Anatomy: Posterior Abdomen and Pelvis

Question 1 of 119

The ureters arise at which of the following vertebral levels:

a) T10  
b) T11  
c) T12  
d) L1  
e) L2

Next >  See Answer

Something wrong?
Anatomy: Posterior Abdomen and Pelvis

Question 1 of 11

The ureters arise at which of the following vertebral levels:

a) T10  
X  
T11  
T12  
L1  
L2  

Answer

The ureters are continuous superiorly with the renal pelvis at the ureteropelvic junction (at the level of the renal hilum; vertebra L1).

Notes

The ureters are muscular tubular tubes that transport urine from the kidneys to the bladder. They are continuous superiorly with the renal pelvis at the ureteropelvic junction (at the level of the renal hilum, vertebra L1).

Anatomical course and relations

 Inferior to the ureteropelvic junction, the ureters descend retroperitoneally on the medial aspect of the psoas major muscle, anterior to the tips of the transverse processes of the lower lumbar vertebrae. The ureters cross the pelvic brim anterior to the bifurcation of the common iliac arteries to enter the pelvic cavity and continue their journey down the lateral pelvic walls.

Within the pelvic cavity, the ureters are crossed by the inferior mesenteric artery and vein coursing superior to the obturator nerve, and by the ureteric plexus just posterior to the bladder in men.

At the level of the lateral pelvic plexus, they turn anteromedially, moving in transverse plane towards the bladder. The ureters enter the bladder obliquely through the base of the bladder at the level of the pubic tubercle.

The right ureter lies in close relation to the appendix, and thus irritated in acute appendicitis causing urinary frequency.

Constrictions

At three points along their course, the ureters are constricted:

- the first point is at the ureteropelvic junction
- the second point is where the ureters cross the pelvic brim
- the third point is where the ureters enter the wall of the bladder.

Kidney stones can become lodged at these constrictions.

Renal colic pain

Visceral referral fibres from the ureters enter the spinal cord at T11 – L2; with renal colic pain (usually from ureteric distension) thus referred to the dermatomes supplied by T11 – L2; the posterior and lateral abdominal wall below the ribs and above the iliac crest, the public region, the scrotum in males, the labia majora in females and the proximal anterior aspect of the thigh (in women) groin/pain.

Resources

- The Royal College of Emergency Medicine
- VTS Association for Emergency Medicine
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Anatomy: Posterior Abdomen and Pelvis

Question 2 of 119

The left kidney is related anteriorly to all of the following structures EXCEPT for the:

- a Head of the pancreas
- b Stomach
- c Spleen
- d Duodenojejunal flexure
- e Descending colon

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Anatomy: Posterior Abdomen and Pelvis

Key points in understanding the anatomy

1. **Muscles:**
   - The psoas muscle is a key muscle in the posterior abdominal wall.
   - The rectus abdominis muscle is not present in the posterior abdomen.

2. **Arteries:**
   - The posterior superior ileal artery is a key artery in the posterior abdomen.
   - The inferior mesenteric artery is not present in the posterior abdomen.

3. **Veins:**
   - The inferior mesenteric vein is a key vein in the posterior abdomen.
   - The superior mesenteric vein is not present in the posterior abdomen.

4. **Nerves:**
   - The sacral plexus is a key nerve in the posterior abdomen.
   - The lumbar plexus is not present in the posterior abdomen.

5. **Lymph nodes:**
   - The celiac nodes are the key nodes in the posterior abdomen.
   - The retroperitoneal nodes are not present in the posterior abdomen.

**References**

Anatomy: Posterior Abdomen and Pelvis

Question 3 of 119

The iliacus muscle acts to produce which of the following movements:

- Flexion of the thigh at the hip joint
- Extension of the thigh at the hip joint
- Lateral flexion of the trunk
- Extension of the trunk
- Lateral rotation of the thigh at the hip joint

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Anatomy: Posterior Abdomen and Pelvis

**Question 1 of 20**

Title of the page: "The posterior abdominal and pelvic region"

**Answer**

The posterior abdominal and pelvic region is essential for understanding the anatomical structures that support and house crucial bodily functions. This region encompasses various organs and systems, each playing a vital role in maintaining overall health and well-being. It is crucial to have a thorough understanding of this area to ensure proper diagnosis, treatment, and care for patients with conditions affecting this region.

**Notes**

- The posterior abdominal and pelvic region include organs and structures such as the kidneys, liver, spleen, and reproductive organs.
- Knowledge of this area is essential for professionals in medicine, nursing, and health sciences.
- The region is divided into several parts, including the posterior abdominal wall and the pelvic cavity.
- Understanding the blood supply and neural innervation of this region is crucial for surgical planning and patient care.

**References**

1. *Anatomy: Posterior Abdominal and Pelvis*
2. *Clinical Anatomy of the Posterior Abdominal and Pelvic Region*

**Diagrams/Animations**

- Diagram of the posterior abdominal and pelvic region
- Illustrations of anatomical structures

**Relevant Links**

- [Posterior Abdominal and Pelvic Region: Anatomical Overview](#)
- [Posterior Abdominal and Pelvic Region: Functional Aspects](#)
- [Posterior Abdominal and Pelvic Region: Clinical Applications](#)
Anatomy: Posterior Abdomen and Pelvis

Question 4 of 119

The quadratus lumborum muscle is innervated by which of the following:

- Iliohypogastric nerve
- Ilioinguinal nerve
- Anterior rami of L2 - L4
- Anterior rami of T9 - T12
- Anterior rami of T12 - L4

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### Anatomy: Posterior Abdomen and Pelvis

**Muscles**

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Extent</th>
<th>Action</th>
<th>Innervation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadratus lumborum (inner)</td>
<td>Origin at transverse T12-L1, inserts into iliac crest</td>
<td>Flexes hip, adducts leg</td>
<td>Anterior and posteromedial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and extends lumbar spine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quadratus lumborum (outer)</td>
<td>Fibers from L1 to L5, insert into iliac crest</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gluteus maximus</td>
<td>Origin at posterior to L5, inserts into greater trochanter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Nerves:**

The psoas major arises from the iliacus of the transverse processes of the vertebrae of the T10 to L5 vertebrae, respectively. It is composed of the anterior division of the lumbar plexus, the anterior division of the hip flexor muscles. It attaches to the iliacus by a tendinous arch, forming the iliopsoas muscle. It is a large muscle involved in hip flexion and knee extension. It is innervated by the lumbar nerve root L1 to L4, respectively.

**Clues:**

- The psoas major is the deepest muscle of the anterior abdominal wall. It is innervated by the lumbar plexus (L1 to L4).
- The psoas major is important in mobility, function, and distribution of innervation.

**References:**

- Headland and PRS. Source: Image by Henry Vandersluis
- Curtis Driscoll, James F. Local Anesthesia

---

**Question:** Anatomy of the posterior abdomen and pelvis.

**To be answered:** The quadratus lumborum muscle is innervated by which of the following?

- Anterior and posteromedial branches of the T12 spinal nerve
- Anterior and posteromedial branches of the L1 spinal nerve
- Anterior and posteromedial branches of the L3 spinal nerve
- Anterior and posteromedial branches of the L5 spinal nerve

**Answer:** The quadratus lumborum muscle is innervated by the anterior and posteromedial branches of the T12 and L1 spinal nerves.

---

**Notes:**

The most important muscles of the posterior abdominal wall are the quadratus lumborum, the iliacus, and the psoas major. They play a crucial role in the mechanics of the lumbar spine. The quadratus lumborum muscle is a true rotator muscle, which is involved in the lumbar spine's rotation.
Anatomy: Posterior Abdomen and Pelvis

Question 5 of 119

Which of the following parts of the urethra penetrates the urogenital diaphragm:

- Preprostatic urethra
- Prostatic urethra
- Membranous urethra
- Spongy urethra
- Urethral crest

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Anatomy: Posterior Abdomen and Pelvis

Properitoneal arches:
- Posterior arches
  - Transverse arch
  - Common channel
  - Conventional

Properitoneal arches
- Posterior arches
  - Transverse arch
  - Common channel
  - Conventional

Properitoneal arches
- Posterior arches
  - Transverse arch
  - Common channel
  - Conventional

Properitoneal arches
- Posterior arches
  - Transverse arch
  - Common channel
  - Conventional

Notes

The urethra lies in the fascia of the bladder and ends with an external opening in the perineum.

Female urethra

The cervix is between the uterus and the vagina. It opens internally through the vaginal orifices into the perineal membranes and externally through the vulva. The external opening is on the vaginal orifices into the perineal membranes and externally through the vulva.

Male urethra

The male urethra is divided into three parts: the prostatic, membranous, and penile urethra.

1. Prostatic urethra
   - Lies in the prostate gland
   - Rostral to the seminal vesicles
   - Caudal to the verumontanum

2. Membranous urethra
   - Lies in the urogenital diaphragm
   - Continues from the prostatic urethra to the bladder neck

3. Penile urethra
   - Lies in the corpus spongiosum and corpus cavernosum
   - Continues from the membranous urethra to the glans penis

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Anatomy: Posterior Abdomen and Pelvis

Question 6 of 119

The lumbar plexus forms within which of the following muscles:

a. Rectus abdominis
b. Pyramidalis
c. Psoas major
d. Iliacus
e. Quadratus lumborum

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- Advanced Life Support Group
- Emergency Medicine Journal
- Lifeinthefastlane
- Instant Anatomy
- Patient.co.uk
Anatomy: Posterior Abdomen and Pelvis

Anatomical region

The lumbar plexus forms within which of the following muscles?

Answer

The lumbar plexus forms within the subcostal region of the third, fourth, and fifth lumbar vertebrae.

Notes

The lumbar plexus is formed by the anterior rami of the first, second, and third lumbar nerves. It lies within the subcostal region of the third, fourth, and fifth lumbar vertebrae. The anterior rami of these nerves supply the muscles of the anterior abdominal wall, including the external and internal oblique muscles.

Diagram:

- **Lumbar plexus** forms from the anterior rami of L1, L2, and L3. It lies within the subcostal region of the third, fourth, and fifth lumbar vertebrae.
- The lumbar plexus supplies the muscles of the anterior abdominal wall, including the external and internal oblique muscles.
- The anterior rami of L1, L2, and L3 combine to form the lumbar plexus.
- The lumbar plexus is located posterior to the rectus abdominis muscle.
- The lumbar plexus innervates the muscles of the posterior abdominal wall, including the quadratus lumborum, psoas major, and iliacus muscles.
- The lumbar plexus is important for the innervation of the urinary bladder and erectile function.

Diagram:

- **Lumbar plexus**, formed by the anterior rami of the first, second, and third lumbar nerves, lies within the subcostal region of the third, fourth, and fifth lumbar vertebrae. It supplies the muscles of the anterior abdominal wall, including the external and internal oblique muscles.

Diagram:

- The lumbar plexus is located posterior to the rectus abdominis muscle.
- The lumbar plexus innervates the muscles of the posterior abdominal wall, including the quadratus lumborum, psoas major, and iliacus muscles.
- The lumbar plexus is important for the innervation of the urinary bladder and erectile function.

Diagram:

- The lumbar plexus is formed from the anterior rami of L1, L2, and L3. It lies within the subcostal region of the third, fourth, and fifth lumbar vertebrae.
- The lumbar plexus supplies the muscles of the anterior abdominal wall, including the external and internal oblique muscles.
Anatomy: Posterior Abdomen and Pelvis

The abdominal aorta begins at which vertebral level:

- a) T10
- b) T11
- c) T12
- d) L1
- e) L2

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Anatomy: Posterior Abdomen and Pelvis

Question 7 of 119

The abdominal aorta begins at which vertebral level:

a) T10  
-Answered-

b) T11

-Answered-

c) T12

-Answered-

d) L1

-Answered-

e) L2

Answer

The abdominal aorta begins at the aortic hiatus of the diaphragm, anterior to the lower border of vertebra T12.

Notes

The abdominal aorta begins at the aortic hiatus of the diaphragm, anterior to the lower border of vertebra T12. It descends through the abdominis, anterior to the vertebral bodies, and by the time it ends at the level of vertebra L4 it is slightly to the left of the midline. The main terminal branches of the abdominal aorta are the two common iliac arteries. This bifurcation can be visualised on the anterior abdominal wall as a point approximately 2.5 cm below the umbilicus.

The abdominal aorta gives rise to:

- three anterior unpaired visceral branches
- the celiac trunk supplying the abdominal foregut (T12/L1 vertebral level)
- the superior mesenteric artery supplying the abdominal midgut (L1 vertebral level)
- the inferior mesenteric artery supplying the abdominal hindgut (L3 vertebral level)
- three lateral paired visceral branches
- the middle suprarenal arteries
- the renal arteries (L1/L2 vertebral level)
- the gonadal arteries
- posterior parietal branches
- the inferior phrenic arteries (paired)
- the lumbar arteries (paired)
- the median sacral artery (single)
- two terminal branches
- left common iliac artery
- right common iliac artery
Anatomy: Posterior Abdomen and Pelvis

Question 8 of 119

A 50 year old man complains of lumps in his groin and is found to have painless superficial inguinal lymphadenopathy. Lymph node biopsy demonstrates malignant cells, which of the following sites is most likely the primary source of carcinoma:

- a) Prostate
- b) Bladder
- c) Anal canal
- d) Testes
- e) Sigmoid colon
Anatomy: Posterior Abdomen and Pelvis

Q: A 50-year-old man complains of lumps in his groin and is found to have painless superficial inguinal lymphadenopathy. Lymph node biopsy demonstrates malignant cells, which of the following sites is most likely the primary source of carcinoma:

a) Prostate ✗
b) Bladder

Answer:
A malignant growth of the axillary nodes is an indicator of the primary tumor, which is typically the prostate. Therefore, the answer is a) Prostate.

Notes:
- The axillary nodes are located on the sides of the neck. They are involved in the spread of cancer from the prostate. The prostate is a gland that produces seminal fluid, which carries sperm. It is located in the front of the rectum and is the size of a small orange. It helps to produce semen and contributes to male fertility. It is important to note that the prostate is the most common site for cancer in men.

Detection:
- Detection involves the use of imaging tests such as ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI) to identify any abnormalities in the lymph nodes.

Investigation:
- Investigation involves biopsy of the lymph nodes to confirm the diagnosis of cancer. The biopsy can be performed using a needle or surgical excision.

Resources:
- The Head of Urogynaecology
- Assisted Reproductive Medicine
- Antenatal Support
- Maternal Health
- Vaginal and Pelvic Health
- Puberty
- Reproduction
- Gynaecology
- Urogynaecology
Anatomy: Posterior Abdomen and Pelvis

Question 9 of 119

The cutaneous supply of the scrotum is derived primarily from which of the following spinal nerve roots.

- A. T10 - L1
- B. L5, S1
- C. L2 - L4
- D. S1 - S4
- E. L1, S2 - S3

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Anatomy: Posterior Abdomen and Pelvis

The cutaneous supply of the scrotum is derived primarily from three of the following vessels:

- Proper pudendal artery (lateral branch of the internal iliac artery)
- Inferior vesical artery (branch of the internal iliac artery)
- Inferior gluteal artery (branch of the internal iliac artery)

Notes:

- The testis and epididymis are suspended in the scrotum by the spermatic cord.
- The testis is the site of spermatogenesis.
- The epididymis is the site of sperm storage and maturation.

Vascular Supply:

- Testicular artery: Branch of the internal iliac artery
- Epididymal arteries: Branches of the testicular artery
- Vasal artery: Branch of the internal iliac artery

Venous Outflow:

- Testicular vein: Drains into the renal veins
- Epididymal veins: Drain into the testicular vein

Lymphatic Drainage:

- Testis: Drains into the lumbar lymph nodes
- Epididymis: Drains into the inguinal lymph nodes

Nerve Supply:

- Testis: Innervated by the genitofemoral nerve (S1-L1)
- Epididymis: Innervated by the ilioinguinal nerve (L1-L2)

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Resources:

- Elsevier Health Sciences
- National Library of Medicine
- PubMed
- Radiopaedia

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Question 10 of 119

Regarding the ureters, which of the following statements is CORRECT:

- The bladder drains into the ureters.
- The ureters are continuously superiorly with the renal medulla.
- The ureters descend on the medial aspect of the psoas major muscles.
- The ureters are intraperitoneal structures.
- The left ureter lies in close proximity to the appendix.

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Anatomy: Posterior Abdomen and Pelvis

Question 3 of 10

Regarding the ureters, which of the following statements is CORRECT:

1. The bladder drains into the ureters.
2. The ureters are continuously superior to the renal medulla.
3. The ureters descend on the medial aspect of the psoas major muscles.
4. The ureters are intraperitoneal structures.
5. The left ureter lies in close proximity to the appendix.

Answer

The ureters are muscular tubes that transport urine from the kidneys to the bladder. They are continuous superiorly with the renal pelvis at the ureteropelvic junction. Inferior to the ureteropelvic junction, the ureters descend intraperitoneally on the medial aspect of the psoas major muscles, prior to the tips of the transverse processes of the lower lumbar vertebrae. The right ureter lies in close proximity to the appendix and is less amenable to inflammation resulting in urinary symptoms.

Notes

The ureters are muscular tubes that transport urine from the kidneys to the bladder. They are continuous superiorly with the renal pelvis at the ureteropelvic junction (at the level of the renal hilus, vertebra L3).

Anatomical course and relations

Inferior to the ureteropelvic junction, the ureters descend intraperitoneally on the medial aspect of the psoas major muscles, anterior to the tips of the transverse processes of the lower lumbar vertebrae. The ureters cross the pelvic brim anterior to the bifurcation of the common iliac arteries to enter the pelvic cavity and continue their journey down the lateral pelvic wall.

Within the pelvic cavity, the ureters are crossed by the ureteric artery lateral to the cervix in women, and by the duodenum just posterior to the bladder in men.

At the level of the ischial spines, they turn anterosuperiorly, passing in a transverse plane towards the bladder. The ureters enter the bladder obliquely at the base of the bladder at the level of the public tubercle.

The right ureter lies in close relation to the appendix, and thus is irritated in acute appendicitis causing urinary frequency.

Contraindicate:

All three points along their course, the ureters are constricted,

- the first point is at the ureteropelvic junction
- the second point is where the ureters cross the psaos brims
- the third point is where the ureters enter the wall of the bladder.

Kidneys stones can become lodged at these constrictions.

Kidney

Medulla of kidney

Nephron

Papilla

Pelvis of kidney

Ureter

Bladder

Adrenal gland

Renal artery and vein

Iliac vessels (lumbar)

Abdominal aorta

Common iliac artery

Aorta

Bifurcation of common iliac artery

Renal colic pain

Visceral afferent fibres from the ureters enter the spinal cord at T11-12, with ureteric pain (caused from ureteric distension) thus referred to the dermatomes supplied by T11-12: the posterior and lateral abdominal wall below the ribs and above the iliac crest, the pubic region, the scrotum in males, the labia majora in females and the proximal anterior aspect of the thigh/buttock/groin pain.

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Anatomy: Posterior Abdomen and Pelvis

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The hila of the kidneys lies at which of the following vertebral levels:

- T11
- T12
- L1
- L2
- L3

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Anatomy: Posterior Abdomen and Pelvis

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The iliohypogastric nerve is formed from the anterior rami of:

a L1
b L1 - L2
c L2
d L2 - L3
e L4

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- Advanced Life Support Group
- Emergency Medicine Journal
- Lifeinthefastlane
- Instant Anatomy
- Patient.co.uk

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Anatomy: Posterior Abdomen and Pelvis

The Diaphragmatic nerve is formed from the anterior rami of T12, L1, and L2 nerves and enters the abdomen between the transverse processes of the vertebrae, passing through the diaphragm to reach the abdominal region.

**Notes**
- The nerve is formed from the anterior rami of T12, L1, and L2 nerves and enters the abdomen between the transverse processes of the vertebrae, passing through the diaphragm to reach the abdominal region.

**Landmark nerves**

<table>
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<tr>
<th>Name</th>
<th>Nerve</th>
<th>Function</th>
<th>Nerve functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diaphragmatic nerve</td>
<td>L1, L2, L3, and L4</td>
<td>Internal and external oblique muscles</td>
<td>Passes through the diaphragm and runs to the pelvic region.</td>
</tr>
<tr>
<td>Phrenic nerve</td>
<td>L2, L3, and L4</td>
<td>Internal intercostal muscles</td>
<td>Branches into the diaphragm and runs to the pelvic region.</td>
</tr>
<tr>
<td>Gastroepiploic nerve</td>
<td>L1, L2, and L3</td>
<td>Splanchnic and intercostal nerves</td>
<td>Branches into the diaphragm and runs to the pelvic region.</td>
</tr>
<tr>
<td>Lateral cutaneous nerve of the rectum</td>
<td>L4, L5, and S1</td>
<td>Obturator externus</td>
<td>Nerve branches from the obturator externus.</td>
</tr>
<tr>
<td>Hypogastric nerve</td>
<td>L1, L2, and L3</td>
<td>Internal and external iliac nerves</td>
<td>Nerve branches from the internal and external iliac nerves.</td>
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<tr>
<td>Femoral nerve</td>
<td>L1, L2, and L3</td>
<td>Femoral nerve</td>
<td>Nerve branches from the femoral nerve.</td>
</tr>
</tbody>
</table>

**Hypogastric plexus**

- Located in the pelvis, the hypogastric plexus is formed by the anterior wall of the aorta and supplies the lower half of the body, including the genitalia.

**References**
- The anatomy of the posterior abdominal and pelvic nerves is discussed in detail in the *Gray's Anatomy* by Henry Gray.
- The role of the hypogastric plexus in pelvic physiology is covered in the *Fundamentals of Anatomy* by Richard E. Usatoff.

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Anatomy: Posterior Abdomen and Pelvis

Question 13 of 119

Visceral afferent fibres from the testes usually travel to which of the following spinal cord levels:

- a. T10 - L1
- b. T9 - T12
- c. L1 - L3
- d. L2 - L4
- e. S3, S4

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Anatomy: Posterior Abdomen and Pelvis

Answer

The nerves receive their arterial supply from the lumbar arteries, direct branch of the abdominal aorta, which is the superior mesenteric artery.

Development

The nerve supply to the posterior abdominal wall muscles arises from the lumbar rami communicantes from the inferior mesenteric plexus via the superior mesenteric nerve and the lumbar splanchnic nerves. These nerves provide sensory and parasympathetic fibers to the posterior abdominal wall muscles.

Lumbar nerves

The lumbar rami communicantes to the lumbar plexus (psoas nerve) supply the abdominal, in contrast to that of the spine which arises from the superior mesenteric plexus.

Intervention

The lumbar rami communicantes arise from the sacral plexus to supply the abdominal, in contrast to that of the spine which arises from the superior mesenteric plexus.
Anatomy: Posterior Abdomen and Pelvis

The abdominal aorta bifurcates into the right and left common iliac arteries at which of the following vertebral levels:

a  L1  
b  L2  
c  L3  
d  L4  
e  L5  

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Anatomy: Posterior Abdomen and Pelvis

Question 34 of 319

The abdominal aorta bifurcates into the right and left common iliac arteries at which of the following vertebral levels:

- a) L1 (X)
- b) L2
- c) L3
- d) L4 (✓)
- e) L5

Answer

The abdominal aorta bifurcates into the right and left common iliac artery at the level of vertebra L4. This bifurcation can be visualised on the anterior abdominal wall as a point approximately 2.5 cm below the umbilicus.

Notes

The abdominal aorta begins at the aortic hiatus of the diaphragm, anterior to the lower border of vertebra T12. It descends through the abdomen, anterior to the vertebral bodies, and by the time it ends at the level of vertebra L4 it is slightly to the left of the midline. The main terminal branches of the abdominal aorta are the two common iliac arteries. This bifurcation can be visualised on the anterior abdominal wall as a point approximately 2.5 cm below the umbilicus.

The abdominal aorta gives rise to:

- three anterior unpaired visceral branches
  - the celiac trunk supplying the abdominal foregut (T12/L3 vertebral level)
  - the superior mesenteric artery supplying the abdominal midgut (L1 vertebral level)
  - the inferior mesenteric artery supplying the abdominal hindgut (L3 vertebral level)
- three lateral paired visceral branches
  - the middle suprarenal arteries
  - the renal arteries (L1/L2 vertebral level)
  - the gonadal arteries
- posterior parietal branches
  - the inferior phrenic arteries (paired)
  - the lumbar arteries (paired)
  - the median sacral artery (single)
- two terminal branches
  - left common iliac artery
  - right common iliac artery

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Resources

- The Royal College of Emergency Medicine
- UKSA Association for Emergency Medicine
- Advanced Trauma Life Support
- Intercollegiate Board of Trauma
- Trauma.org
- NetServices

- Advanced Life Support Group
- Emergency Medicine Journal
- Lifeinthefastlane
- Intercollegiate
- Patients.co.uk
Anatomy: Posterior Abdomen and Pelvis

Question 15 of 119

The psoas major muscle attaches distally to which of the following:

- Pubic tubercle
- Greater trochanter of the femur
- Lesser trochanter of the femur
- Iliac crest
- Anterior superior iliac spine

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Anatomy, Posterior Abdomen and Pelvis


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Anatomy: Posterior Abdomen and Pelvis

Question 16 of 119

The iliohypogastric nerve supplies skin over which of the following regions:

- (a) Posterolateral gluteal region
- (b) Medial thigh
- (c) Lateral thigh
- (d) Posteromedial gluteal region
- (e) Upper anterior thigh

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Anatomy: Posterior Abdomen and Pelvis

The Dorsal Pancreas serves muscles along which of the following regions?

1. Renal region
2. Lumbar vertebrae region
3. Pancreatic head region
4. Parietal peritoneum

Choose your answer:

[ ] 1. Renal region
[ ] 2. Lumbar vertebrae region
[ ] 3. Pancreatic head region
[ ] 4. Parietal peritoneum

Notes:

The abdominal cavity is divided into two major regions: (1) the posterior abdominal cavity and (2) the anterior abdominal cavity. These regions are divided into smaller sub-regions, which are described below.

- **Posterior Abdominal Cavity**
  - **Renal region**:
    - Located superior to the kidneys and inferior to the diaphragm.
    - Contains the adrenal glands, the aorta, and the inferior vena cava.
  - **Lumbar vertebrae region**:
    - Located inferior to the renal region and superior to the pelvic cavity.
    - Contains the lumbar vertebrae and the psoas muscles.
  - **Pancreatic head region**:
    - Located inferior to the lumbar vertebrae region.
    - Contains the head of the pancreas and the splenic artery.
  - **Parietal peritoneum**:
    - Covers the posterior abdominal organs and is continuous with the peritoneum of the anterior abdominal cavity.

- **Anterior Abdominal Cavity**
  - **Pelvic cavity**:
    - Located inferior to the lumbar vertebrae region.
    - Contains the pelvic organs, such as the bladder, uterus, and rectum.

Detailed diagrams and tables can be found in the text of the anatomical atlas.
Anatomy: Posterior Abdomen and Pelvis

Question 17 of 119

The kidneys are related posteriorly to all of the following structures EXCEPT for the:

- a) Diaphragm
- b) Psoas major muscle
- c) Quadratus lumborum muscle
- d) Transversus abdominis muscle
- e) Iliacus muscle

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Anatomy: Posterior Abdomen and Pelvis

Question 18 of 119

A 75 year old man presents to ED in acute urinary retention. On examination you note the prostate feels hard and craggy. You suspect prostate cancer. Which structure is most likely affected:

- **a** Anterior lobe of prostate
- **b** Fibromuscular zone of prostate
- **c** Lateral lobe of prostate
- **d** Posterior lobe of prostate
- **e** Transitional zone of prostate
A 75 year old man presents to ED in acute urinary retention. On examination you note the prostate feels hard and craggy. You suspect prostate cancer. Which structure is most likely affected:

- a) Anterior lobe of prostate
- b) Fibromuscular zone of prostate
- c) Lateral lobe of prostate
- d) Posterior lobe of prostate
- e) Transitional zone of prostate

Answer

Anatomically the prostate has four main lobes: two lateral lobes, a posterior lobe and a median lobe that directly surrounds the urethra. Benign prostatic hyperplasia most commonly affects the median lobe. The posterior lobe is the area most prone to carcinomaous change, and the area palpated on PR examination.

Notes

The prostate is an unpainful accessory structure of the male reproduction system that surrounds the prostatic urethra in the pelvic cavity. It typically weighs between 20 – 40 g with an average size of 4 x 3 x 2 cm (its width being the greatest).

Secretions from the prostate, together with secretions from the seminal vesicles, contribute to the formation of semen during ejaculation. The ejaculatory ducts pass almost vertically in an anterioinferior direction through the posterior aspect of the prostate to open into the prostatic urethra.

Relations

The prostate lies immediately inferior to the bladder and the internal urethral sphincter, superior to the external urethral sphincter (with the levator ani lying inferriorly to the gland) and anterior to the rectum. The urethra passes through the prostate.

Structure

Traditionally the prostate gland is divided anatomically into lobules, but more important clinically is specific anatomical zones rather than lobes:

- The transitional zone is the most central part of the gland that surrounds the prostatic urethra and the area most prone to prostatic hyperplasia, resulting in urinary symptoms.
- The central zone occupies the transitional zone and encompasses the ejaculatory ducts posterior to the prostatic urethra.
- The peripheral zone is the outermost region of the prostate and the area most prone to carcinomaous transformation. This is the zone palpated on PR examination.

Lymphatic drainage

The prostate gland has several lymphatic drainage pathways primarily to the internal iliac nodes with some drainage to external iliac and presacral nodes.
Anatomy: Posterior Abdomen and Pelvis

Question 19 of 119

The genitofemoral nerve supplies skin over which of the following regions:

a) Posterolateral gluteal region
b) Lateral thigh
c) Upper medial thigh
d) Upper anterior thigh
e) Posteromedial gluteal region

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Anatomy: Posterior Abdomen and Pelvis

The gastrocnemius nerve supplies the sole of each of the following regions:

- Posterior tibial nerve region
- Upper medial plantar nerve
- Lower lateral plantar nerve
- Abductor hallucis nerve

The gastrocnemius nerve is formed from the anterior rami of L5, S1, and S2, the most posterior branches of the common peroneal and tibial nerves. It supplies the posterior wall of the thigh, the calf, and the sole of the foot.

Notes

The posterior tibial nerve is a branch of the sciatic nerve and supplies the posterior tibial muscles. It is formed from the common peroneal nerve and supplies the muscles of the posterior tibial region. It also supplies the posterior aspect of the foot and ankle.

Legend

- Dorsal: Superficial
- Lateral: Deep
- Plantar: Deep

- L1: Intercostal and body of transverse process
- L2: Intercostal and body of transverse process
- L3: Intercostal and body of transverse process
- L4: Intercostal and body of transverse process
- L5: Intercostal and body of transverse process
- S1: Intercostal and body of transverse process
- S2: Intercostal and body of transverse process
- S3: Intercostal and body of transverse process

- L1: Spinal roots
- L2: Spinal roots
- L3: Spinal roots
- L4: Spinal roots
- S1: Spinal roots
- S2: Spinal roots
- S3: Spinal roots

- Normal: Normal
- Abnormal: Abnormal
- Hypoesthetic: Hypoesthetic
- Anesthetic: Anesthetic
- Hyperesthetic: Hyperesthetic
- Sensory loss: Sensory loss
- Motor weakness: Motor weakness
- Motor loss: Motor loss
Anatomy: Posterior Abdomen and Pelvis

Question 20 of 119

The renal pelvis is continuous with which of the following structures:

a. The minor calyx
b. The renal pyramid
c. The major calyx
d. The renal sinus
e. The ureter

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Anatomy: Posterior Abdomen and Pelvis

Question 21 of 119

The femoral nerve is formed from the anterior rami of:

a) L2 – L4
b) L1 – L2
c) L1 – L4
d) L2 – L3
e) L3 – L4

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Question Navigator

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5 Answered
6 Answered
7 Answered
8 Answered
9 Answered
10 Answered
11 Answered
12 Answered

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- Emergency Medicine Journal
- LifeintheFastlane
- Instant Anatomy
- Patient.co.uk

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Anatomy: Posterior Abdomen and Pelvis

The posterior abdomen is formed from the posterior aspect of the iliac regions. It contains the pelvic cavity and contains the structures that are responsible for the lower body's movements and functions.

Notes:
- The posterior abdomen is formed from the posterior aspect of the iliac regions.
- It contains the pelvic cavity.
- It contains the structures responsible for the lower body's movements and functions.

Legend:
- Dorsal parietal nerve: L1 internal obturator and obturator internus
- Lumbar parietal nerve: L1 internal obturator and obturator internus
- Genitofemoral nerve: L1, L2 male: cremasteric muscle
- Lateral cutaneous nerve of ilium: N.A.
- Femoral nerve: L1, L2, L3 biceps, sartorius, tensor fasciae latae

Resources:
- "The Pelvic Cavity" in "The Pelvis" by William J. Wray and Andrew R. SHI
- "Anatomy Through Landmarks" by Crane and Fraser
- "Gray’s Anatomy" 41st edition
Anatomy: Posterior Abdomen and Pelvis

Question 22 of 119

The testicular artery is a branch from which of the following blood vessels:

a. Abdominal aorta
b. Internal iliac artery
c. External iliac artery
d. Coeliac trunk
e. Inferior mesenteric artery

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Anatomy: Posterior Abdomen and Pelvis

**Overview of the Pelvis**

1. The bony pelvis is a bony structure that serves as the foundation for the lower extremities and provides support for the organs contained within it.
2. The pelvic cavity is a space enclosed by the bony pelvis, which contains various organs and structures, including the urinary bladder, uterus, and rectum.
3. The pelvic cavity is divided into two parts by the median plane: the pelvic cavity anteriorly and the pelvic cavity posteriorly.

**Question Navigator**
1. Answered
2. Answered
3. Answered
4. Answered
5. Answered
6. Answered
7. Answered
8. Answered
9. Answered
10. Answered
11. Answered
12. Answered

**Duchenne Muscular Dystrophy**

The condition is typically diagnosed during childhood, and its symptoms may vary in severity. The mainstay of treatment is focused on managing the symptoms and improving the quality of life for affected individuals.

**Dissection**

Dissection is an essential component of anatomical studies, allowing students to understand the relationships and functions of various structures. It is often conducted on cadavers or preserved specimens to simulate real-world dissection practices.

**Lymphatics**

The lymphatic system is a network of vessels that help maintain fluid balance in the body and fight infections. It is important to understand the lymphatic system's role in health and disease.

**Patient Information**

Understanding the patient's history and current health status is crucial in providing appropriate care. This includes medical history, symptoms, and any relevant medical conditions.

**Resources**

- **Interactive Video:** Dissection of the Pelvis
- **Bones of the Pelvis:** Detailed images and descriptions
- **Diaphragm:** Function and Conditions
- **Urinary System:** Anatomy and Function
- **Gastrointestinal System:** Overview and Anatomy

**Feedback**

Please provide feedback on the dissection and anatomical studies.

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