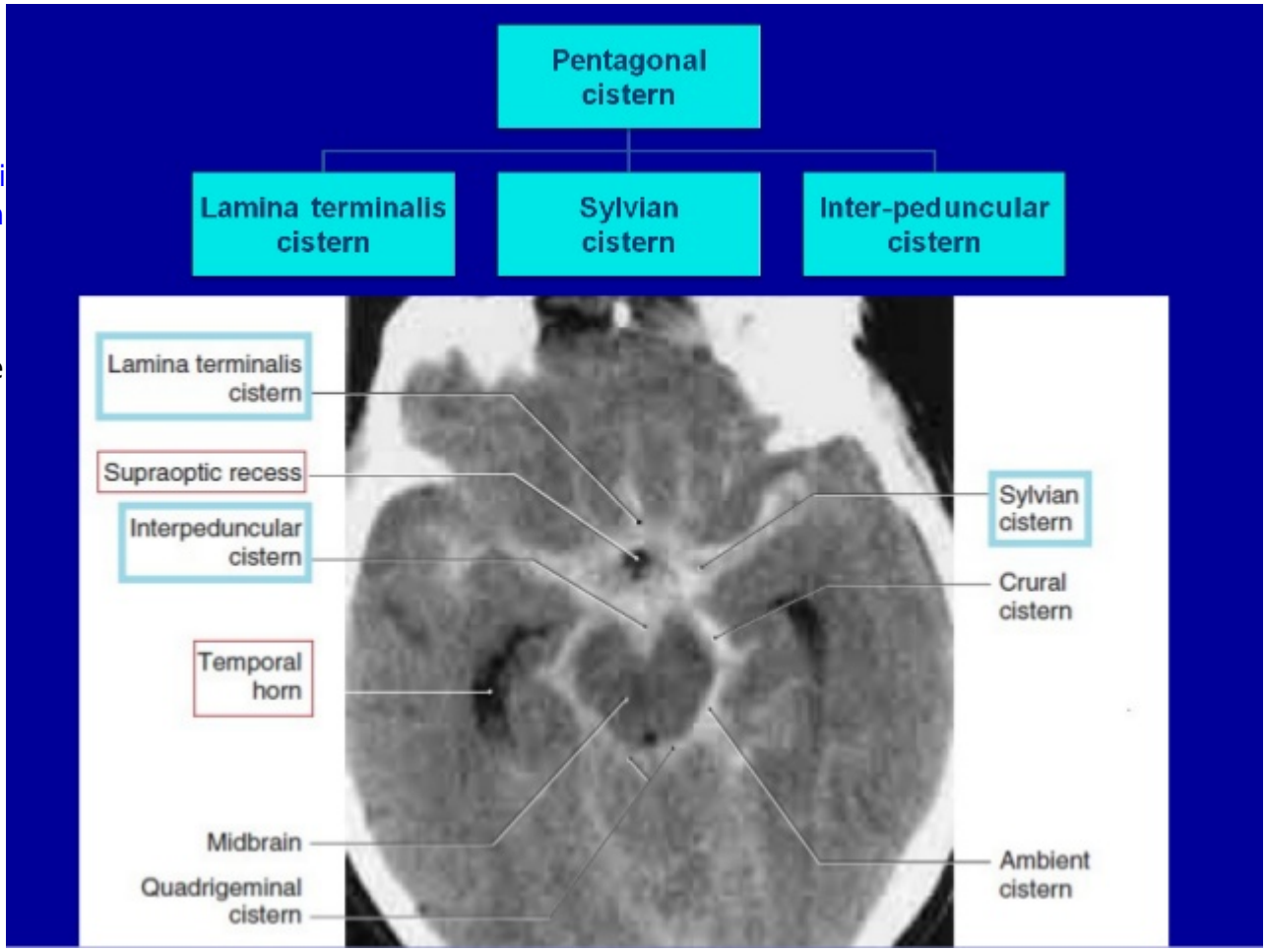
Ambient cistern

Superior cistern, quadrigeminal cistern, ambient cistern or cistern of the great cerebral vein.



It is situated dorsal to the midbrain. Thin, sheet-like extensions of the superior cistern that extend laterally about the midbrain, connecting it to the interpeduncular cistern. Ambient cistern may also refer to the combination of these extensions and the superior cistern. It is composed of a supratentorial and an infratentorial compartment.It contains: The great vein of galen. The posterior pericallosal arteries. The third portion of the superior cerebellar arteries. Perforating branches of the posterior cerebral and superior cerebellar arteries. The third portion of the posterior cerebral arteries. Its supratentorial portion contains: The basal vein of Rosenthal. The posterior cerebral artery. Its infratentorial portion contains: The superior cerebellar artery. The fourth (IV) nerve.

The quadrideminal cistern or ambient cistern (also known as superior cistern or cistern of the great cerebral vein) is one of the subarachnoid cisterns.

The term “ambient cistern” may be used to refer the these connections and the quadrigeminal cistern as a whole.

It is located between the splenium of the corpus callosum and the superior surface of the cerebellum and extends from the third ventricle to the great cerebral vein. The ambient cistern is part of the subarachnoid cisterns. It is a thin, sheet-like extension of the quadrigeminal cistern that extends laterally around the midbrain. It acts as the connection between the quadrigeminal cistern and the interpeduncular cistern.

Surgical approaches to lesions of the ambient cistern must be tailored to the site of the pathological

findings. Position of the vein of Labbé, and the midpoint of the rounded medial edge of the parahippocampal gyrus, is key to determine surgical Approach [1].

Approach

Infratentorial supracerebellar approach(SC)

Occipital interhemispheric approach(OI)

Subtemporal approach(ST)

Transchoroidal approach (TC). Additionally, Figueiredo et al. performed a parahypocamppal gyrus resection (STh) in ST context.

A study has demonstrated that surgical approaches expose dissimilarly the different regions of the ambient cistern and approach selection should be based upon the specific need of anatomical exposure [2]

The transtemporal transchoroidal fissure approach provides a corridor to the ambient cistern and P2-P3 junction while minimizing temporal lobe retraction and avoiding interruption of temporal lobe venous drainage. Because of widely variable vascular anatomy, access to posterior cerebral artery lesions using this approach requires preoperative imaging to identify the specific location of the P2-P3 junction.

1)
Wang F, Sun T, Li XG, Li ZZ. [Microsurgical anatomy and surgical approach of the ambient cistern]. Zhonghua Yi Xue Za Zhi. 2007 Jan 16;87(3):165-9. Chinese. PubMed PMID: 17425846.
2)
Figueiredo EG, Beer-Furlan A, Welling LC, Ribas EC, Schafranski M, Crawford N, Teixeira MJ, Rhoton AL Jr, Spetzler RF, Preul MC. Microsurgical Approaches to the Ambient Cistern Region: an Anatomical and Qualitative Study. World Neurosurg. 2015 Nov 4. pii: S1878-8750(15)01481-3. doi: 10.1016/j.wneu.2015.10.063. [Epub ahead of print] PubMed PMID: 26547002.