

Structure and sympathetic innervation of the intracranial arteries in the giraffe (*Giraffa camelopardalis*)

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Abstract:

Fluorescence histochemistry discloses that the carotid rete mirabile in the giraffe has a poor sympathetic innervation. In contrast, the efferent artery of the rete (internal carotid artery) and the cerebral arteries show moderate sympathetic innervation. A certain degree of regional variability was noted in which the rostral arteries (anterior and middle cerebral) receive more sympathetic nerves than the caudal (posterior communicating and basilar) arteries. The sympathetic nerves on the giraffe cerebral vessels may constitute part of a host of mechanisms by which regional blood flow to the brain is regulated. Conversely, the paucity of sympathetic innervation of the carotid rete mirabile may indicate that this structure does not play an active role in vasoconstrictor responses during postural changes of the head.