Tentorium

The tentorium cerebelli or cerebellar tentorium (Latin: “tent of the cerebellum”) is an extension of the dura mater that separates the cerebellum from the inferior portion of the occipital lobes.

The tentorium cerebelli is an arched lamina, elevated in the middle, and inclining downward toward the circumference.

It covers the superior surface of the cerebellum, and supports the occipital lobes of the brain.

Its anterior border is free and concave, and bounds a large oval opening, the tentorial incisure, for the transmission of the cerebral peduncles.

It is attached, behind, by its convex border, to the transverse ridges upon the inner surface of the occipital bone, and there encloses the transverse sinuses; in front, to the superior angle of the petrous part of the temporal bone on either side, enclosing the superior petrosal sinuses.

At the apex of the petrous part of the temporal bone the free and attached borders meet, and, crossing one another, are continued forward to be fixed to the anterior and posterior clinoid processes respectively.

To the middle line of its upper surface the posterior border of the falx cerebri is attached, the straight sinus being placed at their line of junction.

Clinically, the tentorium is important because brain tumors are often characterized as supratentorial (above the tentorium) and infratentorial (below the tentorium). The location of the tumor can help in determining the type of tumor, as different tumors occur with different frequencies at each location. Additionally, most childhood primary brain tumors are infratentorial, while most adult primary brain tumors are supratentorial. The location of the tumor may have prognostic significance as well.

Since the tentorium is a hard structure, if there is a volume expansion in the parenchyma above the tentorium, the brain can get pushed down partly through the tentorium. This is called herniation and will often give mydriasis on the affected side, due to pressure on cranial nerve III (N. Oculomotorius). Tentorial herniation is a serious symptom, especially since the brainstem is likely to be compressed as well if the intracranial pressure rises further. See uncal herniation for a common subtype of a tentorial herniation.

Because of the inclination of the tentorium, temporal lobe retraction increases with a more posterior location of the lesion [1].

The intracranial space is divided into two large compartments by the tentorium. The hydrostatic pressure of spinal fluid is responsible for buoyancy of the brain within these compartments.

The tentorium seems to have a simple structural design; however, its edges are close to the brainstem [2] Moreover, its role in venous drainage of the brain and cerebellum makes surgical approach a challenge, even for experienced neurosurgical teams [3].

see Tentorial notch.

In the first phase of central herniation, the diencephalon and the medial parts of both temporal lobes are forced through a notch in the tentorium cerebelli.

Klintworth describes the development of the tentorium cerebelli as a fold of flattened mesothelium with a central core of loose areolar connective tissue, within which there is a gradual accumulation of collagen resulting in a dense fibrous membrane. It is the inferior layer of the tentorium cerebelli (the folded meningeal layer) that is used to fashion the sling retraction technique [4].

Angle

see Tentorial Angle.

1)
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