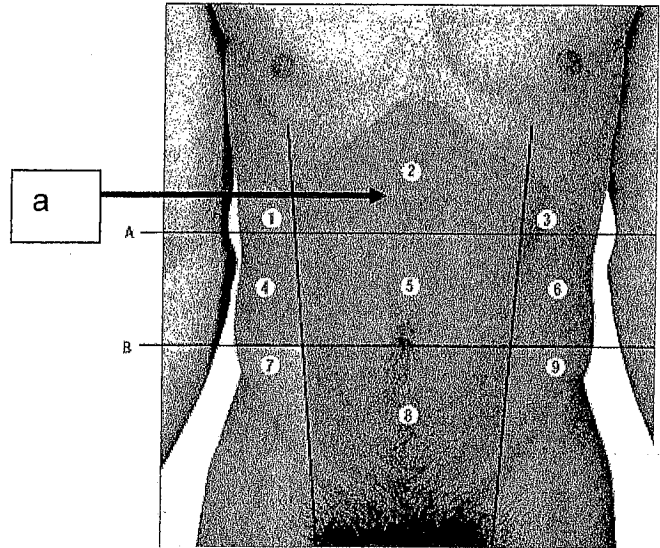
STRUCTURAL BASIS OF MEDICAL PRACTICE
EXAMINATION 3

September 17, 2009

PART I. Answer in the space provided. (7 pts)

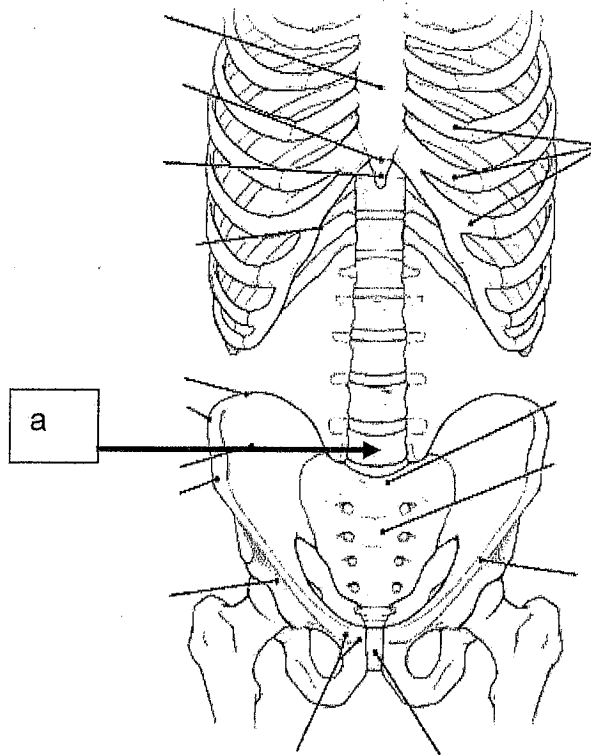
1. Identify the region. (0.5 pt)

a. _____



2. Identify the structure. (0.5 pt)

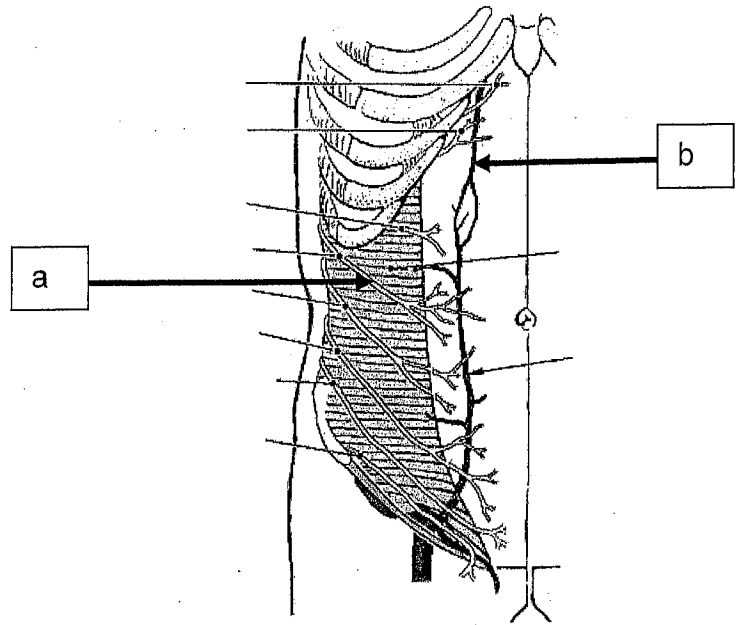
a. _____



3. Identify the structures. (1 pt)

a. _____

b. _____

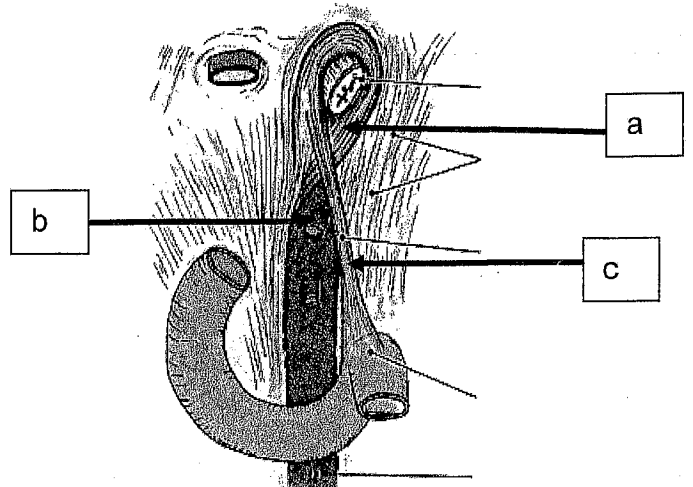


4. Identify the structures. (1.5 pts)

a. _____

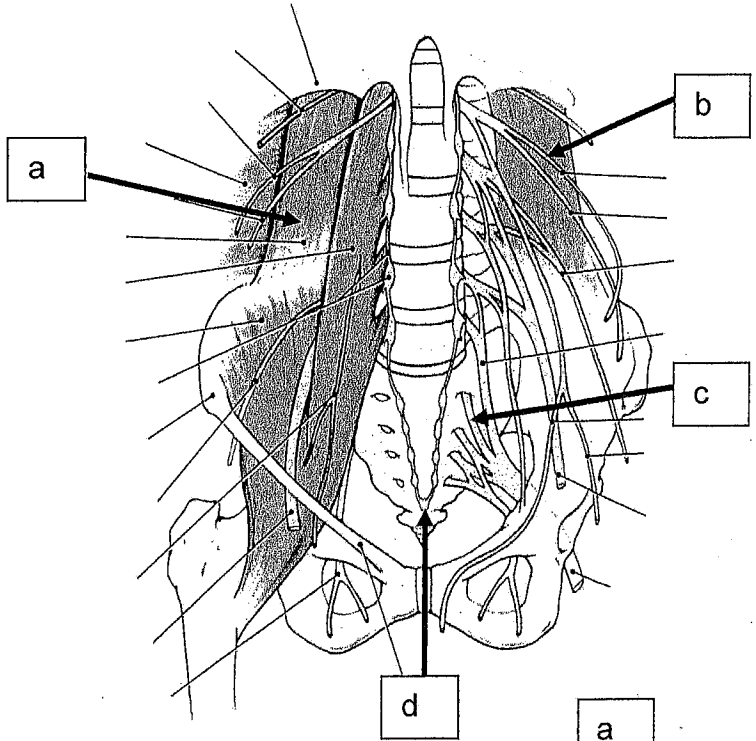
b. _____

c. _____



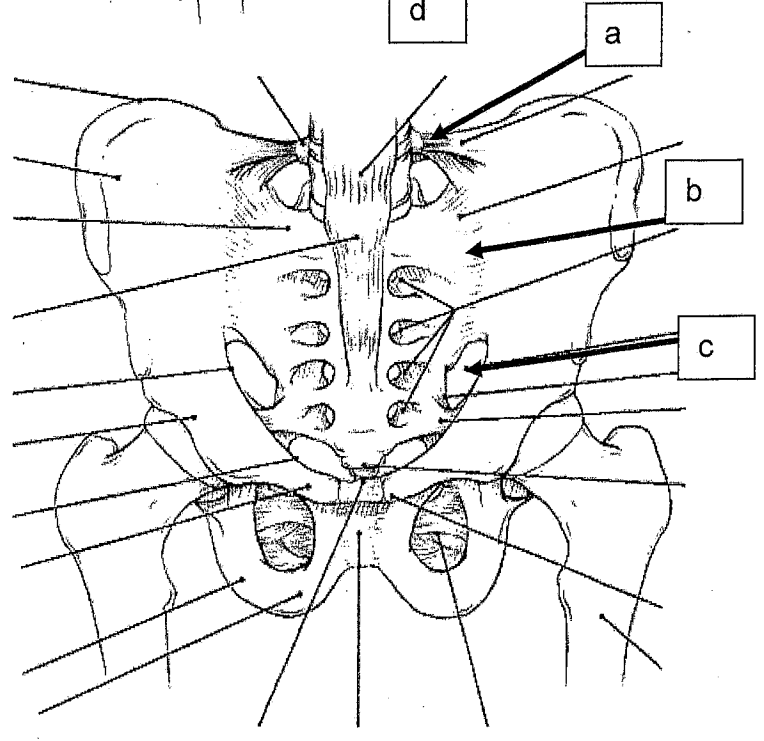
5. Identify the structures. (2 pts)

- a. _____
- b. _____
- c. _____
- d. _____



6. Identify the structure. (1.5 pts)

- a. _____
- b. _____
- c. _____



Part II. Circle the correct answer. All, none, or some may apply. (27 pts)

1. In regard to the abdominal vasculature, organs, and nerves:
 - a. The left gastric artery courses through the lesser omentum.
 - b. The superior mesenteric ganglion is located at the level of L3
 - c. The gastroduodenal artery contributes blood to the marginal artery.
 - d. The short gastric arteries are located in the gastrosplenic ligament.
 - e. The dorsal pancreatic artery descends posterior to the neck of the pancreas.
 - f. The superior mesenteric vein lies posterior to the tail of the pancreas.
 - g. The vasa recta in the jejunum are longer than that in the ileum.
 - h. The superior rectal artery lies between the peritoneum and the tela subcutanea in the transversalis fascia.
 - i. The cystic artery is embedded in extraperitoneal connective tissue.
 - j. The inferior mesenteric artery passes inferiorly to the left of the aorta.
 - k. The diameter of the ileum is smaller than that of the jejunum.
 - l. The superior mesenteric artery is inferior to the first lumbar artery.
 - m. The left lateral (paracolic) gutter lies to the left of the descending colon and is closed cranially by the phrenocolic ligament.
 - n. Derivatives of the foregut are supplied by the celiac artery, and innervated by the lumbar and pelvic splanchnic nerves.

2. With respect to the liver, duodenum, and pancreas:
 - a. The ligamentum venosum lies adjacent to the quadrate lobe of the liver
 - b. The left triangular ligament is a derivative of the dorsal mesentery.
 - c. According to the internal morphology of the liver, the quadrate lobe and part of the caudate lobe belong to a larger left lobe.
 - d. Plicae circulares are not present in the 1st part of the duodenum.
 - e. The hepatic veins drain into the portal vein.

- f. The second part of the duodenum is crossed by the transverse colon.
- g. The root of the mesentery begins at the duodenojejunal flexure.
- h. The greater duodenal papilla lies inferior to the lesser duodenal papilla.
- i. The tail of the pancreas lies in the gastrolial ligament.
- j. The phrenicocolic ligament forms a shelf for the spleen and is derived from ventral mesentery.

3. With respect to the abdominal wall:

- a. Tendinous intersections of the rectus abdominis muscle are adherent to the anterior layer of the rectus sheath.
- b. The external oblique muscle arises from the lower 8 ribs, thoracolumbar fascia, and the lateral two-thirds of the inguinal ligament.
- c. Nerves and vasculature of the anterior abdominal wall travel in the neurovascular plane, located between the external oblique and transversus abdominis muscles.
- d. The lacunar ligament is derived from fibers of the inguinal ligament that attach to the pecten pubis.
- e. Inferior to the arcuate line the extraperitoneal connective tissue lies immediately adjacent to the transversalis fascia.
- f. The suspensory ligament of the penis is derived from the tela subcutanea.
- g. The conjoint tendon (falx inguinalis) is formed by fibers of the internal oblique and transversus abdominis muscles.
- h. The cremaster muscle is innervated by the genital branch of the ilioinguinal nerve.
- i. The scrotal ligament, round ligament (ligamentum teres), and ovarian ligament are derivatives of the gubernaculum.
- j. The subcostal nerve serves as part of the innervation of the rectus abdominis, internal oblique, and external oblique muscles.

4. In regard to the kidneys and pelvis:

- a. The renal fascia is a derivative of the extraperitoneal connective tissue.
- b. The puborectalis muscle arises from the pubic bone and inserts on to the anococcygeal raphe.

- c. The transversalis fascia in the ischiorectal fossa is termed parietal pelvic fascia.
- d. The arcus tendineus serves as the origin of the iliococcygeus muscle and is derived from a condensation of the visceral pelvic fascia from the obturator muscle.
- e. The uterosacral ligaments in the female are derived as condensation of the visceral pelvic fascia.
- f. The coccygeus (ischiococcygeus) is a skeletal muscle.
- g. The lumbar splanchnic nerves lie lateral to the quadratus lumborum.
- h. The superior fascia of the pelvic diaphragm is a condensation of the visceral pelvic fascia.
- i. The inferior gluteal artery courses superior to the upper border of the coccygeus muscle.
- j. The deep dorsal vein of the penis lies deep to Buck's fascia on the dorsal surface of the corpora cavernosa penis.

5. "This and that":

- a. The left hypogastric nerve contains postganglionic neurons of the pelvic splanchnic nerves.
- b. The suspensory ligament of the ovary contains the ovarian artery.
- c. The greater vestibular glands in the female reside in the superficial pouch/space.
- d. Extravasation of urine into the deep pouch by damage of the membranous urethra and superior fascia of the U.G. diaphragm can reside in the ischiorectal fossa.
- e. The cisterna chyli is located at the level of the second lumbar vertebrae.
- f. The parietal layer of the tunica vaginalis is a continuation of the transversalis fascia into the scrotum.
- g. The appendix contains 3 distinct taenia coli.
- h. Meckel's diverticulum is an occasional feature of the ileum.
- i. The obliterated umbilical veins in the adult are termed medial umbilical ligaments.
- j. Transection above S2-4 results in an autonomous bladder.

EXAM NUMBER _____

Part III. Indicate your understanding of the following. Answer in the space provided. (30 pts)

1. Lymphatic drainage of the ovary. (6 pts)

EXAM NUMBER _____

2. Deep pouch/space in male and female perineum. (6 pts)

EXAM NUMBER _____

3. Inferior hypogastric plexus (pelvic plexus). (6 points)

4. Boundaries of Scarpa's fascia. (6 points)

EXAM NUMBER _____

5. Vasculature of the suprarenal gland. (6 points)

Part IV. Answer in the space provided (including the back of the page or the additional pages for each question). (36 pts)

1. A 56 year-old-male comes to your office complaining of frequent bouts of dysphagia (difficulty swallowing) and heartburn. On physical exam, you auscultate active bowel sounds in the thorax. A barium swallow is performed. In addition to evidence of gastroesophageal reflux, the cardia and fundus of the stomach are noted to be in the left hemithorax. Provide a complete **review of the anatomy of the diaphragm including the parts of the diaphragm, apertures, pathway(s) of structures coursing between the thorax to abdomen, vascularization, fascia, lymphatic drainage, relationships, and innervation.**

(12 pts)

EXAM NUMBER _____

2. As a resident in Gastroenterology, you are present during a colonoscopy on a 40 year old female to investigate rectal bleeding. During the procedure a mass is noted in the rectum, extending into the anal canal. Biopsy proves the diagnosis of carcinoma of the rectum and anal canal. In order to avoid a colostomy, the patient requests surgical excision of the mass with a re-anastomosis of the remaining colon to the external anus. In order to plan for surgery, please: **Review the anatomy of the rectum and anal canal. Include peritoneal relationships, vasculature, lymphatic drainage, innervation, and relationship to surrounding structures and spaces.** (12 pts)

3. A one month-old male patient, born prematurely at 35 weeks, is brought to the clinic because of vomiting. Auscultation reveals loud, high-pitched bowel sounds, and light palpation indicates a swelling superior and medial to the pubic tubercle. You suspect an indirect inguinal hernia. At surgical conference, you are asked to **present the anatomy of the spermatic cord; include contents, coverings, fascial boundaries, innervation, vasculature, lymphatics, and relationships. Additionally, you are asked to explain the pathway, and location of hernial contents associated with an indirect inguinal hernia that descends into the scrotum.** (12 pts)