

Abdominal aorta

Aorta abdominalis forms an unpaired continuation of the thoracic section of the aorta and transports oxygenated blood to all abdominal and pelvic organs, supplies the muscles of the back, abdominal walls and diaphragm, external genitalia and lower limbs.

The abdominal aorta runs close to the spine on the left side vena cava inferior from the *hiatus aorticus* of the diaphragm (at Th12 level) to its *bifurcation* (L4) where it divides into the **arteriae iliacae communes** (**a. iliaca communis dextra et sinistra**), which then continue to the pelvic area, where they continue to branch. Some branches supply the organs, while others participate in the supply of the surrounding walls. Accordingly, we distinguish **parietal** (mural) branches and **visceral** (organ) branches.

Parietal branches

The **parietal branches** of the abdominal aorta include the **aa. phrenicae inferiores** departing just below the hiatus aorticus and running along the lower surface of the diaphragm, 4 pairs of **aa. lumbales**, **a. sacralis mediana** forming an unpaired continuation of the abdominal aorta and **aa. iliacae communes**. *Aa. phrenicae inferiores* participate in the supply of the diaphragm and contribute, among other things, to the nutrition of the adrenal glands (aa. suprarenales superiores). *The lumbar arteries* are a continuation of the thoracic intercostal arteries (branches of the thoracic aorta) and supply the corresponding sections of the lumbar region and abdominal wall. **Aa. iliacae** supply the entire lower half of the body.

Visceral Branches

Can be further divided into **even** and **odd**

Unpaired branches (craniocaudally)

▪ Truncus coeliacus

Truncus coeliacus is a very short branch that divides into 3 main branches just a few centimeters from its distance in the Th12/L1 region – **a. splenica** supplying the great curvature of the stomach, body and tail of the pancreas and spleen, **a. gastrica sinistra** running along the lesser curvature of the stomach and also supplying the pars abdominalis esophagus and **a. hepatica communis** nourishing the region of the greater curvature, the duodena, the head of the pancreas and the liver with the gallbladder.

▪ A. superior mesenteric

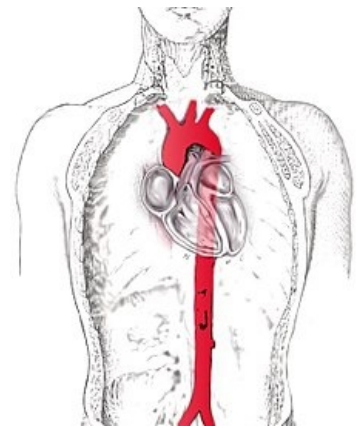
AND. mesenterica superior (departs about 2 cm caudally from the truncus coeliacus behind the head of the pancreas, level L1) is the main branch for duodenum (aa. pancreaticoduodenales inferiores), jejunum (aa. jejunales), [[ileum]] (aa. ileales), caecum (a. ileocolica), colon ascendens and colon transversum (a. colica dextra et media) to *Cannon-Boehm point* (about 2/3 colon transversum). Outside the small, cecum and large intestine, a. mesenterica sup. it also participates in the supply of the head of the pancreas, it can also send branches for the stomach and in up to 30% of cases even an additional *a. hepatica accessoria*.

▪ A. mesenteric inferior

AND. mesenterica inferior (displacement at the level of the upper part of the L3 vertebra) connects with the supply to a. mesenterica sup. (anastomoses with a. colica media – *anastomosis magna Haleri*) and supplies blood for the rest of the colon transversum, for the colon descendens (a. colica sinistra), sigmoideum (aa. sigmoideae) and rectum (a. rectalis superior) where it anastomoses with paired **aa. rectales mediae** (from a. iliaca interna), which allows partial (but not completely sufficient) compensation in case of obstruction of one of these arteries.

Pair branches

- **aa. suprarenales mediae** supplying the right and left adrenal glands;
- **aa. renales** (a. renalis dx. et sin.) for both kidneys and as a lower branch for adrenal glands (aa. suprarenales inferiores) ;
- **aa. testiculares/ovaricae** (a. testicularis/ovarica dx. et sin.) nourishing gonads (testicles/ovaries).



A12.2.02.001 (<http://www.unifr.ch/ifaa/Public/EntryPage/TA98%20Tree/Entity%20TA98%20EN/12.2.02.001%20Entity%20TA98%20EN.htm>)

visceral: paired

(aa. suprarenales mediae,
aa. renales,

aa. testiculares/ovaricae),

unpaired (truncus coeliacus,

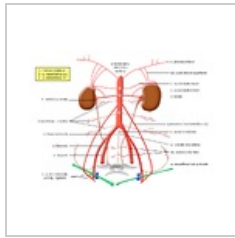
a. mesenterica superior,

a. mesenterica inferior);

parietal: aa. phrenicae inf.,

aa. lumbales, aa. iliacae
communes

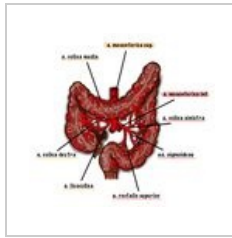
a. sacralis mediana



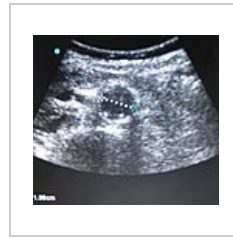
Paired branches of the abdominal aorta



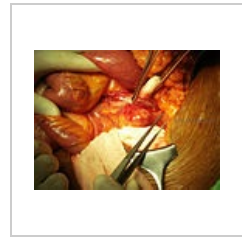
Unpaired branches of the abdominal aorta



Vascular supply of colon



US abdominal aorta: diameter 1.9 cm (norm)



Surgery for abdominal aortic aneurysm

Links

Related Articles

- Abdominal aortic aneurysm
- Elastic artery (histological slide)
- Aorta thoracica
- Aortic regurgitation
- Aortic stenosis

References

- * ČIHÁK, Radomír. *Anatomie III*. 2., upr. a dopl edition. Praha : Grada Publishing, spol. s. r. o., 2004. 673 pp. ISBN 80-247-1132-X.

Source

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