

② Tuesday 19th October

DISSECTION OF SHEEP'S HEART

External Features

The front of the heart is recognised by a groove which runs obliquely down the Ventricles from L. to R. Up the middle of the posterior surface there is a similar groove. These two grooves mark the course of the internal septum which divides the heart into R. & L. Ventricles. A transverse groove towards the upper end of the heart marks the separation of the Auricles from the Ventricles. Note that the musculature of the L. Ventricle is thick and firm, that of the R. Ventricle being thinner. Both the Auricles are thin walled. The Appendage of the Auricle (i.e. that part of the muscle in which there is no cavity) projects in front, at the base of the heart, as a flat crinkled structure. Note three semilunar valves at the root of the aorta. Put aorta under tap and demonstrate the closure of these valves. Immediately above two of the valves is the opening of a coronary artery (there being two altogether). Insert a seeker into each of these and determine the course of the vessels.

In the posterior wall of the L. Auricle note the openings of two Pulmonary veins (in Man there are four) - thin-walled vessels. The Pulmonary artery arises from the R.V. and the Aorta from the L.V. - find these - also the Superior and Inferior Venae Cavae opening into the R.A. Draw the external features.

Internal Anatomy

Right Heart. Next cut open the right auricle and observe that it surmounts the right auriculo-ventricular orifice like an inverted pocket.

Note the appendage with its fretwork of muscle - the interauricular septum with the fossa ovalis; the Eustachian valve, a membranous fold in low relief which lies immediately beneath the entrance of the inferior vena cava. It is directed from the posterior wall towards the internal wall. Note the coronary sinus lying caudal to the I.V.C.

Note also the size and form of the auriculo-ventricular orifice. Cut away most of the auricle, and put the auriculo-ventricular orifice for a moment under the tap. The valve will float up. The flaps are brought into opposition by eddies the moment the ventricular pressure becomes greater than the auricular pressure. Note the shape of each flap, the upward convexity of the valve flaps when closed, and the star-shaped figure formed by their opposition. Note also the papillary muscles and chordae tendineae. A band of muscle - the moderator band - crosses the right ventricle of the sheep's heart.

Next cut through the chordae tendineae, and then place the auriculo-ventricular orifice for a moment under the tap. The valve flaps are now driven towards the auricle, and the flap is no longer competent. Introduce a pair of scissors between two of the valve-flaps, and cut down to the bottom of the ventricle. Then turn round the scissors and cut up close to the septum, towards but not as far as the pulmonary artery. Observe the columnae carneae and papillary muscles in the lower part of the ventricle. Note the funnel-shaped, smooth-walled upper part of the ventricle - the conus arteriosus - which leads into the pulmonary artery. Note the form of the flaps of the A.V. valve and their attachment to the auriculo-ventricular ring.

Now lay open the pulmonary orifice and note the shape and attachment of the semi-lunar valves and the small nodule of tissue in the free edge of each flap.

Left Heart. Cut open the left auricle in the same manner as the right, and observe the two flaps of the left auriculo-ventricular valve, the papillary muscles, etc., and the thickness of the left ventricular wall. Cut across the aorta just above its origin and observe the three aortic semi-lunar valves. Insert the nozzle of the tap through this valve into the left ventricle and turn on the water. The auriculo-ventricular valve closes and prevents the escape of the water. Lay open the left ventricle in the same manner as the right, carrying the first incision down the left side of the ventricle. Observe the entrance into the aorta and then lay this open. Note the semi-lunar valves and the coronary arteries behind two of these.

Note: Some authorities prefer the terms atrium and atrial for auricle and auricular.

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