

THE MORPHOTOPOGRAPHY OF NASAL MUCOSA VASCULARITY IN SHEEP

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Abstract: The nasal mucosa membrane is supplied by the sphenopalatine artery (a branch of the descending palatine artery) which forms an arterial network before entering the sphenopalatine conduct. In the nasal cavity, the artery divides into four branches, each one of them reaching the floor and the walls of the nasal cavity. These branches give birth to some verybranched arterial networks. These networks are arranged on a superficial and a profound layer. The fact that the majority of the arteries in the nasal cavity are oriented towards its roof is remarkable. Histologically speaking, a developed muscular layer is to be observed. This layer diminishes the arterial lumen, thus controlling the speed and blood quantity going through these vessels.

Key words: sheep, nasal mucosa, vascularity

MATERIAL AND METHOD

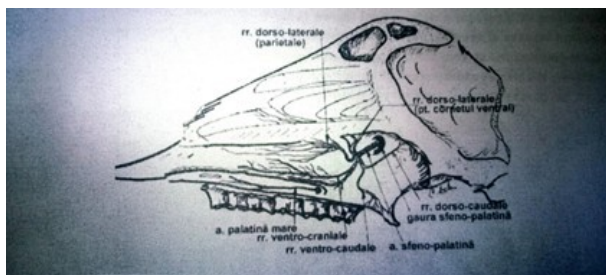
10 specimens (ovine and caprine) of different ages, races and sexes were used. In view of highlighting the nasal mucosa vascularity, a plastic substance of AGO contrast was injected. The substance was bilaterally administered in the external carotid artery. In order to observe the microscopic smears and to study the arterial walls, the hematoxylin-eosin, Azan and the orzein-nitrate colorations were used. After sacrificing the animals, the stratigraphic and regional dissection method was used.

RESEARCH RESULTS

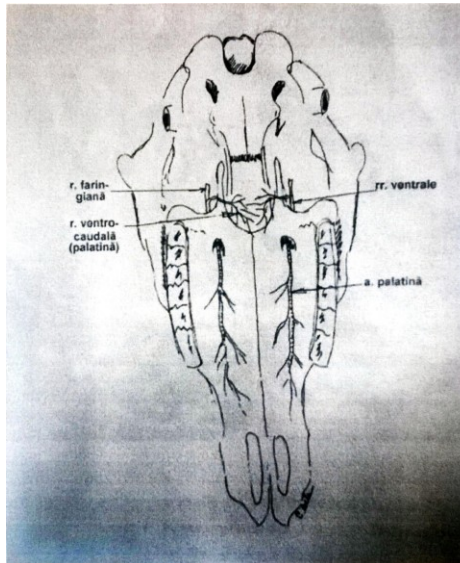
Regarding the ruminants, the commune carotid artery does not end with the internal carotid artery, only an intracranial portion formed of epidural networks being noticeable.

The ethmoidal artery goes into the cranium through the ethmoidal aperture, emits the internal ethmoidal artery and spreads into the olfactory labyrinth. The infraorbital artery: its first side can be the malar artery. Inside the infraorbital canal, it emits branches for the premolars, the superior molars, but also smooth branches for the maxillary sinus.

The descending palatine artery: it emits the sphenopalatine artery, thereupon narrows itself. The sphenopalatine artery has a medially oriented path, going into the aboral portion of the nasal cavities, through the sphenopalatine aperture. Once inside the nasal cavities, it emits the caudal septal artery and several caudolateral nasal arteries. The caudal septal arteries branch within the mucosa of the nasal septum, and the caudolateral nasal arteries spread within the mucosa of themaxiloturbinal cornet and within the mucosa of the ventral nasal meatus.

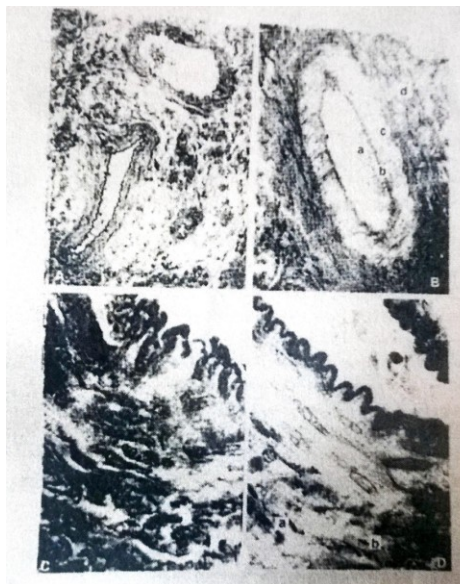


Sphenopalatine artery distribution in ovine



Greater palatine artery in ovine

The descending palatine artery emits in the medial surface of the maxillary tuberosity the small palatine artery (ascending path towards the palatine wave) and the greater palatine artery (reaches the palatine canal through the aboral palatine aperture, accompanied by the homonymous nerve). The greater palatine artery exits through the oral palatine aperture and emits small branches within the palate mucosa. The most rostral branches make a connection (anastomosis) with the ones behind the incisive burelet. In this region, small branches cross the interincisive fissure, irrigating the rostral portion of the nasal cavity's mucosa.



A. The section from nasal mucosa (ob.x40). B. The section from artery (a. lumen b. intima c. media d. external layer). C. Arterial wall (color Azan). D. Arterial wall (orcein-nitrat).
a. elastic fibers. b. collagen fibers.

CONCLUSIONS

1. The olfactory labyrinth is irrigated by the internal ethmoidal artery after smooth branches cross the ethmoid's riddled blade.
2. The infraorbital artery's caliber is about 1.5-2 mm. It emits as a first side the malar artery (unspecified in some major writings).
3. The rostral portion of the nasal cavity is irrigated by the greater palatine artery.
4. Histologically speaking, the vessels in the nasal cavity (branches of the sphenopalatine artery) possess the same structure without being influenced by the harvesting area in the nasal mucosa. By comparison to the arteries, the walls of the veins in the nasal mucosa are much thinner and the muscular layer is much more undeveloped.

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