

Angiographic anatomy of the extracranial and intracranial portions of the internal carotid arteries in donkeys

ABSTRACT

Background:In horses, the extracranial and intracranial pathway of the internal carotid artery has been described. The extracranial pathway of the internal carotid artery begins at the carotid termination and runs on the dorsal surface of the medial compartment of the guttural pouch. Thereafter the internal carotid artery passes through the foramen lacerum to continue intracranially, forming part of the rostral lateral quadrants of the cerebral arterial circle (Circle of Willis). The objectives of this study were to define and record the anatomy of the carotid arterial tree and the internal carotid artery in donkeys using angiographic techniques. This is a prospective descriptive study on 26 cadaveric donkeys. **Methods:** Twenty six donkey cadavers of mixed, age, sex and use presented for reasons unrelated to disease of the guttural pouch were subjected to carotid and cerebral angiography using rotational angiography. Rotational angiographic and 3 dimensional multiplanar reconstructive (3D-MPR) findings were verified with an arterial latex casting technique followed by dissection and photography. **Results:**The following variations of the carotid arterial tree were identified: [1] the internal carotid and occipital arteries shared a common trunk, [2] the linguofacial trunk originated from the common carotid artery causing the common carotid artery to terminate as four branches, [3] the external carotid artery was reduced in length before giving rise to the linguofacial trunk, mimicking the appearance of the common carotid artery terminating in four branches, [4] the internal carotid artery originated at a more caudal position from the common carotid artery termination. **Conclusion:** Veterinarians should be aware that considerable variation exists in the carotid arterial tree of donkeys and that this variation may differ markedly from that described in the horse.

Keyword: Donkeys; Internal carotid artery; Rotational angiography