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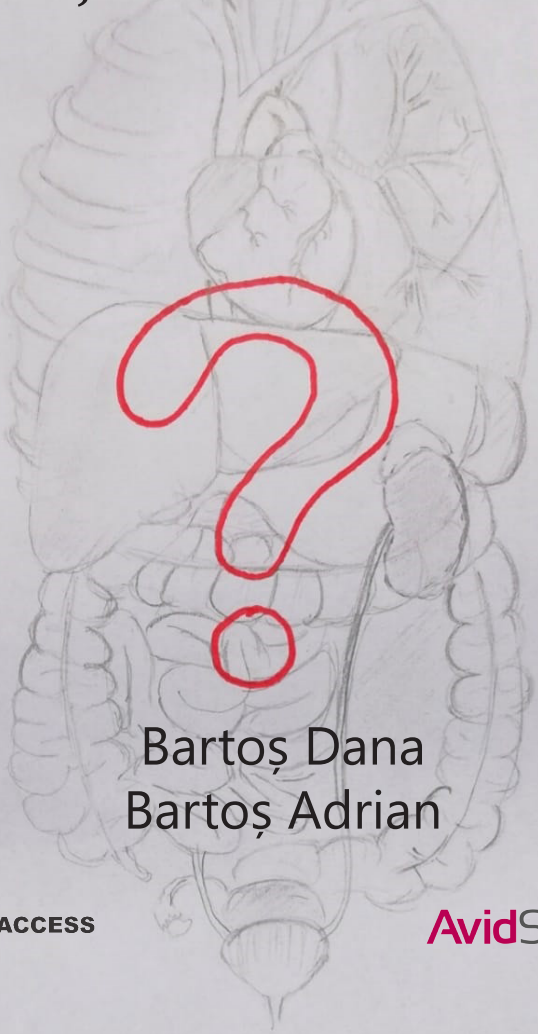
Anatomy MCQ:
Thorax, Abdomen and Pelvis



Bartoș Dana
Bartoș Adrian

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Monograph

Anatomy MQS: Thorax, Abdomen and Pelvis

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About The Editors

Dana Bartoș was born and raised in Cluj Napoca, Romania. After finishing the Medical University she became resident in general surgery. She got her diploma in this field and now she is a general surgeon with PhD. in pancreatic cancer.

Her supraspecialisations are: hepato-bilio-pancreatic surgery, advanced laparoscopic surgery and surgical endoscopy.

She and her husband (Adrian Bartoș) have multiple national premiers from which we mention: they introduced in their country for the first time in a public hospital the HIPEC procedure as "standard of care", the first Hybrid approach (endoscopico-laparoscopic) for a pancreatic pseudocyst by the use of a single intragastric trocar, total laparoscopic duodenopancreatectomy with spleen vessel preserving, total laparoscopic cephalic duodenopancreatectomy.

In concern with her didactic career she is part of the Anatomy and Embryology department for 13 years, her current position being assistant professor.

She is author and co-author of over 30 book chapters and author of two books. She published over 50 articles, with a Hirsch index of 14 and a total impact factor over 69.

Adrian Bartoș was born and raised in Suceava, Romania. After finishing the Medical University in Cluj Napoca he became resident in general surgery. He got his diploma in this field and now he is a general surgeon with PhD. in multiorgan resections.

His supraspecialisations are: hepato-bilio-pancreatic surgery, advanced laparoscopic surgery and interventional and diagnostic ultrasound.

As said in Bartoș Dana biography together they have multiple national premiers, beside these ones he also has as national premier the first laparoscopic liver metastasis ablation, the first pancreatic cancer radiofrequency ablation.

He is the main surgeon in more than 3000 surgeries from witch more than 100 cephalic duodenopancreatectomies, more than 80 major liver resections, 37 HIPEC procedures.

He is in the editorial board of many international journals, author and co-author of over 32 articles, 40 book chapters and editor of three books.

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Chapter 01

Thoracic Wall

Szabo Bianca, Bartoș Adrian, Bartoș Dana

Corresponding Author and Coordinator of the chapter:
Bartoș Dana

Questionnaire

1. The boundaries of the thoracic inlet are:

a. Posterior the body of the first thoracic vertebra
b. Anterior the superior border of the manubrium of the sternum
c. Posterior the spinous process of the first thoracic vertebra
d. Anterior the xifoid process of the sternum
e. Lateral the medial surface of the first rib

2. The boundaries of the thoracic outlet are:

a. Posterior the body of the seventh thoracic vertebra
b. Posterior the body of the twelfth thoracic vertebra
c. Anterior the xifoid process of the sternum
d. Anterior and lateral the joined cartilage of the seventh to twelve ribs
e. Lateral the medial surface of the seventh rib

3. The intrinsic muscles of the thorax are:

a. Transversus thoracis
b.Serratus anterior
c. Serratus posterior superior
d. Levatores costarum
e. Supracostalis

4. What are the actions of the intrinsic muscles of the thorax?

a. Only depress the ribs
b. Only elevate the ribs
c. Depress and elevate the ribs
d. Their main action is to stiffen the thoracic wall

e. Lateral movements of the thoracic wall

5. The innervation of the intrinsic muscles of the thorax is done by:

a. Posterior rami of the thoracic spinal nerves for all of them
b. Intercostal nerves for all of them
c. Branches of the anterior rami of the thoracic spinal nerves for all of them
d. Branches of the posterior rami of the thoracic spinal nerves for all of them
e. Posterior rami of the thoracic spinal nerves only for levatores costarum

6. What are the characteristics of the intercostals muscles?

a. The external intercostals muscles are thinner then the internal intercostals muscles
b. They are innervated by the lateral thoracic nerve
c. There are twelve pairs that extend from the inferior margin of one rib to the superior margin of the one inferior to it
d. There are eleven pairs that extend from the inferior margin of one rib to the superior margin of the one inferior to it
e. The external intercostals muscles fibbers have a postero-anterior direction while the muscular fibbers of the internal intercostals have an antero-posterior direction

7. What are the attachments of the transversus thoracis muscles?

a. Originates from the posterior surface of lower sternum
b. Insertion on the internal surface of costal cartilages 2–6
c. Origin superior borders of 2nd or 3rd ribs
d. Insertion on the transverse processes of T7–11
e. Insertion on the superior borders of 2nd or 3rd ribs

8. What are the attachments of the serratus posterior superior muscle?

a. Its main point of attachment is on the lateral surface of the first six ribs just lateral to their angles
b. Its main point of attachment is on inferior segment of the nuchal ligament then the spinous processes of the seventh cervical and superior two or three thoracic vertebrae
c. Muscular fibbers have a descending path till the angles of the second-fifth ribs where they attach
d. Muscular fibbers have a descending path till the costal car-

tilages of the second-fifth ribs where they attach
e. The fibbers have an ascending path till the nuchal line where they attach

9. The extrinsic muscles of the thorax are:
a. Serratus posterior
b. Serratus anterior
c. Pectoralis major
d. Trapezius
e. Intercostals

10. What are the attachments of the serratus anterior muscle?
a. Anterior from the external surface and superior border of the first eight to ten ribs
b. Anterior from the first five costal cartilages
c. Lateral and posterior to the lateral border of the scapula
d. Lateral and posterior to the posterior (dorsal) surface of the scapula
e. Lateral and posterior to the medial border of the scapula

11. The innervation of the serratus anterior muscle is done by:
a. Medial pectoral nerve
b. Lateral pectoral nerve
c. Long thoracic nerve
d. Axillary nerve
e. Musculocutaneous nerve

12. When does 'winging' of the scapula happen?
a. When the serratus anterior muscle is very contracted
b. When the serratus anterior muscle is paralysed
c. When the pectoralis major muscle is very contracted
d. When the pectoralis minor muscle is very contracted
e. When the pectoralis major muscle is paralysed

13. What are the attachments of the trapezius muscle?
a. Superior it attaches to the medial third of the superior nuchal line of the parietal bone
b. Superior it attaches to the medial third of the superior nuchal line of the occipital bone
c. Superior it attaches to the spinous processes of the vertebras C7 till T12
d. Medial it attaches to the spinous processes of the vertebras C7 till T12
e. Inferior on the lateral surface of the ribs

14. The innervation of the trapezius muscle is done by:
a. Vagus nerve
b. Intercostal nerves
c. Branches from the posterior rami of C3 and C4
d. Accessory nerve

e. Branches from the anterior rami of C3 and C4

15. What are the attachments of the pectoralis major muscle?

a. Superior it attaches at the level of the medial half of the anterior surface of the clavicle
b. Superior it attaches at the level of the acromion process of the scapula
c. Medial it attaches at the level of the first seven costal cartilages
d. Lateral it attaches at the level of the lateral lip of the intertubercular sulcus of the humerus
e. Lateral it attaches at the level of the medial lip of the intertubercular sulcus of the humerus

16. The innervation of the pectoralis major muscle is done by:

a. Long thoracic nerve
b. Lateral pectoral nerve
c. Intercostal nerves
d. Accessory nerve
e. Medial pectoral nerve

17. What are the attachments of the pectoralis minor muscle?

a. Medial can attach on the superior margins and lateral surfaces of the third, fourth and fifth ribs
b. Medial can attach on the superior margins and lateral surfaces of the second, third and fourth ribs
c. Lateral at the level of acromion process of the scapula
d. Lateral at the level of coracoid process of the scapula
e. Lateral at the level of the spine of the scapula

18. The relations of the pectoralis minor muscle are:

a. Posterior with pectoralis major muscle
b. Lateral with the lateral pectoral nerve
c. Posterior with the lateral pectoral nerve
d. Anterior with the lateral pectoral nerve
e. Posterior with serratus anterior muscle

19. The relations of the pectoralis minor muscle are:

a. Anterior with pectoralis major muscle
b. Lateral with the external intercostal muscles
c. Posterior with the axilla
d. Anterior with the lateral pectoral nerve
e. Posterior with the brachial plexus

20. The innervation of the pectoralis minor muscle is done by:

a. Branches of the medial pectoral nerve
b. Branches of the lateral pectoral nerve

c. Vagus nerve
d. Intercostal nerves
e. Accessory nerve

21. The manubrium of the sternum has the following features:
a. Jugular notch located on the inferior border, median located
b. Clavicular notches located on the superior border, lateral to the jugular notch
c. Costal facets for the articulation with the first three ribs
d. Costal facet for the articulation with the first rib and a demifacet for the articulation with the second rib
e. Only the first costo-sternal articulation is a fibrous synarthrosis

22. The body of the sternum has the following features:
a. The junction between the body and the xiphoid process, the Louis angle
b. On the lateral border, there are four articulated facets for the second till the fifth rib
c. On the lateral border, there are four articulated facets for the third till the sixth rib and a demifacet for articulation with the second rib
d. The junction between the manubrium and the body, the Louis angle
e. On the lateral border, inferiorly there is the articulation with the seventh rib

23. What muscles attach on the sternum?
a. Pectoralis minor
b. Pectoralis major
c. Anterior scalene muscle
d. Transversus thoracis
e. The aponeuroses of internal oblique

24. What are the features of the first rib?
a. It has a superior and inferior surface
b. It has a superior and inferior border
c. The superior surface is marked by two grooves
d. On the superior border there is a tubercle, scalene tubercle
e. Through the groove located anterior to the scalene tubercle travels the subclavian vein

25. What are the features of a typical rib?
a. Concave surface facing laterally
b. Convex surface facing laterally
c. The head of the rib is located at the level of the sternal end
d. The neck of the rib is located at the level of the vertebral end
e. On the inferior border, located medial to it there is a groove for the intercostal bundle

Answers

1. a, b
2. b, c
3. a, c
4. c, d
5. b, c
6. d, e
7. a, b
8. b, c
9. b, c, d
10. a, e
11. c
12. b
13. b, d
14. d, e
15. a, c, d
16. b, e
17. a, b, d
18. d, e
19. a, c, e
20. a, b
21. a, d, e
22. c, d, e
23. b, d, e
24. a, c, e
25. b, d, e

Chapter 02

Abdomino-Pelvic Wall and Diaphragm

Bartoș Dana, Breazu Caius, Bartoș Adrian

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Bartoș Adrian

Questionnaire

1. What is the lumbar attachment of the diaphragm composed of?
a. Two aponeurotic arches: medial and lateral
b. Two arcuate ligaments: medial (is situated superior to the quadratus lumborum) and lateral (is situated superior to the psoas major)
c. Two crura or pillars
d. One wide, compact aponeurotic attachment
e. Only the two aponeurotic arches: medial and lateral

2. Name the features of the diaphragmatic central tendon:
a. Its center is formed by four strong diagonal bands
b. It has a trifoliate shape
c. It has a bifoliate shape
d. The hiatus for the passage of the inferior vena cava is located in this area
e. The hiatus for the passage of the aorta is located in this area

3. Name the diaphragmatic apertures:
a. Thoracic duct opening
b. Aortic opening
c. Splanchnic nerves opening
d. Inferior vena cava opening
e. Oesophagus opening

4. When the diaphragm contracts, does it affect the aorta?
a. Yes, because the aorta passes through the aortic hiatus when entering the abdomen so, the diaphragmatic muscle will constrict the hiatus
b. Yes, because the aorta passes through the aortic hiatus which

is formed by the diaphragm on one side and the vertebral column on other side, the contractions of the muscle will push the aorta towards the vertebral column and minimize the diameter of the aorta
c. No, because the aorta passes through the aortic hiatus, which is a tendinous one, not muscular, and it's located posterior to the xifoid process of the sternum
d. No, because the aorta has nothing to do with the diaphragm
e. No, because the aortic hiatus is located between the median arcuate ligament anterior, vertebral column posterior and diaphragmatic crura lateral, basically posterior the muscular part of the diaphragm, this way the contractions of the muscle do not affect the aorta

5. What passes through the aortic hiatus of the diaphragm?
a. Aorta
b. Phrenic nerves
c. Thoracic duct
d. Lymphatic trunks
e. Sometimes the azygos vein

6. What passes through the oesophageal hiatus of the diaphragm?
a. Phrenic nerves
b. Thoracic duct
c. Oesophagus
d. Vagal trunks
e. Gastric nerves

7. The oesophageal diaphragmatic hiatus has the following features:
a. Is located at the level of the twelve thoracic vertebra
b. Is located anterior, superior and lateral to the aortic hiatus
c. There is a distinct continuity between the oesophageal wall and the muscular fibres that form the hiatus
d. There is a loose connecting tissue between the inferior part of the oesophagus and the hiatus that permits movement of the organ when swallowing and ventilating
e. The only organ that passes through the oesophageal diaphragmatic hiatus is the oesophagus

8. The arterial supply of the diaphragm is insured by the:
a. Phrenico-oesophageal arteries
b. Superior and inferior phrenic arteries
c. Pericardiacophrenic and musculophrenic arteries
d. Phrenico-gastric arteries
e. Last five intercostal and subcostal arteries

9. What is the most common origin of the inferior phrenic arteries?
a. Right and left gastric arteries
b. Coeliac trunk
c. Oesophageal arteries
d. Aorta
e. Renal arteries

10. The venous drainage of the superior surface of the diaphragm is ensured by:
a. Superior right phrenic vein
b. Superior left phrenic vein
c. Tributaries of the musculophrenic veins
d. Tributaries of the pericardiacophrenic veins
e. Tributaries of the gastric veins

11. The innervation of the diaphragm is done by the:
a. Phrenic nerves
b. Vagus nerves
c. Lower six or seven intercostal nerves
d. Recurrent laryngeal nerves
e. Splanchnic nerve

12. What are the attachments of the external oblique muscle?
a. Origin on the external surfaces of 5th– 12th ribs
b. Insertion from superior to inferior-lateral: linea alba, pubic tubercle and anterior half of iliac crest
c. Origin on the thoracolumbar fascia, anterior two thirds of iliac crest
d. Insertion on the external surfaces of 10th– 12th ribs
e. Insertion on the xiphoid process and 5th– 7th costal cartilages

13. What are the attachments of the internal oblique muscle?
a. Origin on the thoracolumbar fascia, anterior two thirds of iliac crest, iliopectineal arch (lateral two- thirds of the inguinal ligament)
b. Insertion on the inferior borders of 10th–12th ribs, linea alba
c. Origin on the inner surfaces of 7th– 12th ribs
d. Insertion on the xiphoid process and 7th– 12th costal cartilages
e. Origin on the external surfaces of 7th– 12th ribs

14. The anterior wall of the inguinal canal is formed by the:
a. Linea alba
b. Rectus abdominis muscle
c. Transversus abdominis muscle
d. Internal oblique
e. Aponeurosis of external oblique

15. The posterior wall of the inguinal canal it's form by the:
a. The conjoint tendon

b. The transversalis fascia
c. Rectus abdominis muscle
d. External oblique
e. Peritoneum

16. What passes through the inguinal canal in man:
a. Spermatic cord
b. Round ligament
c. Ilioinguinal nerve
d. Iliohypogastric nerve
e. Femoral artery

17. What passes through the inguinal canal in women:
a. Inferior epigastric vessels
b. Ovarian arteries
c. Ilioinguinal nerve
d. Femoral vein
e. Round ligament

18. What is the linea alba?
a. The aponeurosis of external oblique
b. A tendinous strap that is located between the xiphoid process and pubic symphysis
c. A junction of fibers from the aponeurosis of external oblique, internal oblique and transversus abdominis muscle
d. A junction of fibers from the aponeurosis of external oblique, internal oblique and rectus abdominis muscle
e. A junction of fibers from the aponeurosis of external oblique, internal oblique, transversus abdominis muscle and rectus abdominis muscle

19. A patient has a very strong pain just inferior to the xifoid process, that is the name of that area?
a. Epigastrium
b. Hypochondrium
c. Umbilical
d. Lumbar
e. Hypogastrium

20. Which are the landmarks of the inferior border of the abdominal wall?
a. Anterior superior iliac spine
b. Posterior superior iliac spine
c. Greater sciatic notch
d. The inguinal ligament
e. The pubic tubercle and the pubic crest

21. What does linea semilunaris mean?
a. The curved area inferior to the costal ribs
b. Curved fold superior to the pubic symphysis
c. Shallow, curved groove lateral to lateral margin of rectus sheath
d. Curved aponeurosis inferior to the umbilicus
e. Curved aponeurosis superior to the umbilicus

22. What is the posterior rectus sheath made of?

a. Posterior lamina of internal oblique
b. Anterior lamina of internal oblique
c. Posterior laminae of external oblique
d. Posterior laminae of transversus abdominis
e. Anterior laminae of transversus abdominis

23. The inferior epigastric artery it's a branch of the:
a. Femoral artery
b. Internal iliac artery
c. External iliac artery
d. Abdominal aorta
e. Common iliac artery

24. Arterial supply of the rectus abdominis muscle is done by the:
a. Lumbar arteries
b. Internal thoracic
c. Superior epigastric artery
d. Inferior epigastric artery
e. Umbilical artery

25. What nerves pass anterior to the quadratus lumborum muscle?
a. Subcostal
b. Lumbosacral
c. Iliohypogastric
d. Ilioinguinal
e. Genitofemoral

26. Patient has a tumor located at the level of the right flank what muscles may be involved?
a. Rectus abdominis muscle
b. Transversus abdominis muscle
c. Internal oblique
d. External oblique
e. Pyriformis

Answers

1. a, c
2. a, b, d
3. b, c, d, e
4. e
5. a, c, d, e
6. c, d, e
7. b, d
8. b, c, e
9. b, d
10. c, d
11. a, c
12. a, b
13. a, b
14. d, e
15. a, b
16. a, c
17. c, e
18. b, c
19. a
20. a, d, e
21. c
22. a, d, e
23. c
24. c, d
25. a, c, d
26. b, c, d

Chapter 03

Breast

Bartoș Dana, Bartoș Adrian

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Bartoș Adrian

Questionnaire

1. What does the axillary tail of Spence mean?
a. An elongation of the supero-medial quadrant of the breast
b. An elongation of the supero-lateral quadrant of the breast
c. An elongation of the axilla towards the breast
d. A disease
e. An island of tumoral breast tissue located in the axilla

2. What are the relations of the mammillary gland?
a. Posterior it rests on the deep pectoral fascia
b. Posterior it rests on the superficial pectoral fascia
c. Posterior to it is the pectoralis major muscle
d. Posterior to it is the serratus anterior muscle
e. Posterior to it is the pectoralis minor muscle

3. The nipple has the following characteristics:
a. It has a different position at the level of the chest wall (more superior or inferior) depending on the gender and age
b. In women, it changes colour depending on the melanization
c. In man it has more sebaceous and sweat glands then in women
d. As is normal in the rest of the body, even here the sebaceous glands are always associated with hair follicles
e. The skin of the nipple has the same amount of melanocites as the rest of the breast skin

4. The lobes of the breast contain the following features:
a. The terminal lobular unit, the milk secretion unit
b. Glandular tissue

c. Secreting stroma
d. They are distinct areas, that can be distinguished very easy in surgery
e. Connective tissue: loose intralobular and fibrocollagenous interlobular

5. What does Astley Cooper ligaments represent?
a. Fibrous tissue that interconnects the lobes of the breast
b. Fibrous tissue that connects the deep fascia (located posterior to the breast) with the dermis
c. Condensation of connecting tissue, better represented in the superior segment of the breast
d. Condensation of connecting tissue, better represented in the inferior segment of the breast
e. Ligaments that support the surrounding breast tissue

6. The arterial supply of the breast is insured:
a. By branches of the axillary, internal thoracic and intercostal arteries
b. Entirely by branches of axillary artery
c. By perforating branches of the internal thoracic and intercostal arteries
d. By the superior thoracic artery, pectoral branches of thoraco-acromial artery, lateral thoracic artery, subscapular artery
e. By perforating branches of the axillary and subclavian artery

7. Name the main characteristics of the lymphatic drainage of the breast:
a. Most of the lymph collected from the breast will drain through parasternal lymph nodes
b. Lymphatic vessels run parallel with arteries
c. It is the main way of breast cancer spreading
d. Most of the lymph collected from the breast will drain through axillary lymph nodes
e. Most of the lymph collected from the breast will drain through subclavian lymph nodes

8. What type of innervation does the breast have?
a. Both sensory and sympathetic
b. Both sensory and parasympathetic
c. Both parasympathetic and sympathetic
d. Only sympathetic
e. Only parasympathetic

9. Who is controlling the secretion of the breast?
a. Only ovarian hormones
b. Ovarian and hypophysial hormones
c. Only ovarian and hypophysial

hormones
d. Efferent motor fibres
e. Afferent motor fibres

Answers

1. B
2. a, c, d
3. a, b
4. a, b, e
5. b, c
6. a, c, d
7. c, d
8. a
9. b, d

Chapter 04

Mediastinum

Bartoș Adrian, Cioltean Cristian, Bartoș Dana

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Questionnaire

1. Which are the borders of the superior mediastinum?
a. Anterior: the body of the sternum
b. Anterior: the manubrium of the sternum
c. Posterior: the first four thoracic vertebras
d. Posterior: the first two thoracic vertebras
e. Lateral: medial pleura or mediastinal pleura

2. Name the structures located inside the superior mediastinum:
a. Thymus
b. Larynges
c. Trachea
d. Principal bronchi
e. Oesophagus

3. Name the structures located inside the superior mediastinum:
a. Ascending aorta
b. Aortic arch
c. Brachiocephalic trunk
d. Left common carotid artery
e. Right common carotid artery

4. Name the structures located inside the superior mediastinum:
a. Hemiazygos vein on the right side
b. Subclavian arteries
c. Subclavian veins
d. Internal thoracic arteries
e. Internal thoracic veins

5. Name the structures located inside the superior mediastinum:
a. Inferior thyroid arteries
b. Cardiac lymph nodes

c. Inferior thyroid veins
d. Tracheobronchial, paratracheal lymph nodes
e. Phrenic nerve

6. Name the structures located inside the superior mediastinum:
a. Vagus nerve
b. Left recurrent laryngeal nerve
c. Right recurrent laryngeal nerve
d. Brachiocephalic veins
e. Superior vena cava

7. Name the structures located inside the middle mediastinum:
a. Aortic arch
b. Descending aorta
c. Pericardium and heart
d. Ascending aorta
e. Azygos venous arch

8. Name the structures located inside the middle mediastinum:
a. Superior vena cava
b. Inferior vena cava
c. Tracheal bifurcation
d. Main bronchi
e. Aortic arch

9. Name the structures located inside the middle mediastinum:
a. Pulmonary trunk
b. Thymus gland
c. Phrenic nerves
d. Vagus nerves
e. Oesophagus

10. Name the structures located inside the middle mediastinum:
a. Cardiac plexus
b. Tracheo-bronchial lymph nodes
c. Oesophagial plexus
d. Hemiazygos vein
e. Symphatetic plexus

11. Which are the borders of the posterior mediastinum?
a. Anterior tracheal bifurcation
b. Anterior pericardium and ascending aorta
c. Anterior pericardium and pulmonary vessels
d. Posterior the bodies of the fifth to the twelfth thoracic vertebrae
e. Posterior the spinous processes of the fifth to the twelfth thoracic vertebrae

12. Name the structures located inside the posterior mediastinum:
a. Descending thoracic aorta
b. Ascending aorta
c. Aortic arch
d. Oesophagus
e. Trachea

13. Name the structures located inside the posterior mediastinum:
a. Azygos vein on the right side
b. Hemiazygos vein on the right side
c. Thoracic duct
d. Parasympathetic chains on one side and the other of the vertebral column
e. Sympathetic chains

14. Name the structures located inside the posterior mediastinum:
a. Phrenic nerves
b. Cardiac plexus
c. Left recurrent laryngeal nerve
d. Thoracic splanchnic nerves
e. Vagal trunks

15. What are the relationships of the azygos vein:
a. Anterior to the bodies of the inferior eight thoracic vertebrae
b. Anterior to the left posterior intercostal arteries
c. Lateral right to the left sympathetic chain
d. Lateral left to the right greater splanchnic nerve
e. Right lateral to the thoracic duct

16. What is the course of the azygos vein:
a. From the abdomen towards the thorax in passes together with the inferior vena cava through the diaphragmatic hiatus
b. From the abdomen towards the thorax in passes posterior to the right crus of the diaphragm
c. Inside the thorax its located in the posterior mediastinum, on the left side of the vertebral column
d. Inside the thorax its located in the medial mediastinum
e. At the level of the fourth thoracic vertebra it arches and drains inside the superior vena cava

17. Name the most common veins that form the hemiazygos vein:
a. Left lumbar ascending
b. Right lumbar ascending
c. Left subcostal veins
d. Right subcostal veins
e. Intercostal veins

18. What are the relationships of the hemiazygos vein:
a. Posterior to the aorta
b. Anterior or posterior to the thoracic duct
c. Anterior to the oesophagus
d. Anterior to the aorta
e. Lateral to the vertebral column till T9 and then anterior to it

19. Name the structures located inside the anterior mediastinum:
a. Trachea
b. Hearth
c. Internal thoracic vessels
d. Thymus gland
e. Phrenic nerve

20. In what mediastinum are the phrenic nerves located?
a. Superior mediastinum
b. Inferior mediastinum
c. Anterior mediastinum
d. Middle mediastinum
e. Posterior mediastinum

21. From what regions does the thoracic duct collect lymph from?
a. Left part of the head and neck
b. Right upper limb
c. Right lung
d. Abdominal organs
e. A part of the costo-diaphragmatic surface of the liver

22. What are the relationships of the thoracic duct at the level of posterior mediastinum?
a. It passes through the aortic hiatus
b. It passes through the oesophagial hiatus
c. It rests anterior to the vertebral column
d. The azygos vein it's on its right side till the fifth thoracic vertebra
e. At the level of the fifth thoracic vertebra it usually passes posterior-left to the oesophagus and posterior to the left subclavian artery

23. What does the "stellate" ganglion stand for:
a. A ganglionic formation of the fifth cervical and the first thoracic ganglion
b. The cervicothoracic ganglion
c. A ganglionic formation of the first till the forth thoracic ganglion
d. One of the ganglions that form the sympathetic trunk
e. One of the ganglions that form the parasympathetic trunk

24. What kind of fibres form the great splanchnic nerve?
a. Unmyelinated postganglionic efferent fibres
b. Fibres from the ninth to tenth or eleventh thoracic ganglia
c. Myelinated postganglionic efferent and visceral afferent fibres
d. Myelinated preganglionic efferent and visceral afferent fibres
e. Fibres from the fifth to ninth or tenth thoracic ganglia

Answers

1. b, c, e
2. a, c, e
3. b, c, d
4. b, d, e
5. c, d, e
6. a, b, d, e
7. c, d
8. a, b, c, d
9. a, c
10. a, b
11. a, c, d
12. a, d
13. a, c, e
14. d, e
15. a, d, e
16. b, e
17. a, c
18. a, b, e
19. c, d
20. a, b, d
21. a, d, e
22. c, d, e
23. a, b, d
24. d, e

Chapter 05

Lungs and Pleura

Bartoș Adrian, Bartoș Dana

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Questionnaire

1. What are the main surface features of the lung?
a. Two borders
b. Two surfaces
c. Three borders
d. An apex and a base
e. Three surfaces

2. The apex of the lungs can be described as follows:
a. The superior rounded extremity of the lung that extends till the first costal cartilage
b. The superior rounded extremity of the lung that extends above the first costal cartilage
c. The subclavian artery leaves an impression on their anterior surface
d. On the left side, the brachiocephalic vein is located medial to the apex
e. The stellate ganglion is located posterior to them

3. The structures at the level of the left pulmonary hilum are located as follows:
a. Most superior is the principal bronchus
b. Most inferior is the principal bronchus
c. Most inferior is the pulmonary artery
d. Most inferior is the pulmonary vein
e. The middle-positioned structure is the pulmonary vein

4. The structures at the level of the right pulmonary hilum are located as follows:
a. Most superior is the principal bronchus
b. Most inferior is the principal bronchus

c. Most superior is the pulmonary artery
d. Most inferior is the pulmonary vein
e. The middle-positioned structure is the pulmonary vein

5. What are the main features of the right lung?
a. It is structured in two lobes
b. It is structured in three lobes
c. Two fissures are visible on its surface: oblique (separates the inferior from the superior and middle lobes) and horizontal (separated the superior from the middle lobe)
d. Three fissures are visible on its surface
e. The hilum is located on its lateral surface

6. What are the main features of the left lung?
a. It is structured in two lobes
b. It is structured in three lobes
c. It has only one fissure, the horizontal one, it separates the superior from the inferior lobe
d. Two fissures are visible on its surface
e. The hilum is located on its medial surface

7. What are the segments of the inferior left lobe?
a. Superior
b. Posterior basal
c. Lateral basal
d. Inferior lingular
e. Superior lingular

8. What are the segments of the superior left lobe?
a. Medial
b. Lateral
c. Inferior lingular
d. Superior lingular
e. Anterior

9. What are the segments of the superior right lobe?
a. Inferior lingular
b. Superior lingular
c. Posterior
d. Anterior
e. Apical

10. What impressions can we find on the mediastinal surface of the left lung
a. The groove of the arch of the aorta
b. Cardiac impression
c. The groove for the subclavian artery
d. The groove for the brachiocephalic vein
e. The groove for the common carotid

11. What impressions can we find on the mediastinal surface of the right lung
a. The groove of the azygos vein arch
b. The groove for the subclavian artery
c. Cardiac impression
d. The groove of the oesophagus
e. The groove for superior vena cava

12. What does pleura represent?
a. A serous membrane that covers the lung, visceral organs, diaphragm and inner thoracic wall
b. A fibrous membrane that covers the lung, visceral organs, diaphragm and inner thoracic wall
c. The visceral pleura overlaps the mediastinal organs and the parietal pleura the surfaces of the lungs
d. The visceral pleura follows the lobar fissures of the lungs
e. The visceral pleura continues with the parietal one and form an invaginated sac

13. What is pleural cavity?
a. A virtual space between the inner thoracic wall and pleura
b. Being a virtual space is an empty space
c. A virtual space filled up with a large quantity of fluid
d. A virtual space filled up with a small quantity of fluid
e. The thoracic cavity has two pleural sacs

14. Name the different regions of the parietal pleura:
a. Costovertebral pleura
b. Sternal pleura
c. Diaphragmatic pleura
d. Cervical pleura
e. Mediastinal pleura

15. The right pulmonary artery has the following features:
a. Its origin is posterior to the superior vena cava
b. It bifurcates posterior to the superior vena cava
c. It divides posterior to the superior vena cava into three branches for the three lobes of the right lung
d. Because of its proximity with the caval system it's a very good partner for anastomosis, when needed
e. After it originated from the pulmonary trunk it passes anterior to the superior vena cava to rich the pulmonary hila

16. The left pulmonary artery has the following features:

a. Its origin is at the level of the arch of the aorta
b. It has an ascending path posterior to the descending aorta
c. It has a descending path anterior to the descending aorta
d. It bifurcates into two branches for the two lobes of the left lung
e. It passes anterior to the main left bronchi

17. Name the characteristics of the right pulmonary veins:
a. Three main pulmonary veins exit the pulmonary parenchyma, each from the corresponding lobe, the superior and middle one usually join and form a common trunk
b. Usually two main veins exit the hila of the right lung and drain blood inside the left atrium
c. Usually two main veins exit the hila of the right lung and drain blood inside the right atrium
d. The right superior pulmonary vein is located anterior and superior in regard with the right pulmonary artery
e. At the level of the hila the right pulmonary vein is the most inferior structure

Answers

1. b, c, d
2. b, d, e
3. a, d
4. c, d
5. b, c
6. a, e
7. a, b, c
8. c, d, e
9. c, d, e
10. a, b, c, d
11. a, c, d
12. a, d
13. d, e
14. a, c, d, e
15. b, d
16. a, c, e
17. a, b, e

Chapter 06

Trachea and Bronchi

Bartoș Adrian, Bartoș Dana

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Questionnaire

1. The trachea has the following features:
a. It is form entirely by cartilaginous tissue
b. It is formed by cartilaginous and fibromuscular tissue
c. It is formed by 16-20 cartilaginous complete rings
d. It's posterior wall it's made by fibromuscular tissue
e. It is a fixed organ and does not allow movement

2. What are the antero-posterior relationships of the cervical part of the trachea?
a. Anterior it is covered by the sternothyroid and thyrohyoid muscles
b. Anterior it is covered by the sternohyoid and sternothyroid muscles
c. Anterior it is covered by the superficial and deep cervical fasciae of the neck
d. Posterior it's in relationship with the oesophagus
e. Posterior it's in relationship with the vertebral column

3. What are the lateral relationships of the cervical part of the trachea?
a. Vagus nerves
b. Phrenic nerves
c. Recurrent laryngeal nerves
d. Common carotid artery
e. Superior thyroid artery's

4. In which mediastinum is the thoracic part of the trachea located?
a. Superior
b. Medial
c. Superior and medial

d. Anterior
e. Superior and anterior

5. What are the anterior relationships of the thoracic part of the trachea?
a. The inferior thyroid arteries
b. The inferior thyroid veins
c. The thymic cells
d. Right common carotid artery
e. Left brachiocephalic vein

6. Name the structures that are located anterior to the thoracic part of the trachea?
a. Left common carotid artery
b. Left subclavian artery
c. Brachiocephalic trunk
d. Deep cardiac plexus
e. Oesophagus

7. What are the right lateral relationships of the thoracic part of the trachea?
a. The sternocostal surface of the right lung
b. Right vagus nerve
c. Superior vena cava
d. Hemiazygos vein
e. Azygos vein

8. Name the structures that are located right lateral to the thoracic part of the trachea?
a. Right brachiocephalic vein
b. The superior part of the mediastinal surface of the right lung covered by its pleura
c. Right phrenic nerve
d. Right recurrent laryngeal nerve
e. Right common carotid

9. What are the left lateral relationships of the thoracic part of the trachea?
a. Arch of the aorta
b. Left common carotid
c. Left vagus nerve
d. Subclavian artery
e. Left recurrent laryngeal nerve

10. At what level does the trachea split into the main bronchi?
a. At the level of the transvers plane that passes through the body of the sixth cervical vertebra
b. At the level of the transvers plane that passes through the body of the sixth thoracic vertebra
c. At the level of the medial part of the body of the sternum
d. At the level of the transvers plane that passes through the superior thoracic aperture
e. Posterior to the sternal angle

11. Name what makes the right bronchi different from the left one:
a. Is shorter and wider
b. Is more horizontal
c. The azygos vein arches around it
d. The right pulmonary artery is situated anterior and inferior to it
e. The right laryngeal nerve arches around it

12. Name what makes the left bronchi different from the right one:
a. Is longer and wider
b. It passes inferior to the aortic arch
c. It passes anterior to the oesophagus and descending aorta
d. The left pulmonary artery is situated anterior and superior to it
e. Is wider and more horizontal

13. Name the characteristics of a bronchopulmonary segment:
a. It is separately supplied by a segmental bronchus, a branch of the pulmonary artery and an intrasegmental tributary vein of a pulmonary vein
b. It has a polygonal shape
c. It is drained by an intersegmental tributary vein
d. It can be individually resected
e. It has a pyramidal shape

14. If a child inhales be mistake a foreign body, in which bronchi is it most likely to get stuck?
a. Right superior lobar bronchus
b. Left superior lobar bronchus
c. Left inferior bronchus
d. Principal right bronchus
e. Principal left bronchus

15. The trachea is arterial supplied by the:
a. Branches of superior thyroid arteries
b. Branches of inferior thyroid arteries
c. Branches of cardiac arteries
d. Branches of pulmonary arteries
e. Branches of bronchial arteries

16. The innervation of the trachea and bronchi is done by branches of the:
a. Vagus nerves
b. Recurrent laryngeal nerves
c. Cardiac nerves
d. Sympathetic trunk
e. Phrenic nerves

Answers

1. b, d
2. b, c, d
3. c, d
4. a
5. b, c, e
6. a, c, d
7. b, c, e
8. a, b
9. a, b, d, e
10. a, e
11. a, c, d
12. b, c, d
13. c, d, e
14. d
15. b, e
16. a, b, d

Chapter 07

Heart and Pericardium

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Questionnaire

1. What structures can we find at the level of the right atrium?
a. Opening of the coronary sinus
b. Opening of the aorta
c. Opening of the inferior vena cava
d. Papillary muscles
e. Pectinate muscles

2. What structures can we find at the level of the right ventricle?
a. Chordae tendineae
b. Pectinate muscles
c. Moderator band
d. Papillary muscles
e. Opening of the aorta

3. What structures can we find at the level of the left atrium?
a. Opening of the pulmonary veins
b. Opening of the coronary sinus
c. Opening of the inferior vena cava
d. Fossa ovalis
e. Papillary muscles

4. What structure scan we find at the level of the left ventricle?
a. Trabeculae carnae
b. Opening of the pulmonary trunk
c. Opening of the aorta
d. Papillary muscles
e. Pectinate muscles

5. At the level of the wall of which structure the miocardic muscle it's better represented?
a. Right atrium
b. Left atrium
c. Right ventricle
d. Left ventricle
e. Its represented in the same way at all levels

6. Incisura apicis cordis represents:
a. A notch at the level of the apex of the heart
b. A notch at the level of the lateral border of the heart
c. A notch that marks the anterior interventricular groove continuing with the posterior one
d. A notch located to the left of the apex of the heart
e. A notch located to the right of the apex heart

7. What structures can we found at the level of the anterior wall of the right atrium?
a. Tricuspid valve
b. Bicuspid valve
c. Mitral valve
d. Fossa ovalis
e. Coronary sinus

8. The mitral valve it's located between the following chambers:
a. Between the right atrium and the right ventricle
b. Between the left atrium and the left ventricle
c. Between the right atrium and the left atrium
d. Between left ventricle and right ventricle
e. Between the left ventricle and the aorta

9. Which of the following structures have three cuspid valves?
a. The valve between the right atrium and the right ventricle
b. The valve between the left atrium and left ventricle
c. Mitral valve
d. Tricuspid valve
e. Aortic valve

10. What happens in the ventricular systole?
a. The blood is pumped from the right ventricle into the pulmonary trunk
b. The blood is pumped from the right ventricle into the aorta
c. The blood is pumped from the atria to the ventricle
d. The blood is pumped from the left ventricle into the pulmonary trunk
e. The blood is pumped from the left ventricle into the aorta

11. Which are the terminal branches of the left coronary artery?
a. Anterior interventricular artery
b. Oblique left artery
c. Anterior interatrial artery
d. Marginal artery
e. Circumflex artery

12. The coronary sinus has the following attributes:
a. It opens at the level of the left atrium
b. It opens at the level of the right atrium
c. Is located on the posterior surface in the coronary sulcus
d. The middle cardiac vein is draining into the coronary sinus
e. It receives blood from the coronary arteries

13. Name the relationships of the arch of the aorta:
a. Inferiorly - the pulmonary trunk
b. Posteriorly – the trachea
c. Anteriorly - the thoracic duct
d. Posteriorly - phrenic nerve
e. Anteriorly – phrenic nerve

14. Whitch are the direct branches of the arch of the aorta?
a. Right brachiocephalic trunk
b. Left brachiocephalic trunk
c. Right common carotid
d. Left subclavian artery
e. Celiac trunk

15. Name the characteristics of the coronary arteries:
a. There are two main coronary arteries: left coronary artery and right coronary artery
b. Arise from the left and right aortic sinuses within the aorta
c. They supply with blood the myocardium
d. Both of them give off branches
e. Arise from the pulmonary trunk

16. The pericardium has the following attributes:
a. Protects the heart
b. The superficial layer is named serous pericardium
c. Prevents the overfilling of the heart with blood
d. Covers only the heart, without the roots of the great vessels
e. The fibrous pericardium has two layers, the parietal and visceral one

17. The projection of the apex of the heart on the thoracic wall:
a. 4th left intercostal space midclavicular line
b. 5th left intercostal space midclavicular line
c. 5th left intercostal space anterior axillary line
d. 4th left intercostal space middle axillary line
e. 4th left intercostal space anterior axillary line

18. Name the branches of the left circumflex artery:
a. Anterior interventricular artery

b. Oblique left artery
c. Anterior interatrial artery
d. Arterial arteries
e. Marginal artery

19. Name the structures that link the cusps of the mitral valve to the heart walls:
a. Papillary muscles
b. Chordae tendineae
c. Trabecular muscles
d. Nothing links the cusps to the wall
e. A thin membrane

20. The arterial supply of the heart it's given by the?
a. Right ventricular artery
b. Right interventricular artery
c. Anterior interventricular artery
d. Right marginal artery
e. Atrial arteries

21. The venous supply of the heart it's given by the?
a. Great cardiac vein
b. Left ventricular vain
c. Coronary sinus
d. Posterior interventricular vein
e. Right coronary vein

22. Name the relationships of the left coronary artery:
a. Anterior to the pulmonary trunk
b. Posterior to the pulmonary trunk
c. Located inside the interventricular septum
d. Located inside the atrioventricular sulcus
e. Originates superior to the medial aortic cusp

23. Which are the branches of the left coronary artery?
a. Marginal artery
b. Left circumflex artery
c. Posterior interventricular artery
d. Anterior interventricular artery
e. Atrial branches

24. Which is the main artery that vascularize the apex of the heart?
a. Posterior interventricular artery
b. Marginal artery
c. Circumflex artery
d. Anterior interventricular artery
e. Infundibular artery

25. What arteries vascularize the interventricular septum?
a. Marginal artery
b. Circumflex artery
c. Anterior interventricular artery
d. Left anterior descending artery
e. Posterior interventricular artery

Answers

1. a, c, e
2. a, c, d
3. a, d
4. a, c, d
5. d
6. c, e
7. a
8. b
9. a, d, e
10. a, e
11. a, e
12. b, c, d
13. a, b, e
14. a, d
15. a, b, c, d
16. a, c
17. b
18. d, e
19. a, b
20. c, d, e
21. a, c
22. b, e
23. b, d
24. d
25. c, e

Chapter 08

Esophagus and Vagus Nerve

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Questionnaire

1. What are the relationships of the esophagus inside the thoracic cavity?
a. Medial to the vagus nerve
b. Posterior to the vagus nerve
c. Lateral to the right from the thoracic aorta
d. Posterior to the right pulmonary artery
e. Anterior to the left principal bronchus

2. In which mediastinum is the oesophagus located?
a. Inferior
b. Superior
c. Middle
d. Posterior
e. Anterior

3. Which nerve it's traveling along the oesophagus in the thoracic cavity?
a. Phrenic nerve
b. Long thoracic nerve
c. Internal thoracic nerve
d. Vagus nerve
e. Greater splanchnic nerve

4. The layers that form the walls of the oesophagus are:
a. Adventitia
b. Serosa
c. Muscularis-mucosa
d. Mucosa
e. Muscularis externa

5. Name of the relationships that the oesophagus has at cervical level:
a. Trachea anterior to it
b. Trachea posterior to it
c. Pharynges anterior to it
d. Vagus nerve lateral to it
e. Phrenic nerves anterior and posterior to it

6. The parasympathetic innervation of the oesophagus is done by the?
a. Recurrent laryngeal nerves
b. Vagus nerves
c. Phrenic nerves
d. Postganglionic fibres of the upper 4–6 thoracic spinal cord segments
e. Greater splanchnic nerve

7. The arterial supply of the oesophagus is done by the?
a. Branches of the inferior thyroid artery
b. Bronchial branches of the thoracic aorta
c. Oesophageal branches of the thoracic aorta
d. Branches of the left phrenic artery
e. Branches of the right gastric artery

8. The relationship of the cervical oesophagus:
a. Posterior to it is the trachea
b. Thoracic duct ascends on its right side
c. Lateral to it are the two recurrent laryngeal nerves
d. Lateral to it are the two common carotid arteries
e. Lateral, right is the azygos vein

9. The relationships of the oesophagus inside the posterior mediastinum are:
a. Anterior, left of the azygos vein
b. Anterior, left of the hemiazygos vein
c. Lateral, right to the thoracic duct
d. Lateral, right to the left recurrent laryngeal nerve
e. Anterior, right to the thoracic duct

10. What type of innervation does the vagus nerve give?
a. Sensory
b. Motor
c. Only parasympathetic
d. Sympathethic
e. Only motor

11. Which of the following statements about the oesophagus are true?
a. It is connecting the trachea with the stomach
b. It is connecting the pharynx with the stomach
c. It is a muscular organ
d. It is located anterior to the trachea
e. Has relationships with the thoracic duct

12. The origin of the oesophagus is located at the:
a. Inferior border of the cricoid cartilage

b. Bifurcation of the trachea
c. Larynx origin
d. Anterior mediastinum
e. Level of the eso-cardiac notch

13. Which of the following statements about the oesophagus are true?
a. It has an abdominal portion
b. It has only a thoracic portion
c. It is a hollow organ
d. Unpaired organ
e. It has only one sphincter

14. The relationships of the thoracic oesophagus are:
a. Trachea - anterior
b. Trachea – posterior
c. Aortic arch - to the right
d. Left principal bronchia – anterior
e. Thoracic duct – posterior

15. The relationships of the abdominal oesophagus are:
a. Posterior – left lobe of the liver
b. Anterior – right lobe of the liver
c. Posterior – aorta
d. Lateral to the left – the stomach
e. Posterior – azygos vein

16. The arterial supply of the oesophagus is done by:
a. Branches of the inferior thyroid artery
b. Branches of the right gastric artery
c. Braches of the left gastric artery
d. Branches of the short gastric arteries
e. Braches from the bronchial arteries

17. Which of the following organs are innervated by the vagus nerve?
a. Oesophagus
b. Stomach
c. Sigma
d. Small intestine
e. Only the oesophagus

18. Which of the following statements about the vagus nerves are true?
a. In the thorax, the right vagus nerve forms the posterior vagal trunk
b. In the thorax, the right vagus nerve forms the anterior vagal trunk
c. In the thorax, the left vagus nerve forms the anterior vagal trunk
d. In the thorax, the left vagus nerve forms the posterior vagal trunk
e. Recurrent laryngeal nerve is a branch from the vagus nerve

19. Left vagus nerve:
a. Forms posterior oesophageal

plexus
b. Passes posterior to the left lung root
c. Forms posterior oesophageal plexus
d. Forms anterior vagal trunk
e. Forms posterior vagal trunk

20. Relationships of the left vagus nerve are:
a. Anterior – aortic arch
b. Anterior- left common artery
c. Anterior- brachiocephalic vein
d. Anterior – left pulmonary hilum
e. Posterolaterally – left phrenic nerve

21. Relationships of the right vagus nerve are:
a. Anterior – right brachiocephalic vein
b. Anterolaterally- superior vena cava
c. Lateral to the right – right lung
d. Posterior- the right main bronchia
e. Posterior – right pulmonary hilum

22. Right vagus nerve:
a. Forms the anterior oesophageal plexus
b. Forms the posterior oesophageal plexus
c. It descends from the neck to the anterior mediastinum
d. It descends from the neck to the superior mediastinum
e. Crosses the aortic arch

23. The organs innervated by the vagus nerve are:
a. Heart
b. Larynx
c. Timus gland
d. Oesohagus
e. Pharynx

24. Functions of the vagus nerve:
a. Sensory function
b. Motor function
c. Increase the heart rate
d. Slows the heart rate
e. Only motor function

25. Which of the following statements about the vagus nerve, in its thorax portion are true?
a. The left and the right vagus nerve descends through the superior mediastinum
b. The left and the right vagus nerve form the anterior oesophageal plexus
c. They enter abdomen by passing through the diaphragmatic aortic hiatus
d. They enter abdomen by passing through the vena cava aperture
e. They enter abdomen by pass-

ing through the oesophageal aperture

Answers

1. a, c, d
2. a, b. d
3. d
4. d, e
5. a, d
6. a, b
7. a, b, c, d
8. c, d
9. a, e
10. a, b
11. b, c
12. a
13. a, c, d
14. a, d, e
15. c, d
16. c, d
17. a, b, d
18. b, c, e
19. b, d
20. b, c, d
21. a, b, c
22. b, d
23. a, b, d, e
24. a, b, d
25. a, e

Chapter 09

Stomach

Iancu Ioana, Bartoș Dana, Bartoș Adrian

Corresponding Author and Coordinator of the chapter: Bartoș Adrian

Questionnaire

1. A patient presents pain at the level of the epigastrium. A computer tomography is done and it reveals a tumour located posterior to the stomach. What may be the origin of this tumour?
a. Duodenal
b. Pancreatic
c. Jejunal
d. Colonic
e. Hepatic

2. A patient presents himself into the emergency room with an acute pain at the level of the epigastrium. Radiology imaging reveals air inside of abdominal cavity. What organ may be involved, perforated?
a. Liver
b. Pancreas
c. Stomach
d. Sigmoid colon
e. Appendix

3. Which of the following affirmations about the relationships of the stomach are true?
a. Anteriorly, it has relations with the transverse colon
b. Anteriorly, it has relations with the right lobe of liver
c. Posteriorly, it has relations with the pancreas
d. Posteriorly, it has relations with the right pole of the kidney
e. Posteriorly, it has relations with the celiac plexus through the omental bursa

4. Which of the following affirmations about the left gastric artery are true?
a. Arises from the celiac trunk
b. It has an ascendant course to the esophageal hiatus

c. Descends along the greater curvature
d. It gives off esophageal branches
e. It usually arises from the proper hepatic artery

5. Arterial supply of the stomach:
a. Right gastric artery – origin from the celiac trunk
b. Right gastric artery – variable origin, predominantly from the proper hepatic artery
c. Left gastric artery –origin from the celiac trunk
d. Formed by 1 arcade and short gastric vessels
e. Left gastro-epiploic artery-origin from gastro-duodenal artery

6. Right gastric artery:
a. Origin from the celiac trunk
b. Usually arises, from the proper hepatic artery
c. It is anastomosing with the right gastro-epiploic artery
d. It is distributed to the right portion of the lesser curvature
e. It is distributed to the right portion of the greater curvature

7. Left gastro-epiploic artery:
a. Arises from the splenic artery
b. Origin as a terminal branch of the gastro-duodenal artery
c. Origin from the celiac trunk
d. Forms an anastomosis with the right gastro-epiploic artery at the level of the greater curvature of the stomach
e. It gives off gastric branches to the fundus of the stomach

8. Right gastro-epiploic artery:
a. Origin from the splenic artery
b. Arises from the gastroduodenal artery
c. Origin from the celiac trunk
d. Forms an anastomosis with the right gastro-epiploic artery at the level of the greater curvature of the stomach
e. It gives off branches to the antrum

9. About the internal configuration of the stomach the following are true:
a. The stomach has three tunics: serosa, muscularis, mucosa
b. The stomach has four tunics: serosa, muscularis, submucosa, mucosa
c. The muscularis has three layers from outside to inside: circular, oblique, longitudinal
d. The muscularis has three layers from outside to inside: longitudinal, oblique, circular
e. Mucosa represents the main morphological and functional gastric component

10. Which of the following, are parts of the stomach?

a. Fundus
b. Cardia
c. Pyloric part
d. Ampulla
e. Body

11. Which of the following affirmations about the stomach are true?
a. It is located in the right hipocondrum, epigastrum and umbilical regions
b. It is an intraperitoneal organ
c. It is lying between the esophagus and the jejunum
d. It's the widest part of the digestive system
e. It's situated in the supramesocolic region

12. Lesser curvature
a. It has a convexity that is facing inferior to the left
b. It's located between the cardiac and pyloric orifices
c. It represents the insertion place for gastro-splenic ligament
d. It represents the insertions place for gastro-colic ligament
e. It continuous the right margin of the esophagus

13. Greater curvature
a. It gives attachment to the greater omentum
b. It represents the insertion place for the gastro-hepatic ligament
c. It continuous the left part of the esophagus
d. It starts from the cardiac notch
e. It represents the insertion place for gastro-phrenic ligament

14. About the pyloric orifice, the following are true:
a. It represents the open between the esophagus and the stomach
b. It is formed especially of longitudinal muscles
c. It's typically situated a few centimeters right of the midline when the stomach is full
d. It represents the open between the stomach and the duodenum
e. It continuous with the antrum

15. Anteriorly, the stomach has relationships with:
a. Right lobe of the liver
b. Left lobe of the liver
c. Abdominal wall
d. Greater omentum
e. Diaphragm

16. Posteriorly, the stomach has relationships with:
a. The pancreas
b. The left lobe of the liver
c. The right pole of the kidney
d. The greater omentum
e. Diaphragm

17. About the venous supply of the stomach the following are true:
a. Accompanying the arterial system
b. Left gastric vein drains into the splenic vein
c. The short gastric veins drain into the splenic vein
d. Left gastric vein drains into the portal vein
e. At the eso-gastric junction there is a significant anastomosis between the left gastric vein tributaries (port system) and Azygos vein tributaries (cave system)

18. About the venous supply of the stomach the following are true:
a. Right gastric vein drains into the portal vein
b. Short gastric veins –splenic veins tributaries
c. Right gastro-epiploc vein- splenic vein tributary
d. Right gastro-epiploic vein- superior mesenteric vein tributary
e. Left gasto-epiploic vein- usually is anastomoses with the superior branch of the right colic vein and forms the Henle venous trunk

19. The relationships of the stomach are:
a. Superior hepato-gastric ligament and gastro-phrenic ligament
b. Inferior hepato-gastric ligament and gastro-phrenic ligament
c. Inferior gastric-colic ligament and gastro-splenic ligament
d. Superior gastric- colic ligament and gastro-splenic ligament
e. Posterior left lobe of the river

20. About the lymphatic drainage of the stomach the following are true:
a. Anatomically speaking there are four nodal stations: the left gastric artery lymph nodes group, the pancreato-splenic lymph node group, the right gastro-epiploic lymph node group, the hepato-pyloric-gastric lymph node group
b. Anatomically speaking there are three nodal stations: the left gastric artery lymph nodes group, the pancreato-splenic lymph node group, the right gastro-epiploic lymph node group
c. The right gastro- epiploic lymph node group drains the fornix and the body of the stomach
d. The right gastro-epiploic lymph node group drains the

distal half of the greater curvature
e. The pancreatico-gastric lymph node group drains the fornix and the body of the stomach

21. The lesser curvature:
a. It represents the insertion place for the greater omentum
b. It represents the insertion place for the lesser omentum
c. It has relationships with the caudate lobe of the liver
d. It has relationships with the transverse colon
e. It represents the insertions place for the gastro-colic ligament

22. Which of the following affirmations about the stomach are true?
a. It has two margins
b. The cardial orifice represents its distal boundary
c. The pyloric orifice represents its distal boundary
d. The lesser curvature is concave
e. The cardial orifice represents its proximal boundary

23. Which of the following affirmations about the stomach are true?
a. The fundus it has relationships through the diaphragm with the left lung
b. The lateral portion of the fundus has relationships with the spleen
c. The pyloric orifice, it represents the open between the esophagus and the stomach
d. It is an extraperitoneal organ
e. Composed of two walls: anterior and posterior

24. Which of the following are true about the vascular supply of the stomach?
a. It is provided by the right gastric artery, origin from the celiac trunk
b. It is provided by the left gastric vein, origin from the proper hepatic artery
c. The right and the left gastric vein drain into the hepatic portal vein
d. The right gastro-epiploic vein drains into the superior mesenteric vein
e. The short gastric veins drain into the superior mesenteric vein

25. The short gastric arteries:
a. Arise from the splenic artery
b. Origin from the celiac trunk
c. Are variable in number
d. Are supplying the gastric fundus
e. Are supplying the antrum

26. Which of the following affirmations about the stomach are true?
a. It is an unpaired organ
b. It is an extraperitoneal organ
c. It is the widest part of the digestive tract
d. It has two margins: lesser curvature and the greater curvature
e. It has four walls (surfaces)

27. Which of the following affirmations about the relationships of the stomach are true?
a. Inferior – hepato-gastric ligament
b. Inferior – gastro-colic ligament
c. Posteriorly- left lobe of the liver
d. Anteriorly- the diaphragm
e. Superiorly- gastro-phrenic ligament

Answers

1. b
2. c
3. c, e
4. a, b, d
5. b, c
6. b, d
7. a, d, e
8. b, d, e
9. b, d, e
10. a, b, c, e
11. b, d, e
12. b, e
13. a
14. c, d, e
15. b, c, e
16. a, c
17. a, c, d, e
18. a, b, d
19. a, c, e
20. a, d, e
21. b, c
22. a, c, d, e
23. a, b
24. c, d
25. a, c, d
26. a, c, d
27. b, d, e

Chapter 10

Duodenum, Jejunum and Ileum

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Questionnaire

1. The following information about duodenum are true:
a. It is the first part of the small intestine
b. Continues proximal the stomach
c. Continues distally with the jejunum
d. Has 2 main parts
e. It is all situated in inframeso-colic compartment

2. Duodenum has the following parts:
a. Superior part (DI)
b. Descending part (DII)
c. Horizontal part (DII)
d. Ascending part (DIV)
e. Descending part (DIV)

3. First part of the duodenum:
a. Is the most mobile part of the duodenum
b. It is partially intraperitoneal (proximal part)
c. Forms the inferior margin of epiploic foramen
d. It is totally intraperitoneal
e. Gives insertion to transverse mesocolon

4. Anterior relationships of the first part of duodenum are with:
a. Gastroduodenal artery
b. Common bile duct
c. Portal vein
d. Peritoneum
e. Right hepatic lobe

5. Posterior relationships of the first part of the duodenum are:
a. Gastroduodenal artery
b. Common bile duct
c. Portal vein
d. Head of the pancreas
e. Body of the pancreas

6. Anterior relationships of the descending part of the duodenum are:
a. Right lobe of the liver
b. Gallbladder
c. Diaphragm
d. Transverse mesocolon
e. Inferior vena cava

7. Posterior relationships of the second part of the duodenum are:
a. Hilum of the right kidney
b. Inferior vena cava
c. Right psoas major muscle
d. Transverse mesocolon
e. Aorta

8. Medial relationships of DII are:
a. Head of the pancreas
b. Common bile duct
c. Pancreatic istm
d. Gallbladder
e. Hepatic flexure of the colon

9. Ampula of Vater is:
a. Hepatopancreatic ampulla
b. Opening of common hepatic duct
c. Opening of pancreatic duct
d. Opening of Santorini duct
e. Opening of pylorus

10. The posterior relations of the third part of the duodenum are:
a. Right ureter
b. Right psoas major
c. Left ureter
d. Inferior vena cava
e. Vena porta

11. The anterior relations of the horizontal part of the duodenum are:
a. Right psoas major
b. Transverse mesocolon
c. Root of the mesentery
d. Superior mesenteric vein
e. Vena porta

12. Anterior and inferior relation of DIII part of the duodenum is with:
a. Liver
b. Right gonadal vessels
c. Inferior vena cava
d. Jejunal loops
e. Right kidney

13. The fourth part of the duodenum has lateral and posterior relation with:
a. Superior mesenteric vein
b. Inferior vena cava
c. Pancreaticoduodenal vein
d. Inferior mesenteric vein
e. Vena porta

14. The posterior relations of DIV part of the duodenum are:
a. Aorta

b. Left sympathetic trunk
c. Left renal vessels
d. Left gonadal vessels
e. Inferior vena cava

15. The ascending part of the duodenum has anterior relations with:
a. Ascending colon
b. Descending colon
c. Transverse colon
d. Transverse mesocolon
e. Left renal vessels

16. The ligament of Treitz represents:
a. Mesentery of the duodenum
b. Retroduodenopancreatic fascia
c. Suspensory ligament of the duodenum
d. The landmark between stomach and duodenum
e. The connection between duodenum and pancreas

17. Through what Fascia is the duodenum connected to the posterior abdominal wall:
a. Fascia of Told
b. Fascia of Treitz
c. Retroduodenopancreatic fascia
d. Mesentery
e. Mesocolon

18. Gastroduodenal artery may have its origin:
a. Directly from the abdominal aorta
b. From the celiac trunk
c. From the common hepatic artery
d. From anterior pancreaticoduodenal artery
e. From posterior pancreaticoduodenal artery

19. The main branches of gastroduodenal artery are:
a. Left gastroepiploic artery
b. Right gastroepiploic artery
c. Posteroinferior pancreaticoduodenl artery
d. Anteroinferior pancreaticoduodenal artery
e. Anterior and posterior pancreatoduodenal artery

20. The fourth part of the duodenum is vascularized by:
a. Collateral from celiac trunk
b. Collateral from superior mesenteric artery
c. Jejunal arterial branches
d. Collateral from aorta
e. Collateral from inferior mesenteric artery

21. The vascularisation of the last ileal loop is done by:
a. Gastro-duodenal artery
b. Cecal artery
c. Ileocolic artery

d. Ileocolic vein
e. Portal vein

22. The differences between the ileal and jejunal vascular arches are:
a. The ileal arcade are supply by ileocolic artery
b. The ileal arcade are supply by inferior mesenteric artery
c. There are 4-6 jejunal branches
d. Ileal brances are more numerous
e. Jejunal branches are smaller and shorter than ileal ones

23. The innervation of the jejunum and ileum is done by:
a. Sympathetic fibres
b. Parasympathetic fibres
c. Superior mesenteric plexus
d. Portal plexus
e. Aortic plexus

24. The walls of the jejunum are formed by the following layers:
a. Serosa
b. Mucosa
c. Circular muscle under serosa
d. Longitudinal muscle under serosa
e. Subserosa

25. The characteristics of the ileum are:
a. Has thinner wall than jejunum
b. Has thicker wall than jejunum
c. Is situated in hypogastric region
d. Is situated in epigastric region
e. The circular plicae are more flattened in the distal ileum

26. The duodeno-jejunal junction relationships are:
a. Right- superior mesenteric artery
b. Superior- transverse mesocolon root
c. Superior- inferior margin of pancreas body
d. Left- left kidney
e. Right- right kidney

27. The posterior relationships of the jejuno-ileal mesentery:
a. Duodenum DIII
b. Aorta
c. Superior vena cava
d. Left ureterus
e. Left ileopsoas muscle

28. Which are the branches of the superior mesenteric artery:
a. Jejunal arteries
b. Ileocolic artery
c. Right colic artery
d. Left colic artery
e. Superior rectal artery

29. Which are the tributaries of the superior mesenteric vein:
a. Ileocolic vein
b. Right gastroepiploic vein
c. Right colic vein

d. Left colic vein
e. Superior rectal vein

Answers

1. a, b, c
2. a, b, d
3. a, b, c
4. d, e
5. a, b, c, d
6. a, b, d
7. a, b, c
8. a, b
9. a, b, c
10. a, b, d
11. b, c, d
12. d
13. d
14. a, b, c, d
15. c, d
16. c
17. b, c
18. b, c
19. b, e
20. a, b, c
21. c, d
22. a, c, d
23. a, b, c
24. a, b, d, e
25. a, c, e
26. a, b, c, d
27. a, b
28. a, b, c
29. a, b, c

Chapter 11

Colon

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Questionnaire

1. A patient has a big tumour mass at the level of the right hepatic flexure of the colon. What other structures may be involved?
a. Stomach
b. Pancreas
c. Kidney
d. Liver
e. Diaphragm

2. A tumour is located at the level of the mesocolon on the right side of the duodenojejunal junction. What vessels may be invaded by the tumour?
a. Portal vein
b. Superior mesenteric vein
c. Inferior mesenteric vein
d. Superior mesenteric artery
e. Inferior mesenteric artery

3. Which of the following, are parts of the large intestine?
a. Ileum
b. Cecum
c. Appendix
d. Jejunum
e. Rectum

4. About the large intestine, the following are true:
a. It extends from the ileocecal junction to the rectum
b. It is considered an intraperitoneal and extraperitoneal organ
c. It can be distinguished from the small intestine by haustrations
d. It is longer than the small intestine
e. Over its surface there are fatty projections called, omental appendices

5. About the cecum, the following are true:
a. It is an extraperitoneal organ

b. It is the first part of the large intestine continuing with the ascending colon
c. It has no mesentery
d. It lies in the right iliac fossa
e. It can be completely covered by peritoneum

6. Which of the following affirmations about the appendix are true?
a. It may occupy variable positions, most commonly retrocecal
b. It is considered a lymphoid organ
c. It is located in the left iliac fossa
d. It has a short triangular mesentery the meso-appendix
e. The meso-appendix attaches to the cecum and the distal part of the appendix

7. Which of the following, are parts of the colon?
a. Cecum
b. Ascending colon
c. Sigmoid colon
d. Rectum
e. Anal canal

8. About the arterial supply of the ascending colon the following are true:
a. It is provided by the ileocolic artery which is a branch of the inferior mesenteric artery
b. It is provided by right colic arteries, branches from the superior mesenteric artery
c. The right colic artery has a variable anatomy, usually having a common trunk with the middle colic artery
d. The ileocolic artery it usually divides into superior and inferior branches
e. It is provided by the middle colic artery branch from the superior mesenteric artery

9. The arterial supply of the transverse colon is provided by the following arteries:
a. The middle colic artery, which arises from the superior mesenteric artery just superior to the neck of the pancreas
b. The middle colic artery which arises from the inferior mesenteric artery
c. Can be provided by right and left colic arteries via anastomoses
d. The middle colic artery which usually divides into right and left branches
e. Provided only by the middle colic artery

10. Which of the following affirmations describes the ascending colon?

a. Is the first part of the large intestine
b. It is usually completely covered by peritoneum
c. Passes upwards from the ileocolic junction to the hepatic flexure
d. It is separated posteriorly by the posterior surface of the right kidney
e. It has relations posterior with the ilioinghinal and iliohypogastric nerves

11. Which of the following affirmations describes the transverse colon?
a. Is the third part of the large intestine, crossing the abdomen from the hepatic flexure to the splenic flexure
b. It divides the abdominal cavity into the supra- and inframesocolic compartment
c. It is an extraperitoneal organ
d. It has posteriorly relations with the stomach and duodenum
e. Its mesentery is adherent to the posterior wall of the omental bursa

12. Which of the following affirmations describes the descending colon?
a. It descends from the hepatic flexure in the left hypochondrium to the level of the iliac crest
b. It has posteriorly relations with the anterior renal fascia of the left kidney
c. It represents the last part of the large intestine
d. It has anteriorly relations with the subcostal vessels and nerves
e. It is covered by peritoneum on the anterior and both lateral surfaces

13. About the sigmoid colon, the following are true:
a. It is usually completely covered by peritoneum
b. It has usually a long mesentery, the sigmoid mesocolon, whose root has an inverted V-shaped attachment
c. It has, laterally relations with the left ureter
d. It extends from the iliac fossa to the third lumbar vertebrae
e. Laterally it has relations with the left external iliac vessels

14. Which of the following elements are found posteriorly to the descending colon?
a. The inferior pole of the spleen
b. Bowel loops
c. Iliohipogastric nerve
d. External iliac vessels
e. Left ureter

15. Which of the following affirmations about the rectum are true?
a. It represents the last part of the large intestine, continuing proximally with the sigmoid colon
b. The entire surfaces of the rectum are covered by peritoneum
c. In males posteriorly, it has relations with the prostate
d. In females anteriorly, it has relations with the vagina and uterus
e. The inferior, third part of the rectum it is subperitoneal

16. Which of the following affirmations about the vascularization of the appendix are true?
a. The arterial supply is from the ileocolic artery, branch from the inferior mesenteric artery
b. The arterial supply is from the ileocolic artery, branch from the superior mesenteric artery
c. The arterial supply is from the appendicular artery, usually a branch from the superior mesenteric artery
d. The veins drain into the superior mesenteric vein
e. The veins drain into the inferior mesenteric vein

17. Which of the following arteries are distributed to the descending colon and to the sigmoid colon?
a. Left colic artery, branch of the superior mesenteric artery
b. Sigmoid arteries, branches of the inferior mesenteric artery
c. Superior rectal artery, branch from the inferior mesenteric artery
d. Left colic artery, branch of the inferior mesenteric artery
e. Iliocolic artery, branch of the superior mesenteric artery

18. Which of the following affirmations about the rectum vascularization are true?
a. The arterial supply is from middle rectal arteries, which arise from the internal iliac artery
b. The arterial supply of the inferior rectum is from inferior rectal arteries, branches of the internal iliac artery
c. The arterial supply of the superior rectum is from the superior rectal artery, branch from the inferior mesenteric artery
d. The arterial supply of the inferior rectum is from inferior rectal arteries branches of the internal pudendal arteries
e. The arterial supply is from middle rectal arteries, which arises from the external iliac artery

19. Which parts of the large intestine are drained by the inferior mesenteric vein?
a. The ascending colon
b. The descending colon
c. The distal transverse colon
d. The cecum
e. The sigmoid colon

20. Which of the following affirmations about the arterial supply of the large intestine are true?
a. The ileocolic artery is a terminal branch of superior mesenteric artery, distributed to the cecum and the ascending colon
b. The superior rectal artery, is a terminal branch of inferior mesenteric artery distributed to the distal part of rectum
c. The middle colic artery, which arises from inferior mesenteric artery is distributed to the transverse colon
d. The inferior rectal artery, branch from the internal pudendal artery is distributed to the distal part of rectum and anal canal
e. The left colic and sigmoid arteries which arises from the superior mesenteric artery are distributed to the descending and sigmoid colon

21. Which parts of the large intestine are considered extraperitoneal organs?
a. Cecum
b. Ascending colon
c. Transverse colon
d. Descending colon
e. Sigmoid colon

22. Which of the following affirmations about the lymphatic drainage of the large intestine are true?
a. Lymph drainage follows the course of the veins
b. Lymphatic vessels of the ascending colon drain into the lymph nodes related to the superior mesenteric artery
c. Lymph nodes of the colon form three groups: paracolic, intermediate colic, preterminal colic nodes
d. Preterminal colic nodes drain into pre-aortic nodes
e. The lymphatic vessels of the sigmoid drain into the lymph's nodes related to the inferior mesenteric artery

23. The following affirmations about the hepatic flexure are true:
a. It marks the junction between transverse colon and descending colon
b. Has a less acute angle than the splenic flexure

c. Medially it has relations with the third part of the duodenum
d. Superiorly it has relations with the left lobe of the liver
e. It has posteriorly direct contact with the renal fascia of the right kidney

24. The following affirmations about the splenic flexure are true:
a. It forms the junction between transverse colon and descending colon
b. It is attached to the diaphragm through the phrenicocolic ligament
c. It has posteriorly relations with the left adrenal gland
d. It lies more inferiorly than the hepatic flexure
e. Medially it has relations with the duodenum

25. Which of the following affirmations about the innervation of the large intestine are true?
a. It includes the enteric nervous system
b. The Auerbach's plexus is a plexus lying in the submucosa of the colon
c. It includes the autonomic nervous system
d. The sympathetic nerve supply of the descending and sigmoid colon is from upper lumbar splanchnic nerves
e. The parasympathetic nerve supply of the ascending colon is from vagus nerve

26. Which of the following, are the differences between small intestine and large intestine?
a. The large intestine is more mobile than the small intestine
b. The outer longitudinal muscle layer of the colon is concentrated into two longitudinal bands, called taeniae coli
c. The colon has over its free surface small fatty projections, called omental appendices
d. It has a greater caliber then the small intestine
e. Between the taeniae coli, the wall of the colon presents sacculations called haustra

27. Which of the following affirmations about the rectum's relations are true?
a. It has posteriorly relations with the fundus of the urinary bladder
b. In males, it has anteriorly relations with seminal glands
c. It lies posteriorly anococcygeal ligament
d. It has laterally relations with the sacral nervous plexus
e. In female, it has anteriorly relations with the vagina

Answers

1. c, d, e
2. b, d
3. b, c, e
4. b, c, e
5. b, c, d, e
6. a, b, d
7. b, c
8. b, c, d
9. b, c, d
10. c, e
11. a, b, e
12. b, e
13. a, b
14. c, e
15. a, d, e
16. b, d
17. b, d
18. a, c, d
19. b, c, e
20. a, d
21. b, d
22. b, d, e
23. b
24. a, b, c
25. a, c, d, e
26. c, d, e
27. b, c

Chapter 12

Rectum and Anus

Bartoș Adrian, Bartoș Dana

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Questionnaire

1. The rectum has its limits at the level of the transvers planes that pass through:
a. Forth lumbar vertebra superiorly
b. Third sacral vertebra superiorly
c. The puborectalis part of levator ani inferiorly
d. Pelvic floor inferiorly
e. Peritoneum, the most inferior part of Douglas pouch

2. The venous supply of the rectum is done by the:
a. Superior rectal, tributary of cava system
b. Inferior and middle rectal, tributary of cava system
c. Inferior rectal, tributary of cava system
d. Superior and middle rectal, tributary of portal system
e. Superior rectal, tributary of portal system

3. The rectal deviations are as follows:
a. Superior, concave anterior
b. Superior, convex to the right
c. Middle, convex to the left
d. Inferior, concave posterior
e. Inferior, convex to the right

4. Even if is part of the large intestine, the rectum does not have the following features that are present in the colon:
a. Sacculations
b. Muscular layer: circular, longitudinal
c. External layer is formed by peritoneum
d. Appendices epiploicae
e. Taeniae coli

5. What type of organ is the

rectum:
a. Intraperitoneal organ
b. Infraperitoneal organ
c. Retroperitoneal organ
d. Subperitoneal organ
e. Partially intraperitoneal organ

6. The relations of the peritoneal membrane with the rectum are as follows:
a. Superior third of the rectum is covered entirely by peritoneum
b. The middle third of the rectum is covered by peritoneum on its anterior and lateral aspects
c. The middle third of the rectum is covered by peritoneum on its anterior aspect
d. The middle third of the rectum is covered by peritoneum on its posterior aspect
e. The inferior third is not covered by the peritoneum

7. The anterior reflexion of the peritoneum from the rectal wall is as follows:
a. In both genders, from the anterior wall of the rectum it reflects to the posterior wall of the urinary bladder forming the rectovesical pouch (of Douglas)
b. In female, from the anterior wall of the rectum it reflects to the posterior wall of the uterus to form the recto-uterine pouch
c. In female, from the anterior wall of the rectum it reflects to the posterior vaginal fornix to form the recto-uterine pouch (of Douglas)
d. In male, from the anterior wall of the rectum it reflects to the posterior wall of the urinary bladder forming the rectovesical pouch
e. In male, from the anterior wall of the rectum it reflects to the anterior wall of the prostate forming the rectoprostatic pouch

8. What is the inferior limit of the anterior peritoneal reflexion of the rectum:
a. Inferior limit of the uterus
b. Posterior vaginal fornix
c. Inferior limit of the prostate
d. Superior limit of the prostate
e. Inferior limit of the urinary bladder

9. Most commonly, how many transversal folds does rectum have:
a. One
b. Two
c. Three
d. Four
e. None

10. The posterior relations of

the rectum are:
a. Superior third sacral vertebrae
b. Coccyx
c. The superior portion of the sacral sympathetic chain
d. The inferior portion of the sacral sympathetic chain
e. Median and lateral sacral vessels

11. The lateral relationships, superior to the peritoneal reflexion are:
a. Cecum
b. Sigmoid colon
c. Small bowel
d. Levator ani
e. Obturator bundle

12. The lateral relationships, inferior to the peritoneal reflexion are:
a. Levator ani muscle
b. Obturator externus muscle
c. The obturator vessels
d. Ureters
e. Internal iliac vessels

13. Name the nervous relationships of the rectum:
a. Inferior hypogastric plexus
b. Superior hypogastric plexus
c. The obturator nerve
d. The piriformis plexus
e. The sacral plexus

14. Name the common anterior relationships of the rectum in both sexes?
a. Base of the bladder
b. Sigmoid colon
c. Appendix
d. Urethra
e. Small bowel

15. What are the anterior relationships of the rectum present only in male?
a. Base of the bladder
b. Terminal parts of the ureters
c. Urethra
d. Seminal vesicles
e. Vas deferens

16. What are the anterior relationships of the rectum in female?
a. Terminal parts of the ureters
b. Base of the bladder
c. Small bowel
d. Cervix/body of the uterus
e. Vagina

17. The mesorectal fascia has the following attributes:
a. It is also known as the Denonvilliers' fascia
b. It is also known as the presacral fascia
c. In females, the mesorectal fascia joins the Denonvilliers' fascia and form the rectovaginal septum
d. The mesorectal fascia is

anchored to the pelvic walls by three ligaments
e. The mesorectal fascia encloses the rectum and mesorectum

18. The arterial supply of the rectum is given by the:
a. Superior rectal artery, a collateral branch of the inferior mesenteric artery
b. Superior rectal artery, the terminal branch of the inferior mesenteric artery
c. Middle and inferior rectal arteries, collateral branches of the inferior mesenteric artery
d. Inferior rectal arteries, terminal branches of the internal pudendal arteries
e. Superior third by the superior rectal artery, middle third by the middle rectal artery and inferior third by the inferior rectal artery

19. If a tumour is located at the level of the anterior wall of the middle rectum what organs might be involved?
a. Small bowel
b. Urethra
c. Urethers
d. Uterus
e. Vagina

20. Name the anterior relationships of the anal canal:
a. Urinary bladder
b. Prostate
c. Ureter
d. Perineal body
e. Vagina

21. The internal anal sphincter has the following attributes:
a. It is a truly circular muscular layer
b. It's fibres are more oblique
c. It extends from the anorectal junction to the anal verge
d. It is thinner in male and patients with chronic constipation
e. Transient relaxation of the superior internal anal sphincter hapends in response to rectal distension

22. The innervation of the internal anal sphincter is given by the:
a. Hypogastric plexus for both sympathetic and parasympathetic innervations
b. Hypogastric plexus only for sympathetic innervation
c. Vagus nerve for parasympathetic innervation
d. Sympathetic fibres that originate from the superior two lumbar spinal segments
e. Parasympathetic fibres that originate from the second to fourth sacral spinal segments

23. The anal haemorrhoids

have the following attributes:
a. Are caused by abnormal venous dilatations
b. Are associated with laxity of the anal canal submucosa
c. Are associated with strengthening of the anal canal submucosa
d. Are associated with the enlargement of the terminal branches of the superior rectal artery
e. Are associated with the enlargement of the terminal branches of the superior rectal vein

Answers

1. b, c, d
2. b, c
3. b, c, e
4. a, d, e
5. e
6. c, e
7. c, d
8. b, c
9. c
10. b, d, e
11. b, c
12. a, c, d, e
13. a, c, d, e
14. b, e
15. a, b, d, e
16. c, d, e
17. c, d, e
18. b, d
19. c, e
20. d, e
21. b, c, e
22. a, d, e
23. a, b, d

Chapter 13

Liver

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Questionnaire

1. The liver has the following features:
a. Is an intraperitoneal organ
b. Is an extraperitoneal organ
c. Is located in the supramesocolic compartment
d. Is an organ with both endocrine and exocrine secretion
e. It has a very low metabolic function

2. Anatomically speaking the landmark between the right and left lobe of the liver is the:
a. Coronary ligament
b. Round ligament
c. Falciform ligament
d. Portal vein
e. Venous ligament

3. Which area of the liver are not covered by peritoneum?
a. Gallbladder fossa
b. Fossa of the inferior vena cava
c. Colic impression
d. Gastric impression
e. Porta hepatis

4. The inferior or visceral surface has the following features:
a. Caudate lobe
b. Quadrate lobe
c. Fossa of the umbilical vein
d. Fossa of the falciform ligament
e. Fossa of the coronary ligament

5. The inferior or visceral surface has the following features:
a. Fossa of the portal vein
b. Fossa of the inferior vena cava
c. Fossa of the venous ligament
d. Hilum of the liver
e. Fossa of the cystic duct

6. What impressions can be found at the level of the vis-

ceral surface of the right lobe of the liver?
a. Gastric
b. Duodenal
c. Jejunal
d. Colic
e. Renal

7. Who is forming the right superior sagittal fissure on the visceral surface of the liver:
a. Fossa of the falciform ligament
b. Fossa of the round ligament
c. Gallbladder fossa
d. Fossa of the venous ligament
e. Fossa of the inferior vena cava

8. Who is forming the left superior sagittal fissure on the visceral surface of the liver:
a. Fossa of the falciform ligament
b. Fossa of the round ligament
c. Gallbladder fossa
d. Fossa of the venous ligament
e. Fossa of the inferior vena cava

9. Who is forming the left inferior sagittal fissure on the visceral surface of the liver:
a. Fossa of the round ligament
b. Fossa of the coronary ligament
c. Gallbladder fossa
d. Hilum of the liver
e. Fossa of the falciform ligament

10. Who is forming the right inferior sagittal fissure on the visceral surface of the liver:
a. Fossa of the round ligament
b. Fossa of the coronary ligament
c. Gallbladder fossa
d. Fossa of the venous ligament
e. Fossa of the falciform ligament

11. Who is forming the transvers fissure on the visceral surface of the liver:
a. Fossa of the round ligament
b. Gallbladder fossa
c. Hilum of the liver
d. Fossa of the inferior vena cava
e. Fossa of the coronary ligament

12. By Couinaud classification the left lobe of the liver has the following segments:
a. Second segment
b. Forth segment
c. Fifth segment
d. Third segment
e. Caudate lobe

13. The structures inside the hepatic pedicle are positioned as follows:
a. Hepatic vein posterior

b. Hepatic artery anterior to the hepatic vein
c. Portal vein posterior
d. Common bile duct anterior to the portal vein
e. Cystic duct anterior to the portal vein

14. The right portal vein has the following branches:
a. Antero-superior branch for the 8th segment
b. Postero-superior branch for the 8th segment
c. Postero-inferior branch for the 6th segment
d. Antero-superior branch for the 7th segment
e. Medio-superior branch for the 4A segment

15. The left portal vein has the following branches:
a. Medio-posterior branch for the 1st segment
b. Medio-inferior branch for the 4A segment
c. Medio-superior branch for the 4A segment
d. Latero-inferior branch for the 3rd segment
e. Latero-inferior branch for the 2nd segment

16. Which are the tributaries of the portal vein?
a. Gastro-duodenal vein
b. Cystic vein
c. Left gastro epiploic vein
d. Superior posterior pancreato-duodenal vein
e. Left gastric vein

17. What is the Laennec capsule?
a. Is the proper membrane that covers the entire surface of the liver (including the bare area) but also goes inside the hepatic parenchyma to envelope the Glissonean pedicles (like a glove)
b. Is the fibrous layer of the liver that is located beneath the serous layer
c. Is the fibrous layer of the liver that is located beneath the Glissonean capsule
d. Is the proper membrane of the biliary tree that goes inside the hepatic parenchyma to envelope each biliary duct (like a glove)
e. Is the proper membrane of the portal system that goes inside the hepatic parenchyma

18. What is the Glissonean capsule?
a. Is a serous capsule located beneath the peritoneum of the liver
b. Is a fibrous capsule located beneath the Laennec capsule
c. It covers only the hepatic

pedicles
d. It covers only the biliary ducts
e. It covers the liver and the portal veins

19. The proper hepatic artery has the following characteristics:
a. Is a branch of the celiac trunk
b. Is located inside the hepato-duodenal ligament
c. Is located inside the hepato-gastric ligament
d. Gives up two collateral branches: right gastro-epiploic and cystic arteries
e. As part of the hepatic pedicle the proper hepatic artery is located anterior to the portal vein

20. The portal vein relationships are:
a. Origin posterior to the head of the pancreas
b. Origin posterior to the body of the pancreas
c. Ascends inside the hepato-gastric ligament till the hilum of the liver
d. Ascends inside the hepato-duodenal ligament till the hilum of the liver
e. As part of the hepatic triad is located anterior to the common bile duct

21. The liver is kept in its anatomical position by the following structures:
a. Lesser omentum
b. Hepato-phrenic ligament
c. Coronary ligament
d. Hepato-renal ligament
e. Falciform ligament

22. The anterior peritoneal layer of the coronary ligament continues at the level of the diaphragmatic surface of the liver with the following structures:
a. Round ligament
b. Hepato-gastric ligament
c. Hepato-duodenal ligament
d. Triangular ligaments
e. Falciform ligament

23. The posterior peritoneal layer of the coronary ligament continues at the level of the diaphragmatic surface of the liver with the following structures:
a. Round ligament
b. Venous ligament
c. Falciform ligament
d. Triangular ligaments
e. Hepato-gastric ligament

24. A gastroenterologist does an abdominal ultrasound on

the patient. At the level of the right hypochondriac area on the right side of the falciform ligament near the anterior margin of the liver he sees a tumour. At the level of what hepatic segment is this tumour located?

a. Segment 4A
b. Segment 4B
c. Segment 5
d. Segment 3
e. Segment 6

25. What liver segment corresponds to the gallbladder bed?

a. Segment 4A
b. Segment 4B
c. Segment 5
d. Segment 7
e. Segment 6

26. A computer tomography is done on a patient. It reveals a big hepatic cyst located on the left side of the coronary ligament, near the insertion of the triangular ligament. In what hepatic segment is the cyst located?

a. Segment 4A
b. Segment 4B
c. Segment 3
d. Segment 2
e. Segment 5

Answers

1. a, c
2. c
3. a, b, e
4. a, b, c
5. b, c, d
6. b, d, e
7. d
8. e
9. a
10. c
11. c
12. a, b, d, e
13. c, d
14. a, c
15. c, d
16. b, d, e
17. a, b
18. b, c
19. b, d, e
20. a, d
21. a, c, e
22. d, e
23. b, d
24. b
25. b, c
26. d

Chapter 14

Gallbladder and Excretory System of the Liver

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Questionnaire

1. When doing the cholecystectomy (gallbladder removal) the artery that supplies the organ must be ligated; which one is it?
a. Right hepatic artery
b. Left hepatic artery
c. Cystic artery
d. Proper hepatic artery
e. Common hepatic artery

2. What is the most common origin of the cystic artery?
a. Left hepatic artery
b. Right hepatic artery
c. Common hepatic artery
d. Proper hepatic artery
e. Coeliac trunk

3. What is the name of the duct that connects the gallbladder with the common hepatic duct?
a. Choledoc
b. Main bile duct
c. Wirsung duct
d. Cystic duct
e. Santorini duct

4. Which are the main components of the gallbladder?
a. Fundus
b. Head
c. Porta hepatis
d. Body
e. Neck

5. The body of the gallbladder has anterior relationships with:
a. First part of the duodenum
b. Second part of the duodenum
c. Transverse colon
d. Ascending colon
e. Hepatic flexure

6. Name the location of the gallbladder:
a. Inferior surface of the right

lobe of the liver
b. Inferior surface of the left lobe of the liver
c. Anterior surface of the right lobe of the liver
d. Between Vth and VIth hepatic segments
e. Between IVth and Vth hepatic segments

7. Which parts of the gallbladder are covered by the serosa?
a. The superior part of the fundus
b. The entire fundus
c. The inferior surface of the body
d. The superior surface of the body
e. The neck

8. What liver segments drain into the left hepatic duct?
a. IV
b. II
c. III
d. V
e. VI

9. The right hepatic duct is formed by the union of the following main branches:
a. Anterior (lateral) and posterior (medial) sectoral ducts
b. Anterior (medial) and posterior (lateral) sectoral ducts
c. Branches of the VIII and V segments
d. Branches of the VIII and IV segments
e. Branches of the V and VI segments

10. Name the ducts that form the anterior sectoral hepatic duct:
a. Ducts that collect bile from the IVth hepatic segment
b. Ducts that collect bile from the Vth hepatic segment
c. Ducts that collect bile from the VIth hepatic segment
d. Ducts that collect bile from the VIIth hepatic segment
e. Ducts that collect bile from the VIIIth hepatic segment

11. Name the ducts that form the posterior sectoral hepatic duct:
a. Ducts that collect bile from the IVth hepatic segment
b. Ducts that collect bile from the Vth hepatic segment
c. Ducts that collect bile from the VIth hepatic segment
d. Ducts that collect bile from the VIIth hepatic segment
e. Ducts that collect bile from the VIIIth hepatic segment

12. What is the particularity of the cystic duct?
a. It has mucosal folds that project into the cystic lumen and form a spiral

b. It has valves
c. It has sphincters
d. It has a very precise location
e. Always enters into the common hepatic duct under a sharp angle

13. The differences between the right and left hepatic bile ducts are:
a. The right one is short, with a nearly vertical path
b. The left one is longer and has a more horizontal path along the inferior margin of segment V
c. The right one is longer, with a nearly vertical path
d. The left one is a more accessible one in case of surgery
e. The right one has its extrahepatic path along the inferior margin of segment V

14. What are the borders of the hepatobiliary triangle?
a. Common bile duct
b. Common hepatic duct
c. Cystic duct
d. Cystic artery
e. Inferior surface of the liver

15. What are the borders of the Calot's triangle?
a. Common bile duct
b. Common hepatic duct
c. Cystic duct
d. Cystic artery
e. Inferior surface of the liver

16. Name the ducts that form the common bile duct:
a. Left hepatic
b. Right hepatic
c. Choledoc
d. Cystic duct
e. Common hepatic duct

17. The common bile duct can be divided into the following segments:
a. Intrahepatic
b. Supraduodenal
c. Preduodenal
d. Retroduodenal
e. Pancreatic

18. Name the relationships that the supraduodenal segment of the common bile duct has:
a. Anterior to the epiploic foramen
b. Posterior to the epiploic foramen
c. Anterior to inferior vena cava
d. Anterior and to the right of the portal vein
e. Posterior to the right of the hepatic artery

19. Name the relationships that the retroduodenal segment of the common bile duct has:
a. Anterior to the first part of the

duodenum
b. Anterior to the second part of the duodenum
c. Posterior to the first part of the duodenum
d. To the right of the gastroduodenal artery
e. Anterior to the posterior superior pancreaticoduodenal artery

20. The hepatopancreatic ampulla is located at the junction of the:
a. Lateral wall of the second part of the duodenum
b. Medial wall of the second part of the duodenum
c. Body of the pancreas
d. Pancreatic head
e. Inferior wall of the first duodenal segment

21. What ducts usually drain inside the Vater ampula?
a. Wirsung duct
b. Main pancreatic duct
c. Common bile duct
d. Cystic duct
e. Common hepatic duct

22. The innervation of the gallbladder is given by the:
a. Vagal nerve through sympathetic fibres
b. Vagal nerve through parasympathetic fibres
c. Nervous fibers from the hepatic plexus
d. Sympathetic nerve fibres from the coeliac and superior mesenteric ganglia
e. Sympathetic nerve fibres from the coeliac and inferior mesenteric ganglia

23. The lymph collected from the gallbladder is drained through the following lymph nodes:
a. Cystic node
b. Nodes located in the lesser omentum
c. Coeliac lymph nodes
d. Superior retropancreaticoduodenal node
e. Inferior mesenteric nodes

24. The cystic veins drain into the:
a. Suprahepatic veins
b. Portal vein
c. Inferior vena cava
d. Superior mesenteric vein
e. Hepatic veins

25. The walls of the main bile ducts are made of?
a. External fibrous layer
b. Longitudinal, oblique and circular smooth muscle
c. Mucosa
d. Serosa
e. No muscular layer

Answers

1. c
2. b
3. d
4. a, d, e
5. b, c
6. a, e
7. b, d
8. a, b, c
9. b
10. b, e
11. c, d
12. a
13. a, d
14. b, c, e
15. b, c, d
16. d, e
17. b, d, e
18. a, c, d
19. c, d
20. b, d
21. a, b, c
22. b, c, d
23. a, b, c, d
24. b
25. a, b, c

Chapter 15

Pancreas

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Questionnaire

1. A patient has a small tumour located posterior at the level of the neck of the pancreas. What other structures might be affected by this tumour?
a. Inferior vena cava
b. Inferior mesenteric artery
c. Inferior mesenteric vein
d. Portal vein
e. Superior mesenteric artery

2. Name the relationships of the head of the pancreas:
a. Superior it has relationships with the pilorus
b. On its left side it has relationship with the superior mesenteric vessels
c. On its right side it has relationships with the second segment of the duodenum
d. On his right side it has relationship with the third segment of the duodenum
e. On his left side it has relationships with the splenic vein

3. Name the posterior relationships of the head of the pancreas:
a. Inferior vena cava
b. Right renal artery
c. Right renal vein
d. Left renal vein
e. Bile duct

4. Name the posterior relationships of the neck of the pancreas:
a. Superior mesenteric artery
b. Superior mesenteric vein
c. Splenic vein
d. Portal vein
e. Inferior mesenteric vein

5. What is the pancreas?
a. It's a retroperitoneal organ
b. It's on intraperitoneal organ

c. It's an accessory digestive gland
d. It's an endocrine, exocrine secretion gland
e. It's an infraperitoneal organ

6. Name the posterior relationships of the body of the pancreas:
a. Aorta
b. Superior mesenteric artery
c. Left suprarenal gland
d. Superior mesenteric vein
e. Inferior mesenteric artery

7. Name the anterior relationships of the body of the pancreas:
a. Ascending colon
b. Transverse mesocolon
c. Ilean loops
d. Duodenojejunal flexure
e. Stomach

8. Name the anterior relationships of the uncinate process of the pancreas:
a. Portal vein
b. Inferior vena cava
c. Inferior mesenteric vein
d. Superior mesenteric vein
e. Superior mesenteric artery

9. Which are the main arteries that will give arterial collaterals for the pancreas?
a. Inferior mesenteric artery
b. Superior mesenteric artery
c. Proper hepatic artery
d. Celiac trunk
e. Colic artery

10. What arteries supply the head and the uncinate process of the pancreas?
a. Main pancreatic artery
b. Posterior pancreaticoduodenal arcade
c. Anterior pancreaticoduodenal arcade
d. Dorsal pancreatic artery
e. Transverse pancreatic artery

11. What arteries supply the body and tail of the pancreas?
a. Collaterals of the splenic artery
b. Posterior inferior pancreaticoduodenal artery
c. Anterior inferior pancreaticoduodenal artery
d. Main pancreatic artery
e. Dorsal pancreatic artery

12. In regard with the lymphatic drainage of the pancreas what are its main features?
a. It's a very poor system
b. It's an expensive system
c. The lymph drainage mostly into the nodes that follow the inferior mesenteric artery
d. The lymph drains into the

notes that follow the splenic artery, superior mesenteric artery, hepatic artery
e. There is no evidence of lymphatic channels within the pancreatic islets

13. The following statements are true about the pancreas:
a. It is the smallest digestive gland
b. The greatest part of the gland is exocrine
c. The endocrine function is for glucose metabolism
d. It is flattened antero-posterior
e. It has no exocrine function

14. The pancreas different segments relations in confront with the peritoneum are as follows:
a. The head is retroperitoneal
b. The tail is retroperitoneal
c. The body is intraperitoneal
d. The tail is intraperitoneal
e. The head is intraperitoneal

15. The pancreas is attached to the posterior abdominal wall by:
a. Retroduodenopancreatic fascia
b. Told's fascia
c. Treitz's fascia
d. Fibrous connective tissue
e. Peritoneum

16. Bursa omentalis is:
a. The lesser sac
b. Situated posterior to pancreas
c. Situated anterior to pancreas
d. Posterior to the stomach
e. Anterior to stomach

17. The posterior surface of the head of the pancreas has relations with:
a. Transverse mesocolon
b. Left crus of the diaphragm
c. Common bile duct
d. Inferior vena cava
e. Aorta

18. The neck of the pancreas has anterior relations with:
a. Portal vein
b. Superior mesenteric vein
c. Splenic vein
d. Peritoneum
e. Pylorus

19. The anterior surface of the body of the pancreas has relations with:
a. Stomach
b. Second part of the duodenum
c. Duodenojejunal flexure
d. Left crus oh the diaphragm
e. Left suprarenal gland

20. The posterior surface of the body of the pancreas has relations with:

a. Peritoneum
b. Aorta
c. Left suprarenal gland
d. Superior pole of the left kidney
e. Stomach

21. The superior border of the body of the pancreas has the following vascular relations:
a. Celiac trunk
b. Common hepatic artery to the right
c. Common hepatic artery to the left
d. Splenic artery to the left
e. Proper hepatic artery to the right

22. The tail of the pancreas:
a. Is the most medial segment of the pancreas
b. It is found between the peritoneal sheets of the splenorenal ligament
c. It could enter the splenic hilum
d. It is the broadest segment of the pancreas
e. It is located in supramesocolic compartment

23. The uncinate process has posterior relation with:
a. Superior mesenteric vein
b. Superior mesenteric artery
c. Aorta
d. Splenic vein
e. Splenic artery

24. The pancreatic ducts:
a. Drains the endocrine pancreatic secretions
b. The main pancreatic duct runs in the middle of the gland
c. The secondary pancreatic duct drains the body of the pancreas only
d. The secondary pancreatic duct is also cold Wirsung
e. The accessory pancreatic duct drains the head of the pancreas

25. The celiac trunk has the following branches:
a. Pancreatic artery
b. Left gastric artery
c. Right gastric artery
d. Splenic artery
e. Common hepatic artery

26. The arterial vascularization of the head of the pancreas is represented by:
a. Anterior superior pancreaticoduodenal artery
b. Posterior superior pancreaticoduodenal artery
c. Anterior inferior pancreaticoduodenal artery
d. Posterior inferior pancreaticoduodenal artery
e. Branches directly from the aorta

27. The body and tail of the

pancreas are arterially vascularized by:
a. Dorsal pancreatic artery
b. Splenic artery ramus
c. Aorta
d. Posterior superior pancreaticoduodenal artery
e. Anterior inferior pancreaticoduodenal artery

28. Anterior arterial arch of the head of the pancreas is formed by:
a. Anterior superior pancreaticoduodenal artery from the superior mesenteric artery
b. Anterior inferior pancreaticoduodenal artery from the superior mesenteric artery
c. Anterior superior pancreaticoduodenal artery from the gastroduodenal artery
d. Anterior inferior pancreaticoduodenal artery from the splenic artery
e. Posterior superior pancreaticoduodenal artery

29. Posterior arterial arch of the head of the pancreas is formed by:
a. Posterior inferior pancreaticoduodenal artery from superior mesenteric artery
b. Posterior inferior pancreaticoduodenal artery from splenic artery
c. Posterior superior pancreaticoduodenal artery from the aorta
d. Posterior superior pancreaticoduodenal artery from gastroduodenal artery
e. Anterior inferior pancreaticoduodenal artery

30. The venous vascularization of the pancreas is represented by:
a. Anterior superior pancreaticoduodenal vein drains into right gastroepiploic vein
b. Posterior superior pancreaticoduodenal vein drains into portal vein
c. Anterior inferior pancreaticoduodenal vein drains into vena porta
d. Posterior inferior pancreaticoduodenal vein drains into superior mesenteric vein
e. Anterior superior pancreaticoduodenal vein drains into gastroduodenal vein

31. The portal vein greater affluents are:
a. Left gastric vein
b. Splenic vein
c. Pancreatic vein
d. Superior mesenteric vein
e. Inferior mesenteric vein

32. Which part of the pancreas has relationships with the splenic artery:
a. Tail
b. Head
c. Inferior margin
d. Superior margin
e. Uncinate process

33. The splenic vein affluents are:
a. Short gastric
b. Left gastroepiploic vein
c. Right gastroepiploic vein
d. Superior mesenteric vein
e. Middle colic vein

34. Lymphatics from the pancreas drain into lymph nodes:
a. Around the splenic artery
b. Around the pancreaticoduodenal artery
c. Around the superior mesenteric artery
d. Around the portal vein
e. Around the inferior mesenteric vein

35. The parasympathetic innervation of the pancreas is represented by:
a. Vagus nerve
b. The Xth nerve
c. Sympathetic fibers
d. Sympathetic ganglia
e. Parasympathetic neurons

Answers

1. d, e
2. a, b, c
3. a, b, c, e
4. b, c, d
5. a, c, d
6. a, b, c
7. b, d, e
8. d, e
9. b, d
10. b, c
11. a, d, e
12. b, d, e
13. b, c, d
14. a, d
15. a, c
16. c, d
17. c, d
18. d, e
19. a, c
20. b, c, d
21. a, b, d
22. b, c, e
23. c
24. b, e
25. b, d, e
26. a, b, c, d
27. a, b
28. b, c
29. a, d
30. a, b, d
31. b, d, e
32. d
33. a, b
34. a, b, c
35. a, b

Chapter 16

Spleen

Vanta Oana, Bartoș Dana

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Questionnaire

1. The spleen presents:
a. A superolateral diaphragmatic surface
b. A inferomedial visceral surface
c. A anterosuperior diaphragmatic surface
d. A posterior and medial border
e. A superolateral border

2. The diaphragmatic surface of the spleen is:
a. Also called hepatic
b. Irregular
c. Also called visceral
d. Smooth and convex
e. Facing superiorly

3. The inferomedial surface of the spleen:
a. Is also called visceral
b. Is irregular
c. Is smooth and convex
d. Faces inferomedially
e. Is also called renal

4. The visceral surface of the spleen presents the following impressions:
a. The gastric impression
b. The colic impression
c. Diaphragmatic impression
d. The renal impression
e. The pancreatic impression

5. The splenic ligaments:
a. Consist of 2 layers of peritoneum
b. Contain blood vessels and fatty tissue
c. Consist of 1 layer of peritoneum
d. Maintain the spleen into a fix position
e. Give the spleen a degree of

mobility

6. The following statements about the hilum of the spleen are correct:
a. Contains the splenic vessels
b. Contains the pancreatic vessels
c. Is situated on the visceral surface
d. Is situated on the diaphragmatic surface
e. Is situated close to the posteroinferior border

7. The following statements about the visceral surface of the spleen are correct:
a. It presents the colic impression on the posteroinferior part
b. It presents the renal impression on the posteroinferior part
c. It presents the colic impression on the anteroinferior part
d. It presents the gastric impression anterolaterally
e. It presents the gastric impression anteromedially

8. The following statement about the phrenicosplenic ligament is correct:
a. It links the spleen to the peritoneum of the inferior surface of the diaphragm
b. The anterior layer of the ligament is continuous with the peritoneum of the posterior wall of the lesser sac over the left kidney
c. The posterior layer of the ligament is continuous with the gastrosplenic ligament at the splenic hilum
d. The posterior layer of the ligament is continuous with the peritoneum over the inferior surface of the diaphragm
e. Contains the splenic artery

9. The gastrosplenic ligament contains:
a. The short gastric arteries
b. The superior polar arteries
c. The right gastroepiploic artery
d. The inferior polar arteries
e. The splenic artery

10. The splenopancreatic ligament contains:
a. The proximal segment of the splenic artery
b. The distal segment of the splenic artery
c. The body of the pancreas
d. The tail of the pancreas
e. The short gastric arteries

11. The following statement about the splenopancreatic ligament are correct:
a. The anterior layer of the

ligament is continuous with the peritoneum of the posterior wall of the omental bursa
b. The posterior layer of the ligament is continuous with the gastrosplenic ligament at the splenic hilum
c. The anterior layer of the ligament is continuous with the posterior layer of the gastrosplenic ligament at the splenic hilum
d. The anterior layer of the ligament is continuous with the peritoneum over the inferior surface of the diaphragm
e. The posterior layer of the ligament is continuous with the peritoneum over the superior surface of the kidney

12. The gastrosplenic ligament is continuous with:
a. The phrenicosplenic ligament
b. The splenopancreatic ligament
c. The splenic capsule
d. The gastric serosa
e. The epiploic apron

13. The following statements about the course of the splenic artery are correct:
a. Courses posterior to the left kidney and left suprarenal gland
b. Runs horizontally posterior to the superior border of the body and tail of the pancreas
c. Courses anterior to the left kidney and left suprarenal gland
d. Runs in the splenopancreatic ligament posterior to the tail of the pancreas
e. Runs horizontally anterior to the superior border of the body and tail of the pancreas

14. Most commonly, the splenic artery is a branch of:
a. The inferior mesenteric artery
b. The superior mesenteric artery
c. The coeliac trunk
d. The splenomesenteric trunk
e. The abdominal aorta

15. Branches of the splenic artery include:
a. Dorsal pancreatic
b. Greater pancreatic artery
c. The short gastric arteries
d. The right gastroepiploic artery
e. The left gastroepiploic artery

16. The following statements about the splenic vein are correct:
a. It crosses the posterior abdominal wall posterior to the left kidney, renal hilum and abdominal aorta
b. It runs posterior to the tail and body of the pancreas
c. It runs inferior to the splenic artery

d. It runs anterior to the tail and body of the pancreas
e. It crosses the posterior abdominal wall anterior to the left kidney, renal hilum and abdominal aorta

17. The splenic vein receives the following veins:
a. The short gastric veins
b. The right gastroepiploic veins
c. Retroperitoneal veins
d. Retropancreatic veins
e. Posterior gastric vein

18. The following statements about the vascularization of the spleen are correct:
a. Arterial blood supply is from the hepatic artery via the splenic artery
b. Venous drainage is made by two splenic veins
c. Venous drainage is made by one splenic vein
d. Arterial blood supply is from the superior mesenteric artery via the splenic artery
e. Arterial blood supply is from the coeliac trunk via the splenic artery

Answers

1. a, b
2. d, e
3. a, b, d
4. a, b, d
5. a, b, e
6. a, c, e
7. b, c, e
8. a
9. a, b
10. b, d
11. a, c, e
12. a, b, c, d
13. b, c, d
14. c
15. a, b, c, e
16. b, c, e
17. a, c, e
18. c, e

Chapter 17

Kidney and Ureters

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Questionnaire

1. Name the anterior relationships of the right kidney:
a. Spleen
b. Right lobe of the liver
c. Duodenum
d. Pancreas
e. Stomach

2. Name the anterior relationships of the left kidney:
a. Liver
b. Pancreas
c. Stomach
d. Duodenum
e. Spleen

3. Name the posterior relationships of the right kidney:
a. Psoas major muscle
b. Pancreas
c. Quadratus lumborum muscle
d. Diaphragm
e. Rectus abdominis

4. Name the anatomical structures at the level of the renal hilum:
a. Renal vein
b. Renal artery
c. Ureter
d. Calyces
e. Renal pelvis

5. What are the relationships of the abdominal ureter?
a. Posterior- genitofemural nerve
b. Posterior – psoas muscle
c. Anterior- gonadal vessels
d. Lateral – inferior vena cava
e. For the right ureter- anterior - loops of jejunum and sigmoid colon

6. What are the relationships of the pelvic ureter?
a. Posterior – internal iliac artery
b. Anterior – internal iliac artery
c. In males – posterior – vas deferens
d. In females – posterior – uterine artery
e. Posterior – internal iliac vein

7. What type of organ is the kidney?
a. Retroperitoneal organ
b. Hollow organ
c. Intraperitoneal organ
d. Parencymal organ
e. Unpaired organ

8. What are the relationships of the right renal artery?
a. Anterior – inferior vena cava
b. Posterior – inferior vena cava
c. Posterior – Right renal vein
d. Anterior – head of the pancreas
e. Anterior – descending part of the duodenum

9. Name the relationships of the left renal vein:
a. Posterior –aorta
b. Anterior – aorta
c. Posterior –left renal artery
d. Posterior – splenic vein
e. Anterior – body of the pancreas

10. Name the arteries of the kidney:
a. The left renal artery, that is shorter than the right one
b. Inferior suprarenal artery
c. Segmental arteries
d. The right renal artery, that is shorter thant the left one
e. Lobar arteries

11. A patient has a tumor of 3 cm. at the level of the junction between the inferior vena cava and right renal vein what other organs might be involved?
a. Spleen
b. Head of the pancreas
c. Duodenum
d. Right ureter
e. The ascending colon

12. If a tumour it's located on the posterior surface of the right kidney what are the muscles that might be invaded?
a. Psoas major muscle
b. Rectus abdominis muscle
c. Transverse abdominis muscle
d. Quadratus lumborum muscle
e. Diaphragm

13. What are the main differences between the relationships of the right and left renal veins:
a. Left renal vein – has posteri-

orly relationships with the aorta
b. Right renal vein – has posteriorly relationships with the aorta
c. Left renal vein – has anteriorly relationships with the aorta
d. Right renal vein – has anteriorly relationships with the aorta
e. Both of them lie anterior to the renal arteries

14. What are the main differences between the relationships of the right and left renal arteries:
a. Right renal artery – has posteriorly relationships with the inferior cava vein
b. Right renal artery – has anteriorly relationships with the inferior cava vein
c. Left renal artery – has posteriorly relationships with the inferior cava vein
d. Left renal artery – has anteriorly relationships with the inferior cava vein
e. Both of them lie posterior to the renal veins

15. Name the layers surounding the kidney:
a. Fibrous renal capsula
b. Gerota's fascia
c. Fascia transversalis
d. Perirenal fat
e. Tolddt's fascia

16. What structures are located in the corticala of the kidney?
a. Renal pyramides
b. Renal sinus
c. Renal columns
d. Calyces
e. Arcuate arteries

17. What structures are located in the medulla of the kidney:
a. Renal pyramides
b. Renal columns
c. Renal papillas
d. Arcuate arteries
e. Nephrones

18. The pelvis of the kidney it's form by the:
a. Minor calyces
b. Major calyces
c. Ureter
d. Renal pyrmamides
e. Renal columns

19. Name the characteristics of the renal calyx:
a. The major calyces surround the renal papillas
b. The major calyces drain into the kidney's pelvis
c. The minor calyces are grouped and merge to gorm the major calyces
d. The minor calyces surround the renal papilla of the pyramides

e. The minor calyces collect urine from the major calyces

20. In order to put the kidney in the correct anatomical position we should use:
a. Lateral – hilum of the kidney
b. Medial – hilum of the kidney
c. Superior – suprarenal gland
d. Posterior – renal pelvis
e. Anterior – renal vein

21. Which of the following statements about the kidney are true?
a. It is an intraperitoneal organ
b. The left kidney its usually inferior to the left kidney
c. The kidneys are surrounded by perirenal fat
d. Can be divided into an internal medulla and an external cortex
e. Both kidneys are related inferiorly with the suprarenal glands

22. Which of the following statements about the ureter are true?
a. In the abdomen, the urter descend anterior to the peritoneum
b. It continues the renal pelvis
c. It has two parts – abdominal and pelvic
d. They opem into the apex of the urinary bladder
e. Right ureter has medial relationships with the inferior vena cava

23. What are the relationships of the elements located inside the renal hilum:
a. Anterior – the pelvis
b. Posterior – the pelvis
c. Anterior – the renal vein
d. Posterior – the renal vein
e. Anterior – the renal artery

24. Name the internal structures of the kidney:
a. External medulla
b. Internal medulla
c. External cortex
d. Internal cortex
e. Calyces

25. Which of the following statements about the vascularisation of the kidneys are true:
a. The renal artery is subdivided in segmental, lobar, interlobar, arcuate and interlobular arteries
b. The renal veins open into the inferior cava vein
c. The left artery is longer than the right one
d. The left renal vein is longer than the right one
e. The right renal vein receives the right gonadal vein

Answers

1. b, c
2. b, c, e
3. a, c, d
4. a, b, e
5. a, b, c
6. a, e
7. a
8. a, d, e
9. a, c, e
10. a, b, c, e
11. b, c, d
12. a, c, d, e
13. a
14. b
15. a, b, d
16. c, e
17. a, c, e
18. a, b
19. b, c, d
20. b, c, d, e
21. c, d
22. b, c, e
23. b, c
24. b, c, e
25. a, b, d

Chapter 18

Suprarenal Glands

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Questionnaire

1. The following statements about the suprarenal glands are true:
a. Lie immediately superior and slightly anterior to the superior pole of each kidney
b. Lie immediately inferior and slightly anterior to the inferior pole of each kidney
c. Lie outside the renal fascia
d. Are enclosed within the renal fascia
e. Are surrounded by perinephric fat

2. The microstructure of each suprarenal gland consists of:
a. An outer cortex
b. A thick collagenous capsule
c. An inner cortex
d. An inner medulla
e. An outer medulla

3. The following statements about the right suprarenal gland are correct:
a. It lies anterior to the inferior vena cava
b. It lies posterior to the inferior vena cava
c. It lies posterior to the left lobe of the liver
d. It lies posterior to the right lobe of the liver
e. It lies anterior to the right crus of the diaphragm

4. The suprarenal cortex consists of:
a. An outer, subcapsular part - zona fasciculata
b. An outer, subcapsular part - zona zona reticularis
c. An outer, subcapsular part - zona glomerulosa
d. An inner part - zona reticularis

e. Medullary cortex

5. The suprarenal cortex produces:
a. Sex hormones
b. Adrenaline
c. Hydrocortisone
d. Noradrenaline
e. Aldosterone

6. The suprarenal medulla produces:
a. Sex hormones
b. Adrenaline
c. Hydrocortisone
d. Noradrenaline
e. Aldosterone

7. The following statements about the left suprarenal gland are correct:
a. Is closely applied to the left crus of the diaphragm
b. It is at a large distance from the left crus of the diaphragm
c. The medial surface is covered by the peritoneum of the posterior wall of the lesser sac, which separates it from the stomach
d. The anterior surface is covered by the peritoneum of the posterior wall of the lesser sac, which separates it from the stomach
e. It lies posterior to the inferior vena cava

8. The following statements about the arterial blood supply of the suprarenal glands are correct:
a. Are poorly vascularized
b. Are highly vascularized
c. The branches of the suprarenal arteries form a subcapsular arterial plexus
d. The branches of the suprarenal arteries form an external capsular arterial plexus
e. All suprarenal arteries are branches of the abdominal aorta

9. The superior suprarenal arteries arise from:
a. The ipsilateral renal artery
b. The abdominal aorta
c. The ipsilateral inferior phrenic artery
d. The ipsilateral inferior mesenteric artery
e. The ipsilateral gonadal artery

10. The inferior suprarenal arteries arise from:
a. The ipsilateral renal artery
b. The abdominal aorta
c. The ipsilateral inferior phrenic artery
d. The ipsilateral inferior mesenteric artery
e. May arise also from the ipsilateral gonadal artery

11. The following statements

about the suprarenal veins are correct:
a. The left vein is very short and drains directly in left renal vein
b. The left suprarenal vein is longer and drains into the left renal vein
c. The left suprarenal vein is shorter and drains into the inferior vena cava
d. The right vein is longer and drains into the gonadal vein
e. The right vein is very short and drains directly in the inferior vena cava

12. The following statements about middle suprarenal arteries are correct:
a. Their origin is from the posterior aspect of the abdominal aorta at the level of the superior mesenteric artery origin
b. The right middle suprarenal artery passes posterior to the inferior vena cava
c. The right middle suprarenal artery passes anterior to the inferior vena cava
d. The left middle suprarenal artery passes posterior to the inferior vena cava
e. Their origin is from the lateral aspect of the abdominal aorta at the level of the superior mesenteric artery origin

Answers

1. a, e
2. a, b, d
3. b, d, e
4. c, d
5. a, c, e
6. b, d
7. a, d
8. b, c
9. c
10. a, e
11. b, e
12. b, e

Chapter 19

Prostate, Urethra, Seminal Vesicles and Ductus Deferent

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Questionnaire

1. The location of the urethra at the level of the vesical trigone is:
a. In the infero anterior angle
b. In the infero posterior angle
c. In the lateral angles
d. One side and another of the longitudinal ridge
e. At the apex of the trigon

2. The posterior urethra in male is composed of the following segments:
a. Preprostatic
b. Prostatic
c. Bulbar
d. Pendulous
e. Membranous

3. The prostatic urethra has the following features:
a. The urethral crest is located at the level of the posterior wall
b. The ejaculatory ducts open at the level of the anterior wall
c. The ejaculatory ducts open one side and another of the utricle opening
d. The verumontanum is an elevation at which level the utricle opens
e. The inferior part of the prostatic urethra is mobile

4. The prostatic sinus has the following attributes:
a. Is a median grove that serves for opening of the ejaculatory ducts
b. Is a grove located lateral to the urethral crest
c. At its level prostatic ducts open
d. Is a grove located at the level of the preprostatic urethra
e. Is a grove located at the level

of the prostatic urethra

5. The membranous urethra has the following features:
a. It has the widest diameter from all the segments
b. It is the shortest in length from all the segments
c. Narrowest and least distensible part
d. It passes through the perineal membrane
e. It descends with a dorsal concavity trajectory from the prostate to the penis bulb

6. Arterial supply of the urethra is ensured by the:
a. Circumflex branches of the dorsal penile artery
b. Branches of the external pudendal artery
c. Urethral artery, branch of the internal iliac artery
d. Urethral artery, branch of the internal pudendal artery
e. Urethral artery, branch of the common penile artery

7. The venous drainage of the urethra is done through:
a. The anterior urethra drains into the dorsal veins of the penis
b. The posterior urethra drains into the dorsal veins of the penis
c. The anterior urethra drains into the internal pudendal veins
d. The anterior urethra drains directly into the prostatic plexus
e. The posterior urethra drains into the prostatic and vesical venous plexuses

8. The seminal vesicles have the following features:
a. Are located inferior to the prostate
b. They store sperms
c. They secrete a thick alkaline fluid with fructose and a coagulating agent
d. Are located posterior to the ureters
e. Are located inferior and lateral to the ductus deferens

9. The relations of the seminal vesicles are as follows:
a. Is separated from the rectum by the rectovesical pouch
b. Posterior they have relations with the ureters
c. Anterior they have relations with the urethra
d. Medially, inferior, they join the ductus deferens to form the ejaculatory ducts
e. Are located posterior and superior to the prostate

10. The path of the ductus deferens is:
a. Ascends anterior to the testis and medial to the epididymis
b. Travels from the abdominal cavity to the testis through the

inguinal canal
c. Crosses anterior to the external iliac vessels
d. Passes superficial to the parietal peritoneum
e. In order to rich the urinary bladder it passes into the ureteric fold, posterior to the ureters

11. Which of the following are characteristic for the ejaculatory ducts?
a. Are formed by the union of the seminal glands ducts and the ductus deferens
b. They begin at the level of the base of the urinary bladder
c. They open inside the prostatic utricle
d. They transvers the prostatic gland from posterior to anterior
e. Prostatic secretions mix with the seminal fluid inside the ejaculatory ducts

12. Name the characteristics of the spermatic cord:
a. Is the first segment of the ductus deferens
b. It begins at the level of deep inguinal ring
c. It suspends the testis inside the scrotum
d. Inside the inguinal canal it has relations with the ilioinguinal nerve
e. Inside the inguinal canal it has relations with the genital branch of the genitofemoral nerve

13. The following statements about the prostate are true:
a. Is an endocrine gland
b. Is an exocrine gland
c. Is located anterior to the rectal ampulla
d. It is formed by fatty tissue
e. It has its own capsule

14. The main parts of the prostate are:
a. Head
b. Neck
c. Tail
d. Infero-lateral surfaces
e. Base

15. Name the relationships of the prostate:
a. The prostatic base is in close contact with the urinary bladder base
b. The prostatic base is in close contact with the urinary bladder neck
c. The prostatic base is separated from the rectal ampulla through the rectovesical fascia
d. The prostatic apex is in contact with the perineal muscles
e. The anterior surface is separated from the pubic symphysis by the retroperitoneal fat

16. Name the relationships of

the prostate:
a. The prostatic apex is located superior to the superior urethral sphincter
b. The prostatic apex is located superior to the inferior urethral sphincter
c. The posterior surface is separated from the rectal ampulla through the rectovesical fascia
d. The posterior surface is in contact with the Denonvillier fascia
e. Inferolateral surfaces are in contact with levator ani muscles

17. The subdivisions (lobules) of the right and left prostatic lobes are:
a. Inferoposterior lobule
b. Inferolateral lobule
c. Superomedial lobule
d. Superolateral lobule
e. Anteromedial lobule

18. From an anatomical point of view the prostate can by subdivided into:
a. Anterior zone
b. Posterior zone
c. Peripheral zone
d. Central zone
e. Transitional zone

19. The arterial supply of the prostate is given by the:
a. Branches from the inferior vesical arteries
b. Branches from the middle vesical arteries
c. Branches from the internal pudendal arteries
d. Branches from the middle rectal arteries
e. Branches from the inferior rectal arteries

20. The prostatic innervation is given by the:
a. Pelvic plexus
b. Inferior hypogastric plexus
c. Splanchnic nerves
d. Sacral plexus
e. Pudendal nerve

Answers

1. a, e
2. a, b, e
3. a, b, d
4. b, c, e
5. b, c, d
6. a, c, d
7. a, c, e
8. c, d, e
9. a, d, e
10. c, d, e
11. a, d
12. b, c, d, e
13. b, c, e
14. b, d, e
15. b, d, e
16. a, c, d, e
17. a, b, c, e
18. c, d, e
19. a, c, d
20. a, b, c

Chapter 20

Urinary Bladder

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Questionnaire

1. The urinary bladder is composed of the following anatomical segments:
a. Base (fundus)
b. Neck
c. Apex
d. Two superolateral surfaces
e. Two margins: antero and posterior

2. The posterior relationships of the base of the urinary bladder are:
a. Anterior vaginal wall
b. Rectum
c. Sigmoid colon
d. Denonvilliers' fascia
e. Presacral fascia

3. What are the relationships of the urinary bladder in female?
a. Pubovesical ligaments
b. Cecum
c. Peritoneum membrane covers the superior surface
d. Ileum
e. Pubic symphysis

4. What are the relationships of the urinary bladder in male?
a. Puboprostatic ligaments
b. Pubovesical ligaments
c. Sigmoid colon
d. Peritoneum membrane covers the base
e. Jejunum

5. The ligaments of the urinary bladder are:
a. Pubovesical ligaments that connect the superior surface of the bladder with the pubic bone
b. Pubovesical ligaments that connect the neck of the bladder with the pubic bone
c. Cardinal ligaments
d. Broad ligament

e. Lateral ligament

6. Which of the following structures support the neck of the bladder?
a. Douglas pouch
b. Pubovesical ligaments
c. Uracus
d. The endopelvic fascia
e. Levator ani

7. Arterial supply of the urinary bladder is done by the:
a. Superior vesical arteries
b. Inferior vesical arteries
c. Obturator arteries
d. Inferior gluteal arteries
e. Branches of the external iliac artery

8. The urinary bladder is innervated by the:
a. Parasympathetic fibres that arise from the second to the fourth sacral segments of the spinal cord
b. Parasympathetic fibres from the pelvic splanchnic nerves
c. Sympathetic fibres that arise from the L4 till S2 segments of the spinal cord
d. Sympathetic fibres that arise from the T10 till L2 segments of the spinal cord
e. Sympathetic fibres that arise from the coeliac and mesenteric plexuses

9. Which are the anatomical structures that mark the vesicle trigone?
a. The two urethral openings superior
b. The ureter opening at the anteroinferior angle
c. The urethra opening at the posteroinferior angle
d. The ureters openings one side and another of the superior ridge
e. The urethra orifice at the apex of the trigone

10. Name the location of the vesicle trigone:
a. At the neck of the bladder
b. At the superior wall of the bladder
c. At the base of the bladder
d. At the anterior wall of the bladder
e. At the posterior wall of the bladder

11. **The walls of the urinary bladder have the following layers:**
a. Urothelium
b. Lamina propria
c. Muscularis propria
d. Subserosa
e. Serosa

12. The muscularis propria of

the urinary bladder has the following muscular layers:
a. Internal and external longitudinal layer
b. Intermediate circular layer
c. Internal circular layer
d. Intermediate oblique layer
e. External longitudinal layer

13. A female patient has a tumor at the level of the posterior wall of the urinary bladder. An ultrasound it's performed and it seems that the tumor invades the posterior structures. Name what structures can be involved:
a. Body of the uterus
b. Vagina
c. Ureters
d. Rectum
e. Ileal loops

14. If a patient has a urinary bladder tumor and both of its kidneys have hydronephrosis (that means that urine cannot be drained into the urinary bladder). What would be the most probable location of the tumor in the urinary bladder?
a. Superior part of the vesicle trigone
b. Superior wall of the bladder
c. Inferior part of the vesicle trigone
d. Base of the bladder
e. The urethral orifice

15. What is the name of the anatomical structure that unites the two openings of the ureters inside the urinary bladder?
a. Inter-ureteric bar, is produced by the continuation into the vesical wall of the ureteric internal longitudinal muscle
b. Inter-ureteric bar, is produced by the continuation into the vesical wall of the ureteric internal circular muscle
c. Inter-ureteric ridge
d. Intra-ureteric band
e. Superior trigonal boundary

16. Name the fascia that separates the retrovesical and prostatic space from the prerectal space:
a. Denonvilliers's
b. Retzius
c. Rectovaginal
d. Sacrogenital
e. Cardinal

17. Name the anterior folds ('false' ligaments) linked to the superior surface of the bladder:
a. Median umbilical fold, the urachus
b. Two medial umbilical folds over the obliterated umbilical arteries

c. Two medial umbilical folds over the obliterated inferior epigastric vessels
d. Two lateral umbilical folds over the obliterated umbilicalvessels
e. The lateral umbilical folds over the inferior epigastric vessels

18. Name the space located anterior to the urinary bladder:
a. Vesicogenital
b. Denonvilliers
c. Retropubic
d. Retzius
e. Peritoneal

Answers

1. a, b, c
2. a, b, d
3. a, c, d, e
4. a, c
5. b, c, e
6. b, d, e
7. a, b, c, d
8. a, b, c, e
9. d, e
10. c, e
11. a, b, c, e
12. a, b, e
13. b, c
14. a, d
15. a, c, e
16. a
17. a, b, e
18. c, d

Chapter 21

Uterus

Bartoș Adrian, Iancu Ioana, Bartoș Dana

Corresponding Author and Coordinator of the chapter: Bartoș Dana

Questionnaire

1. What are the divisions of the broad ligament?
a. Upper mesosalpinx
b. Anterior mesovarium
c. Posterior mesovarium
d. Inferior mesometrium
e. Lower mesosalpinx

2. What vascular structure can we find at the base of the broad ligament, approximately 1,5 cm. lateral to the cervix?
a. Uterine artery
b. Uterine vein
c. Ovarian artery
d. Ovarian vein
e. Cervical artery

3. What is the arterial supply of the uterus?
a. Ovarian artery
b. Uterine artery
c. Vaginal artery
d. Internal iliac artery
e. Common iliac artery

4. Name the relationships of the uterus:
a. Anterior – urinary bladder
b. Posterior – urinary bladder
c. Anterior – rectum
d. Posterior- rectum
e. Inferior –vagina

5. What is the venous supply of the uterus?
a. Uterine plexus venous
b. Uterine vein
c. Ovarian vein
d. Vaginal vein
e. Internal iliac vein

6. The innervation of the uterus is done by the:
a. Sympathetic innvervation - Inferior hypogastric plexus
b. Sympathetic innvervation – pelvic splachnic nerves

c. Parasympathetic innervation – inferior hypogastric plexus
d. Prasympatethic innervation – pelvic splachnic nerves
e. Uterovaginal plexus

7. If a tumor is located on the superior part of the posterior wall of the uterus, what other organs might be involved?
a. Rectum
b. Sigmoid colon
c. Ileal loops
d. Jejunal loops
e. Descending colon

8. What important structures pass at the base of the broad ligament?
a. Uterine tube
b. Urethra
c. Uterine artery
d. Ureter
e. Uterine vein

9. Which are the ligaments of the uterus?
a. Suspensory
b. Utero-vesical
c. Utero-rectal
d. Broad
e. Round

10. Which are the features of the round ligament of the uterus:
a. Is composed only of strong fibrous tissue
b. Is composed only of muscular fibres
c. Is composed of both muscular and fibrous tissue
d. It links the inferior part of the lateral walls of the uterus with the labium majus
e. It links the superior part of the lateral walls of the uterus with the labium majus

11. Name the layers of the uterine wall:
a. Endometrium
b. Mucosa
c. Myometrium
d. Adventitia
e. Submucosa

12. Through what structure does the uterus communicate with the ovaries?
a. Uterine tube
b. Fallopian tube
c. Ovarian ligament
d. Suspensory ligament of the ovary
e. Broad ligament

13. What structures does the broad ligament link?
a. Ovary
b. Uterus

c. Uterine tube
d. Vagina
e. Rectum

14. What type of organ is the uterus?
a. Muscular
b. Fibrous
c. Fatty
d. Intraperitoneal
e. Infraperitoneal

15. What is usually the normal position of the uterus in nulliparous state?
a. Anteversion
b. Retroversion
c. Anteflexion
d. Retroflexion
e. Tilted

16. What is the structural division of the uterus?
a. Body
b. Cervix
c. Neck
d. Vulva
e. Vagina

17. Name the location of the uterus:
a. Pelvis
b. Infrapelvic area
c. Abdomen
d. Retroperitoneal
e. Intra peritoneal

18. If a tumor it's located at the base of the broad ligament, near the uterus what structures might be invaded?
a. Uterine vein
b. Uterine artery
c. Ureter
d. Urine bladder
e. Rectum

19. Name the ligaments of the pelvis:
a. Round
b. Uterosacral
c. Uterovesical
d. Transverse cervical
e. Pubocervical

20. Which of the following statements about the layers of the uterus are true?
a. Endometrum is covering the uterine body
b. The endometrum is composed of smooth muscle tissue
c. The myometrum is composed of smooth muscle tissue
d. The endometrum contains secretory glands
e. The uterine body is covered by the serosa

21. The following statements about the uterine artery are true:
a. Its origine – common iliac

artery
b. Its origine – interne iliac artery
c. Gives branches to the ovary
d. Gives branches to the uterine tube
e. Has relationship with the urethra

22. Which of the following statements regarding the broad ligament are true?
a. Is divided into three parts: mesosalpinx, mesovarium and mesometrium
b. Extend on each side of the uterus
c. Superiorly it continues with the peritoneum of the urinary bladder
d. The mesosalpinx is the largest part of the broad ligament
e. The mesosalpinx is attached above to the uterine tube

23. The following statements about the uterus are true:
a. It is mobile
b. Situated in the abdomen between the rectum and the urinary bladder
c. It has posteriorly relationships with the urinary bladder
d. It is divided in three parts: body, cervix and vagina
e. It is a muscular organ

24. Regarding the mesosalpinx the following statements are true:
a. Superior and laterally is attached to the suspensory ligament of the ovary
b. Contains vascular anastomoses between uterine and ovarian vessels
c. Above is attached to the ovary
d. It represents the inferior part of the broad ligament
e. Medially is attached to the ovarian ligament

25. Regarding the mesovarium the following statements are true:
a. It represents the inferior part of the broad ligament
b. It represents the upper part of the broad ligament
c. It represents the posterior part of the broad ligament
d. Is the smaller part of the broad ligament
e. Is attached to the uterine tube

Answers

1. a, b, c
2. a, b, c, d
3. a, c, d
4. a, b, c
5. a, c, d, e
6. b, d, e
7. a, e
8. a, b, c
9. a, b, c, e
10. a, c, d
11. a, c, e
12. a, c, d
13. b, d, e
14. c, e
15. b, c
16. a, d, e
17. a, b
18. a, b, c, e
19. a, c, e
20. b, c, d
21. a, b, d
22. c, d
23. b, c, d
24. a, c, d, e
25. b, d, e
26. a, c
27. a, b, c, e
28. b, d, e

Chapter 22

Ovaries and Fallopian Tubes

Căpraș Roxana, Bartoș Dana, Bartoș Adrian

Corresponding Author and Coordinator of the chapter: Bartoș Adrian

Questionnaire

1. What does the mesosalpinx attaches to?
a. Superior to the uterine tube
b. Posteroinferiorly to the mesovarium
c. Superior and laterally to the suspensory ligament of the ovary
d. Inferior to the mesovarium
e. Laterally to the ovarian ligament

2. What are the main parts of the uterine tubes?
a. Intramural
b. Isthmus
c. Ampulla
d. Fimbria
e. Body

3. What are the features of the uterine tube fimbriae?
a. Mucosal finger-like folds located at the ends of the infundibulum
b. Mucosal finger-like folds located at the ends of the ampulla
c. All fimbriae are covered with ciliated epithelium
d. Vascularization is derived from ovarian and uterine arteries
e. Vascularization is derived from the cervical arteries

4. The innervation of the fallopian tubes is done by the:
a. Parasympathetic fibers derived from pelvic splanchnic and vagus nerves
b. Both parasympathetic and sympathetic fibers

c. Sympathetic fibers derived from the superior hypogastric plexus
d. Parasympathetic fibers that are derived from the phrenic nerve
e. Only parasympathetic fibers

5. Typically, fertilization does not take place in:
a. Uterus
b. Ampullary portion of fallopian tube
c. Intramural portion of fallopian tube
d. Ovaries
e. Isthmus portion of fallopian tube

6. Which of the following affirmations are true?
a. The uterine tube consists of 4 main parts: ampulla, isthmus, cervix and fimbria
b. Fimbriae have numerous mucosal finger-like folds
c. The uterine tubes are attached to the lower part of the body of the uterus
d. Ampulla is the widest portion of the tube
e. The uterine os is located at the superior angle of the uterine cavity

7. The blood supply to the uterine tubes is derived from:
a. Ovarian artery
b. Umbilical artery
c. Superior rectal artery
d. Inferior rectal artery
e. Uterine artery

8. Venous drainage of the uterine tubes is:
a. Ensured by the pampiniform plexus
b. Ensured by uterine plexus
c. Done to inferior vena cava on the right side
d. Done to inferior vena cava on the left side
e. Done to renal vein on the right side

9. The relationships of the ovary are:
a. Above the superior extremity are the fimbria and distal section of the uterine tube.
b. The lateral surface contacts parietal peritoneum in the ovarian fossa.
c. The posterior border is free and faces the peritoneum.
d. Under the inferior extremity are the fimbria and distal section of the uterine tube.
e. Laterally is suspended in the pelvic cavity by a double fold of peritoneum, the mesovarium.

10. Innervation of ovaries and uterine tubes is done by:
a. Parasympathetic fibers derived from pelvic splanchnic nerves

b. Only parasympathetic fibers
c. Sympathetic fibers derived from the superior hypogastric plexus
d. parasympathetic fibers are derived from the vagus
e. Only sympathetic fibers

11. Lymphatic drainage of the uterine tubes is provided by:
a. Para-aortic nodes via ovarian vessels
b. Para-aortic nodes via the round ligament
c. Inguinal nodes via the round ligament
d. External iliac chain via ovarian vessels
e. Internal iliac chain via uterine vessels

12. Anatomical relations of the ovary are:
a. On the left side, the sigmoid colon passes over the superior pole of the ovary
b. The anterior border is free and faces the peritoneum
c. On the right side, superior and lateral to the ovary is the ileocaecal junction
d. On the right side, superior and lateral to the ovary are the caecum and appendix
e. The lateral surface faces the broad ligament of the uterus

13. The suspensory ligament of the ovary has the following attributed:
a. The only ligamentous support
b. Attached to the upper part of the lateral surface of the ovary
c. Passes inferiorly under the ureter
d. Contains the ovarian vessels and nerves
e. Passes superiorly over the external iliac vessels

14. The ovarian ligament of the ovary has the following attributed:
a. Contains the ovarian vessels and nerves
b. It lies in the anterior leaf of the broad ligament
c. Attaches the uterine extremity of the ovary to the lateral angle of the uterus
d. Attaches the uterine extremity of the ovary to the lateral angle of the cervix
e. It lies in the posterior leaf of the broad ligament

15. Mesovarium has the following attributed:
a. It is the main ligamentous support
b. It carries blood vessels and nerves to the ovarian hilum

c. It is a peritoneal fold that attaches the ovary
d. Attaches the ovary to the anterior surface of the broad ligament
e. It lies in the anterior leaf of the broad ligament

16. Ligamentous support of the ovary:
a. Includes the suspensory ligament
b. Does not contain the ovarian vessels and nerves
c. Consist of the suspensory ligament and the mesovarium
d. Contain the ovarian vessels and nerves (infundibulopelvic ligament)
e. Includes the ovarian ligament

17. The ovarian arteries originate from:
a. The abdominal aorta
b. Below the renal arteries
c. The renal artery
d. The internal iliac artery
e. Above the renal arteries

18. The ovarian arteries have the following attributes:
a. Give branches that accompany the round ligaments through the inguinal canal
b. Descend behind the peritoneum
c. Splits into two branches: one to the mesovarium and one into the uterine broad ligament
d. Supplies only the ovary
e. Supplies the ovary and the tube

19. Venous drainage of the ovary is done by the:
a. Pampiniform plexus
b. Inferior vena cava on the left side
c. Inferior vena cava on the right side
d. Renal vein on the right side
e. Renal vein on the left side

20. Lymphatic drainage of the ovaries is done though:
a. Para-vaginal nodes
b. Lower para-aortic nodes
c. Para-aortic nodes near the origin of the renal arteries
d. Inguinal nodes via round ligament
e. Inguinal nodes via infundibulo-pelvic ligament

21. After puberty, the ovarian cortex has the following attributes:
a. Contains the ovarian follicles
b. Contains corpora lutea
c. Is highly vascular
d. Contains corpus albicans
e. Is also called albuginea

22. The following affirmations, are correct in concern with the primary follicle:
a. It is also called Graafian follicle
b. Develops from secondary follicle
c. Develops from primordial follicle
d. Is located in ovarian cortex
e. Is located in ovarian medulla

23. Which of the following statements are true in regard with the secondary follicle?
a. Develops from primordial follicle
b. Develops into a tertiary follicle
c. Develops from primary follicle
d. Contains the oocyte
e. Usually only one secondary follicle develops

24. The following affirmations, are correct in concern with the tertiary follicle:
a. Develops from secondary follicle
b. Develops from corpus luteum
c. Expands to a diameter of 2 cm
d. If fertilization does not occur, it begins to degenerate after 24–48 hours
e. Only one tertiary follicle develops

25. Which of the following statements are true in regard with the corpus luteum:
a. If fertilization does occur it becomes corpus albicans
b. Develops from Graafian follicle after ovulation
c. Develops from corpus albicans
d. It degenerates to form a corpus albicans if the oocyte is not fertilized
e. If fertilization does occur it becomes corpus luteum of pregnancy

26. Ovarian medulla has the following attributes:
a. Is highly vascular
b. Is separated from cortex by the albuginea
c. Contains a small number of cells
d. Contains corpus albicans
e. Contains the primordial follicle

27. The ovary has the following features:
a. Dimensions are 4 × 2 × 3 cm in reproductively mature women
b. Is not covered by peritoneum
c. Is suspended by mesovarium
d. Is suspended by the round ligament

e. Is suspended by the infundibulopelvic ligament

28. The ovarian fimbria has the following features:
a. Is shorter than the others
b. Is longer and more deeply grooved than the others
c. Is applies to the tubal pole of the uterus
d. Is covered by a ciliated epithelium
e. Is applies to the tubal pole of the ovary

Answers

1. a, b, c
2. a, b, c, d
3. a, c, d
4. a, b, c
5. a, c, d, e
6. b, d, e
7. a, e
8. a, b, c
9. a, b, c, e
10. a, c, d
11. a, c, e
12. a, c, d
13. b, d, e
14. c, e
15. b, c
16. a, d, e
17. a, b
18. a, b, c, e
19. a, c, e
20. b, c, d
21. a, b, d
22. c, d
23. b, c, d
24. a, c, d, e
25. b, d, e
26. a, c
27. a, b, c, e
28. b, d, e

Chapter 23

Arteries, Veins and Nerves

Bartoș Dana, Bartoș Adrian, Szabo Bianca

Corresponding Author and Coordinator of the chapter: Szabo Bianca

Questionnaire

1. Name the branches of the thoracic aorta:
a. Brachiocephalic trunk
b. Left common carotid
c. Visceral branches to the lungs
d. Parietal branches to the thoracic wall
e. Right common carotid

2. Name the branches of the abdominal aorta:
a. Gastric arteries
b. Splenic artery
c. Inferior mesenteric artery
d. Lumbar arteries
e. Gonadal arteries

3. The portal vein is form by the union of:
a. Superior mesenteric vein
b. Splenic vein
c. Hepatic vein
d. Colic vein
e. Gastric vein

4. Name the branches of the celiac trunk:
a. Left gastric artery
b. Right gastric artery
c. Splenic artery
d. Proper hepatic artery
e. Common hepatic artery

5. The superior mesenteric artery has the following relationships:
a. Posterior to the forth duodenal segment
b. Anterior to the third duodenal segment
c. On the left side of the superior mesenteric vein
d. Running inside the mesentery
e. On the right side of the

duodeno-jejunal junction

6. Name the collaterals of the splenic artery:
a. Dorsal pancreatic
b. Anterior pancreatic
c. Left gastric
d. Left gastro-colic
e. Short gastric

7. Name the collaterals of the superior mesenteric artery:
a. Inferior pancreatico-duodenal arteries
b. Right gastro-epiploic artery
c. Middle colic artery
d. Left colic artery
e. Ileo-colic artery

8. Name the relationships of the portal vein inside the hepatoduodenal ligament:
a. Posterior to the common bile duct
b. Posterior to the common hepatic artery
c. Anterior to the proper hepatic artery
d. The bile duct is on a more anterior and to the right plane
e. It is the most anterior element

9. Which are the tributaries of the portal vein:
a. Left gastric vein
b. Right gastric vein
c. Right gastro-epiploic vein
d. Hepatic vein
e. Posterior superior duodeno-pancreatic vein

10. The gonadal veins are tributaries of the:
a. Portal vein
b. Inferior vena cava
c. Renal vein
d. Superior mesenteric vein
e. Inferior mesenteric vein

11. Which are the relationships of the superior mesenteric bundle?
a. Rests on the right side of the duodeno-jejunal junction
b. Rests on the left side of the duodeno-jejunal junction
c. Runs at the base of the mesentery
d. Passes posterior to the third part of the duodenum
e. Passes anterior to the third part of the duodenum

12. Name the branches of the internal iliac artery:
a. Internal pudendal
b. Femoral artery
c. Obturator artery
d. Uterine artery
e. Lumbar arteries

13. Which are the relationships of the common iliac artery?

a. The ureter passes anterior to it
b. The ureter passes posterior to it
c. It rests on the anterior side of the iliac muscle
d. It rests on the anterior side of the psoas muscle
e. It's origin is anterior the forth lumbar vertebra

14. Name the branches of the lumbar plexus:
a. Superior gluteal
b. Iliohypogastric nerve
c. Ilioinguinal nerve
d. Sciatic
e. Genitofemoral nerve

15. Name the branches of the sacral plexus:
a. Superior gluteal
b. Inferior gluteal nerve
c. Ilioinguinal nerve
d. Sciatic
e. Genitofemoral nerve

16. Which are the relationships of the ilioinguinal nerve:
a. Passes anterior to the iliopsoas muscle
b. Passes anterior to the gonadal vessels
c. Passes anterior to the ureter
d. Passes anterior to the quadratus lumborus muscle
e. Runs through the inguinal canal

17. If a tumor grows at the level of the posterior superior part of the body of the pancreas what important arterial and nervous structures might be invaded?
a. Splenic artery
b. Coeliac trunk
c. Coeliac plexus
d. Right gastric artery
e. Proper hepatic artery

18. Name the location of the areas where portal cave anastomosis occurs:
a. Middle segment of the oesophagus
b. Inferior segment of the oesophagus
c. Middle and superior segments of the rectum
d. Pancreatic area
e. Periumbilical

19. Name the cavo caval anastomosis:
a. Lumbar veins and colic veins
b. Lumbar veins with the azygos vein
c. Inferior epigastric with superior epigastric
d. Inferior oesophageal with superior oesophageal veins
e. Renal veins with lumbar veins

20. What does the inferior hypogastric plexus innervate?
a. Vas deferens
b. Seminal vesicles
c. Prostate
d. Colon
e. Uterus

21. Which arteries pass through the gastrocolic ligament?
a. Right gastric
b. Left gastric
c. Right gastroepiploic
d. Left gastroepiploic
e. Short gastric arteries

22. Name the tributaries of the superior mesenteric vein in the supramesocolic compartment:
a. Right colic vein
b. Left colic vein
c. Right gastrocolic vein
d. Iliac veins
e. Inferior duodenopancreatic veins

23. Name the tributaries of the superior mesenteric vein in the inframesocolic compartment:
a. Right colic vein
b. Left colic vein
c. Middle colic vein
d. Jejunal veins
e. Ilio-colic vein

24. Name the collaterals of the inferior mesenteric artery:
a. Left colic artery
b. Right colic artery
c. Middle colic artery
d. Superior rectal artery
e. Inferior rectal artery

25. The coeliac plexus receives fibers from the following nerves:
a. Greater splanchnic nerve
b. Lesser splanchnic nerve
c. Vagal trunks
d. Phrenic nerve
e. Subcostal nerve

Answers

1. a, b, c, d
2. c, d, e
3. a, b
4. a, c, e
5. b, c, e
6. a, d, e
7. a, c, e
8. a, d
9. a, b, e
10. b, c
11. a, c, e
12. a, c, d
13. a, d, e
14. b, c, e
15. a, d
16. a, d, e
17. a, b, c
18. b, c, e
19. a, c
20. a, b, c, e
21. c, d
22. c, e
23. a, c, d, e
24. a, d
25. a, b, c

Chapter 24

Peritoneum

Bartoș Adrian, Szabo Bianca, Bartoș Dana

Corresponding Author and Coordinator of the chapter: Bartoș Dana

Questionnaire

1. Which of the following are intraperitoneal organs:
a. Stomach
b. Spleen
c. Head of the pancreas
d. Tail of the pancreas
e. Kidneys

2. Which of the following are intraperitoneal organs:
a. Rectum
b. Suprarenal gland
c. Transvers colon
d. Second part of duodenum (D2)
e. Last centimeters of the duodenum

3. Which of the following are extraperitoneal organs:
a. Liver
b. Head of pancreas
c. Kidney
d. Sigmoid colon
e. Ascending colon

4. Which of the following are extraperitoneal organs:
a. Body of the pancreas
b. Jejunum
c. Descending colon
d. Appendix
e. Liver

5. The boundaries of the omental foramen (Winslow hiatus, epiploic foramen) are:
a. Anteriorly: free edge of lesser omentum
b. Anteriorly: free edge of greater omentum
c. Posteriorly: the inferior vena

cava covered by peritoneum
d. Posteriorly: the right crus of the diaphragm
e. Posteriorly: the portal vein

6. The boundaries of the omental foramen (Winslow hiatus, epiploic foramen) are:
a. Superiorly: the caudate lobe of the liver covered by peritoneum
b. Superiorly: the duodenum
c. Inferiorly: the superior margin of the first part of the duodenum
d. Inferiorly: the jejunal loops
e. Superiorly: the quadrate lobe of the liver covered by peritoneum

7. Anterior wall of bursa omentalis is form by the following structures:
a. Anterior wall of the stomach
b. Posterior wall of the stomach
c. Gastrocolic ligament
d. Pancreas
e. Transverse mesocolon

8. Posterior wall of bursa omentalis is form by the following structures:
a. Pancreas
b. Inferior portion of diaphragm
c. Posterior parietal peritoneum
d. Stomach
e. Kidneys

9. The Douglas pouch is limited by the following structures:
a. Anterior- the urinary bladder in males
b. Posterior- the rectum in males
c. Porterior- the rectum in females
d. Anterior- the urinary bladder in females
e. Anterior- the uterus

10. Which of the following blood vessels can be found inside the mesentery:
a. Inferior vena cava
b. Inferior mesenteric artery
c. Superior mesenteric artery
d. Jejunal and ileal arteries
e. Superior mesenteric vein

11. The root of the transvers mesocolon has the following posterior relationships:
a. Second part of the duodenum
b. First part of the duodenum
c. Head of the pancreas
d. Tail of the pancreas
e. Stomach

12. The root of the sigmoid mesocolon has the following posterior relationships:
a. Left ureter
b. Left gonadal vessels
c. Left common iliac vessels
d. Kidney

e. Urinary bladder

13. What are the relationships of the peritoneum in regard with the liver:
a. It covers the whole surface of the liver
b. Forms the coronary ligament
c. Consists in right and left triunghiular ligaments
d. It is represented by the greater omentum
e. Also includes the hepatogastric ligament

14. Which of the peritoneal ligaments are part of the lesser omentum?
a. Gastrocolic ligament
b. Gastrophrenic ligament
c. Triunghiular ligament
d. Hepatogastric ligament
e. Coronary ligament

15. Which of the peritoneal ligaments are part of the greater omentum?
a. Round ligament
b. Phrenic ligament
c. Gastrocolic ligament
d. Coloepiploic ligament
e. Gastrohepatic ligament

16. What structures can be seen in a midsagittal section at the level of the abdominal cavity?
a. Liver
b. Pancreas
c. Greater omentum
d. Ascending colon
e. Descending colon

17. What structures can be seen in a transvers section at the level of the Winslow hiatus?
a. Kidneys
b. Pancreas
c. Superior vena cava
d. Spleen
e. Transverse mesocolon

18. Which of the following structures are located in the supramesocolic compartment?
a. Urinary bladder
b. Ileal and jejunal loop
c. Liver
d. Stomach
e. Head of the pancreas

19. Which of the following structures are located in the inframesocolic compartment?
a. Kidneys
b. Spleen
c. Ovaries
d. Cecum
e. Ascending colon

20. The paracolic gutter is a

space located between the following structures:
a. Abdominal wall
b. Transverse mesocolon
c. Ascending colon
d. Descending colon
e. Pelvic walls

21. The arterial supply of the epiploic apron is done by branches of the:
a. Right gastro omental artery
b. Ileal arteries
c. Right colic artery
d. Sigmoidian arteries
e. Jejunal arteries

22. What structures are part of the broad ligament?
a. Fallopian tubes
b. Ovary
c. Ureters
d. Mezosalpinx
e. Mesovarium

23. What main arteries pass through the gastro-colic ligament?
a. Left gastric artery
b. Right gastroepiploic artery
c. Left gastroepiploic artery
d. Middle colic artery
e. Hepatic artery

24. What main arteries pass through the gastro-splenic ligament?
a. Left colic artery
b. Short gastric arteries
c. Splenic arteries
d. Right gastroepiploic artery
e. Hepatic artery

25. What does "bare area" of the liver mean?
a. An area without vascularization
b. An area without peritoneum
c. An area located at the level of the hilum
d. An area surrounded by the coronary ligament
e. An area surrounded by the falciform ligament

Answers

1. a, b, d
2. c, e
3. b, c, e
4. a, c, e
5. a, c, d
6. a, c
7. b, c
8. a, b, c
9. a, b, e
10. c, d, e
11. a, c
12. a, b, c
13. b, c
14. b, d
15. c, d
16. a, b, c
17. a, b, d
18. c, d
19. d, e
20. a, c, d
21. a
22. d, e
23. b, c
24. b, c
25. b, d

Chapter 25

Pelvis Cavity and Perineum

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Questionnaire

1. The following affirmations about perineum are true:
a. Is the diamond-shaped region that lies above levator ani
b. Divides into an urogenital triangle and a anal triangle
c. Is bounded posteriorly by the pubic symphysis
d. Is bounded posterolaterally by the sacrotuberous ligaments
e. Deep limit is the inferior surface of the pelvic diaphragm

2. Anal triangle contains:
a. The ischio-anal fossa
b. The bulb and attachments of the penis in male
c. Similar structures in males and females
d. The labia majora, the labia minora, the clitoris in female
e. The anal canal and its sphincters

3. Which of the following statements are true about the anal triangle?
a. Anal triangle it is lined by by a strong perineal membrane
b. Anal triangle it is lined by superficial and deep fascia
c. The deep fascia lines the inferior surface of levator ani
d. The deep fascia lines the superior surface of levator ani
e. The superficial fascia is continuous with subcutaneous fascia of the skin of the perineum.

4. Ischio-anal fossa can be characterized as having the following attributes:
a. It is filled with muscles, fasciae

and erectile structures
b. Is an approximately horse-shoe-shaped region
c. Has an anterior recess that lies caudally to the perineal membrane
d. It is filled with loose adipose tissue, blood vessels and nerves
e. Has an anterior recess that lies cranial to the perineal membrane

5. About the external anal sphincter, we can state that:
a. Fibers decussate into the superficial transverse perineal muscles-anteriorly
b. Fibers are attached to the anococcygeal raphe-posteriorly
c. Is a band of smooth muscle
d. Is a band of striated muscle
e. Surrounds the lowest part of the anal canal

6. Which of the following statements are false?
a. Anococcygeal ligament is a membranous structure
b. Anococcygeal ligament is a musculotendinous structure
c. Iliococcygeal raphe lies above the anococcygeal ligament
d. Iliococcygeal raphe lies below the anococcygeal ligament
e. The iliococcygeal raphe is separated from the rectum by presacral fascia

7. Urogenital triangle has the following attributes:
a. Is divided into a deep and a superficial perineal space by a strong perineal membrane
b. Extends superficially to encompass the scrotum- in males
c. Extends to the upper limit of the labia and mons pubis-in females
d. Includes muscles, fasciae, erectile structures-in females
e. Is bounded deeply by the pubic symphysis and ischiopubic rami-posteriorly

8. The relationships of the perineal membrane are:
a. The ventral portion is related to the support of the perineal body
b. Is part of a larger interconnected support apparatus
c. Is intimately connected with levator ani
d. Is crossed by ducts of the bulbourethral glands in males
e. The dorsal portion is contiguous with the urethral supportive apparatus

9. Which of the following state-

ments are true:
a. Dorsal vessels and nerves of the penis lie within perineal membrane fibres
b. Perineal membrane is crossed by the vessels and nerves to the bulb of the penis
c. The vagina is attached to the perineal membrane at the level of the hymenal ring
d. The perineal membrane is divided almost into two halves by the vagina and urethra
e. Anterior border of the perineal membrane is continuous with the perineal body

10. Urethral sphincter mechanism consists of:
a. Striated and smooth muscle sphincters
b. Smooth muscles like: compressor urethrae, urethrovaginal sphincter in females
c. Only striated muscle sphincters
d. Striated muscles like: compressor urethrae, urethrovaginal sphincter in females
e. Only smooth muscle sphincters

11. Innervation of the urethral sphincter mechanism is done by:
a. Perineal branch of the inferior rectal nerve
b. Perineal branch of the pudendal nerve
c. Sacral plexus and the pelvic splanchnic nerves
d. Nerves that originate in the second, third and fourth sacral spinal segments
e. Nerves that originate in the second, third and fourth thoracic spinal segments

12. Superficial perineal fascia is:
a. Continuous with the Scarpa's fascia
b. Attached to the margins of the ischiopubic rami-laterally
c. Attached to the margins of the ischiopubic rami-posteriorly
d. Continuous with the fascial layer that contains the dartos muscle in male
e. Continuous with the fascial layer that contains the dartos muscle in female

13. Name the features of deep perineal fascia:
a. Is continuous with the Scarpa's fascia
b. Is firmly attached to posterior margin of the perineal membrane
c. Fuses with the suspensory ligament of the penis or clitoris-

anteriorly
d. Overlies the superficial muscles of the perineum
e. Is firmly attached to perineal body

14. Subcutaneous perineal pouch can be characterized as:
a. Does not allow fluid to pass to the subcutaneous tissues of the anterior abdominal wall
b. Allows fluid to spread laterally into the medial thigh
c. Allows fluid to pass posteriorly into the anal triangle
d. Lies between the deep perineal fascia and the superficial perineal fascia
e. Is capable of expanding considerably in the presence of fluid accumulation

15. Superficial perineal pouch can be characterized as:
a. Does not contain the superficial transverse perineal muscles
b. Lies between the perineal membrane and the deep perineal fascia
c. Does not contain the clitoris
d. Does not communicate with the deep or subcutaneous pouches
e. It contains the corpora cavernosa and corpus spongiosum

16. Perineal body can be characterized as:
a. Is located in the midline at the junction between the anal and urogenital triangles
b. Is not continuous with the perineal membrane
c. Inferiorly, it is continuous with the rectoprostatic or rectovaginal septum
d. Anteriorly, it merges with fibres of the external anal sphincter
e. It is an aggregation of fibromuscular tissue

17. Bulbospongiosus muscle can be characterized as:
a. It lies in the midline, anterior to the perineal body
b. It lies in the midline, posterior to the perineal body
c. Consists of two parts united by a fibrous raphe in male
d. Differs between the sexes
e. On each side covers the vestibular bulbs and greater vestibular glands in male

18. Ischiocavernosus muscle can be characterized as:
a. Attaches to the perineal body
b. May help to maintain penile erection

c. In male, it covers the crus penis
d. Helps to empty the urethra of urine after the bladder has emptied
e. It is attached to the medial aspect of the ischial tuberosity

19. Vascular supply of the perineum is given by the:
a. Perineal artery that supplies the perineal body
b. Cavernous artery that supplies the corpora cavernosa of the clitoris
c. External pudendal artery that supplies the deep portion of the external anal sphincter
d. Inferior rectal artery that supplies the deep portion of the external anal sphincter
e. Cavernous artery that supplies the perineal body

20. Internal pudendal artery has the following attributes:
a. It divides into the cavernous and dorsal arteries of the penis-in males
b. Enters the perineum around the posterior aspect of the ischial spine
c. Is distributed to the erectile tissue of the corpus spongiosum and vagina in females
d. It supplies the perineal body through accessory pudendal artery
e. It supplies the deep portion of the external anal sphincter via perineal artery

21. Inferior rectal artery has the following attributes:
a. Enters the perineum around the posterior aspect of the ischial spine
b. It divides into the cavernous and dorsal arteries of the penis
c. Runs anteromedially through the ischio-anal fossa
d. Is distributed to the erectile tissue of the corpus spongiosum
e. Supplies the deep portion of the external anal sphincter

22. Perineal artery has the following attributes:
a. It supplies the perineal body
b. It supplies the scrotal skin and dartos muscle via terminal branches
c. Is a branch of the internal pudendal artery
d. It supplies the upper portion of the external anal sphincter
e. It divides into the cavernous and dorsal arteries of the penis

23. Innervation of the perineum is given by the:

a. The dorsal nerve of the penis supplies the skin of the scrotum
b. The dorsal nerve of the penis or clitoris supplies the corpus cavernosum
c. The inferior rectal nerve supplies the external anal sphincter
d. The inferior rectal nerve may supply the lower part of the vagina
e. The perineal nerve supplies sensory fibres to the skin of the lower vagina

24. The osseofibrous boundaries of the perineum are the:
a. Pubic symphysis, anteriorly
b. Ischiopubic rami, posterolaterally
c. Ischial tuberosities, laterally
d. Sacrotuberous ligaments, anterolaterally
e. Ischial tuberosities, posteriorly

25. In the perineal body converge several muscles, name the muscles:
a. Bulbospongiosus
b. Ischiocavernosus
c. External anal sphincter
d. Internal anal sphincter
e. Superficial and deep transverse perineal

26. Name the true ligaments of the pelvis:
a. Broad ligament
b. Round ligament
c. Douglas pouch
d. Uterosacral ligament
e. Transverse cervical and pubocervical ligaments

Answers

1. b, d, e
2. a, c, e
3. b, c, e
4. b, d, e
5. a, b, d, e
6. a, d
7. a, b, d
8. b, c, d
9. b, c, d
10. a, d
11. b, c, d
12. a, b, d
13. b, c, d, e
14. d, e
15. b, d, e
16. a, e
17. a, c, d
18. b, c, e
19. a, b, d
20. a, b, c
21. c, e
22. a, b, c
23. b, c, d, e
24. a, c
25. a, c, e
26. b, d, e