

Retroperitoneal space

The retroperitoneal space is a potential space situated between the posterior abdominal wall and the peritoneum, containing various organs, blood vessels, nerves, and connective tissue structures.

Contents

Organs

- Primarily retroperitoneal organs developed and remain outside of the parietal peritoneum (oesophagus, rectum and kidneys).
- Secondarily retroperitoneal organs were initially intraperitoneal, suspended by mesentery. (ie) Through the course of embryogenesis, they became retroperitoneal.

A useful **mnemonic** to help in recalling which abdominal viscera are retroperitoneal is **SAD PUCKER**:

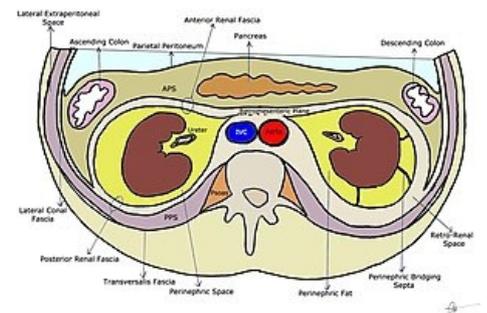
- S = Suprarenal (adrenal) Glands
- A = Aorta/IVC
- D = Duodenum (except the proximal 2cm, the duodenal cap)
- P = Pancreas (except the tail)
- U = Ureters
- C = Colon (ascending and descending parts)
- K = Kidneys
- E = (O)esophagus
- R = Rectum
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- **Blood Vessels:**
 - Abdominal Aorta: The largest artery in the abdomen, which supplies oxygenated blood to the abdominal organs and lower extremities.
 - Inferior Vena Cava: The largest vein in the body, responsible for returning deoxygenated blood from the lower body to the heart.
 - Renal Arteries and Veins: Blood vessels that supply and drain blood from the kidneys.
 - Mesenteric Arteries and Veins: Blood vessels that supply and drain blood from the intestines.
 - Iliac Arteries and Veins: Blood vessels that supply and drain blood from the pelvis and lower extremities.
- **Nerves:**
 - Sympathetic Nervous System: Sympathetic nerves that regulate involuntary functions, such as heart rate, blood pressure, and digestion.(flight and fight).
 - Parasympathetic Nervous System: Parasympathetic nerves that promote rest and digestion.
 - Splanchnic Nerves: Nerves that innervate the abdominal organs and transmit sensory and motor signals

Functions

The retroperitoneal space serves as a protective and supportive region for the abdominal organs and structures that lies within it by stabilising and shielding them from external trauma. It plays a crucial role in physiological functions and serves as a vital anatomical landmark.

Clinical Significance

Surgical access to the retroperitoneum is done using the Kocher maneuver to enhance the visualisation of structures like the aorta, inferior vena cava, kidneys, duodenum, and pancreas. Ureteric obstruction caused by retroperitoneal fibrosis is an uncommon collagen vascular disorder. Abdominal aortic aneurysm presenting as retroperitoneal haemorrhage or haematoma can occur.



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References

The Peritoneum - Visceral - Parietal - TeachMeAnatomy

Lambert G, Samra NS. Anatomy, Abdomen and Pelvis, Retroperitoneum. [Updated 2023 Jul 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK549857/>