

Renal Blood Vessels and Renal Segments

Renal vessels arise at the level of the intervertebral disc between L1 and L2 vertebrae.

Renal arteries and their branches

The arteries are mostly posterior to the veins. They divide close to the hilum into 5 segmental arteries, which are end-arteries (they do not anastomose significantly with adjacent branches). The right renal artery is the longest vessel and passes also posterior to inferior vena cava. Before entering the hilum, the renal artery gives 2 branches:

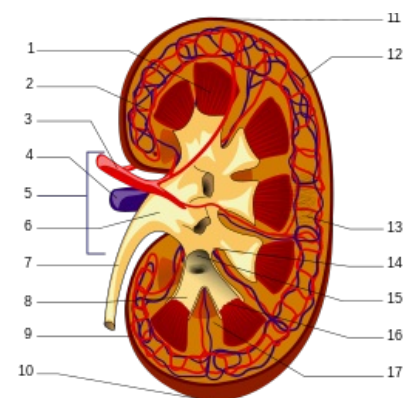
- the inferior suprarenal artery;
- ureteric branch.

The segmental arteries of the renal arteries:

1. **Superior** (apical) (from anterior branch of renal aa)
2. **Anterior superior** (from anterior branch of renal aa)
3. **Anterior inferior** (from anterior branch of renal aa)
4. **Inferior** (from anterior branch of renal aa)
5. **Posterior** (continuation of the posterior branch of renal aa)

The segmental arteries then subdivide in the following manner:

- **Interlobar** arteries in the renal sinus between the pyramids →
 - **Arcuate** arteries that go around the pyramids in the medulla region →
 - **Cortical radiate** arteries that “radiate” around the pyramids into the cortical region. Some of these can also perforate the renal capsule.



1. Renal pyramid • 2. Interlobular artery • 3. Renal artery • 4. Renal vein • 5. Renal hilum • 6. Renal pelvis • 7. Ureter • 8. Minor calyx • 9. Renal capsule • 10. Inferior renal capsule • 11. Superior renal capsule • 12. Interlobular vein • 13. Nephron • 14. Minor calyx • 15. Major calyx • 16. Renal papilla • 17. Renal column

Renal veins and their tributaries

Veins are numerous and drain in each kidney in a variable fashion to form the renal vein. The renal veins both lie anterior to the renal arteries. The left renal vein, receives also:

- the testicular (ovarian) vein;
- the left suprarenal vein;
- communicating branch with ascending lumbar vein.

Lymphatics

Lymph is conducted along lymphatic vessels that follow the renal veins and drain into the right and left lumbar (caval & aortic) lymph nodes.

Links

Related articles

- Kidney
- Renal Pelvis and Calices
- Structure of Kidney

Bibliography

- MOORE, Keith L – DALLEY, Arthur F. *Clinically Oriented Anatomy*. 5. edition. Lippincott Williams & Wilkins, 2005. ISBN 0781736390.