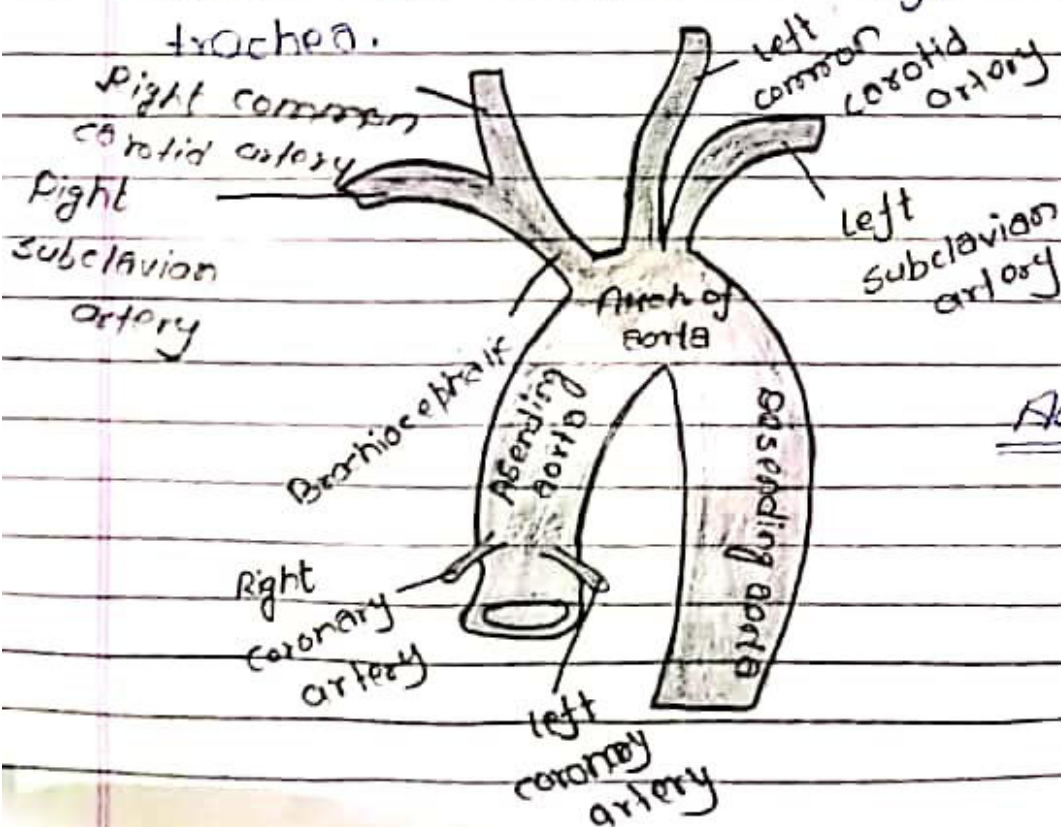


Dr. Rajash Varma, Asis Assistant professor and Head. U.G. Department of zoology, D.K. College Dummagan (Buxar). Notes for B.Sc. part 2nd. paper LV (A).

Question:- Aortic arches ke comparative anatomy ke chitra chit karoon kare ?

Answer:- The aortic arch, arch of the aorta, or transverse aortic arch (English: /eɪˈɔːrtɪk/) is the part of the aorta between the ascending and descending aorta. The arch travels back-ward, so that it ultimately runs to the left of the trachea.



Aortic Arch

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The aortic arch has three branches, the brachiocephalic trunk, left common carotid artery, and left subclavian artery.

Details

Precurson

Fourth left pharyngeal arch artery

Source

Ascending aorta

Branches

- Brachiocephalic trunk
- left common carotid artery
- left subclavian artery continues as descending aorta, thoracic part

Vein

Combination of superior and inferior vena cava

Supplies

From its branches, the upper body, arms, head and neck. Its a part of the aorta, the entire body, with exception of the respiratory zone of the lung and the heart.

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Identifious

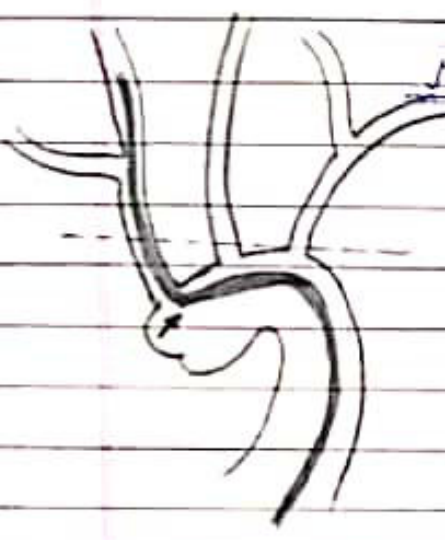
Latin Arcus oculae

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FMA 3768

Anatomical terminology

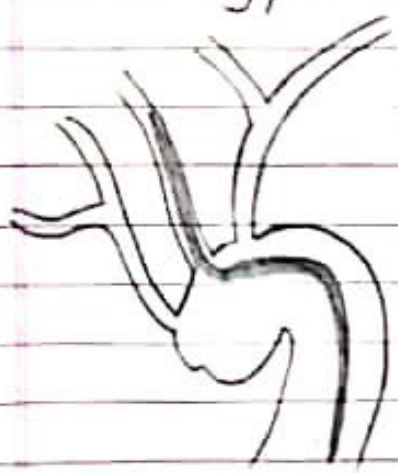
Right caudid



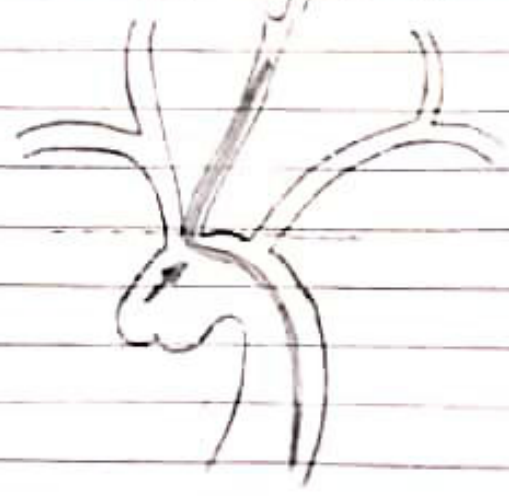
A. Type III



B. Type II



C. Type III



D. Bovine

STRUCTURE :-

At the cellular level, the aorta and the aortic arch are composed of three layers: The tunica intima, which surrounds the lumen and is composed of simple squamous epithelial cells; the tunica media, composed of smooth cell muscles and elastic fibers; and the tunica adventitia, composed of loose collagen fibers. Innervated by baroreceptive nerve terminals, the aortic arch is responsible for sensing changes in the dilation of vascular walls, including changes in heart rate to compensate for changes in blood pressure. The aorta begins at the level of the upper border of the second sternocostal articulation of the right side, and runs at first upward, backward, and to the left in front of the trachea; then travels backward on the left side of the body of the seventh thoracic vertebra.

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Development :-

The aortic arch is the connection between the ascending and descending aorta. Its central part is formed by the left 4th aortic arch during early development.

The ductus arteriosus connects to the lower part of the arch in fetal life. This allows blood from the right ventricle to mostly bypass the pulmonary vessels as they develop.

The final section of the aortic arch is known as the isthmus of aorta. This is so called because it is a narrow-wing (isthmus) of the aorta as a result of decreased blood flow when in fetal life. As the left ventricle of the heart increases in size throughout life, the narrowing eventually dilates to become a normal size. If this does not occur, this can result in coarctation of the aorta.

The ductus arteriosus connects to the final section of the arch in fetal life and the ligamentum arteriosum when the ductus arteriosus regresses.