Cerebrovascular anatomy

The human cerebrovascular system is responsible for regulating demand-dependent perfusion and maintaining the blood-brain barrier (BBB).

The cerebral arterial blood supply is derived from the aortic arch through three major vessels: the innominate brachiocephalic artery, the left common carotid artery (CCA), and the left subclavian artery.

The left CCA arises from the apex of the aortic arch and divides into the left internal carotid artery (ICA) and external carotid artery (ECA).

The left subclavian artery arises directly from the aortic arch. The first branch of each subclavian artery is the vertebral artery (VA), although occasionally the left VA arises directly from the aortic arch rather than from the left subclavian artery. The two VAs ascend from the base of the neck through the foramina in the transverse processes of the upper six cervical vertebrae and wind behind the upper articular processes of the atlas before entering the cranial cavity through the foramen magnum.

Anomalous variations of the origin of the cerebral vessels are occasionally seen.

Carotid artery

Vertebral artery

Veins

Dural venous sinuses.

Books