

THE HISTOLOGICAL STRUCTURE OF THE HORSE GUTTURAL POUCH

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The guttural pouches are only found in horses and other Perissodactyla. These are two hollow, air-filled sacs that connect the pharynx to the middle ear (technically, diverticula of the Eustachian tubes). It is considered that guttural pouches are responsible for equalizing pressures between the ear and outside surroundings. There is a slit-like opening from each guttural pouch into the pharynx. The role of these pouches is still not completely understood. The investigation of the micromorphological constitution of the horse guttural pouch was conducted. The guttural pouches are lined with the same respiratory epithelium that lines the upper airway. An epithelium by places has a fold that multiplies area of surface of air sack. Under the epithelium loose connecting tissue is located; however the bulk of air sack wall is presented by the dense connecting tissue. Collagenous and elastic fibers between which in a large number there are leucocytes are here presented in great numbers. It is pierced by the thick network of blood vessels – capillaries, by arterioles with relatively thick walls and venules. Inside the connective tissue layer of the guttural pouch wall there are lots of glands – simple, multicellular, alveolar type, and ramified with the conclusion channel of tubular form the secret of mucous glands as granules hatches on the surface of wall. The conclusion channels of glands are covered by one-celled low prismatic epithelium. Obviously, a secret is selected in great numbers, because the walls of air sacks are always moist, covered by mucus produced by glands. Under an epithelium in connecting tissue often there are accumulations of mature and immature lymphatic follicles. The areas of air sack, not having attachments to the bones of skull, have the thin layer of connecting tissue. An external layer is presented by elastic and collagen fibres. The positioning of guttural pouches puts them into close contact with other important structures of the head such as certain lymph nodes, blood vessels and nerves. The major branches of arteries go to the brain in a very superficial location of the guttural pouch wall. Such structures and position of guttural pouches allow to argue of them gas exchange function.

Horse, guttural pouch, histological structure, blood vessels, gas exchange