

Interhemispheric parietooccipital approach

- [Commentary: The Case Series of Contralateral Interhemispheric Transfalcine Approach to Medial Parietooccipital Pathologies: Surgical Technique and Results](#)
- [The Case Series of Contralateral Interhemispheric Transfalcine Approach to Medial Parietooccipital Pathologies: Surgical Technique and Results](#)
- [Posterior Interhemispheric Parietooccipital Fissure Approach for the Posterior Medial Temporal Glioblastoma: 2-Dimensional Operative Video](#)
- [Morphometry of depth of interhemispheric fissure on Indian cadaveric brain specimens](#)
- [Microsurgical anatomy of the isthmic cingulum: a new white matter crossroad and neurosurgical implications in the posteromedial interhemispheric approaches and the glioma invasion patterns](#)
- [The parietooccipital interhemispheric transtentorial approach for pineal tumors](#)
- [Endoscopic-assisted parieto-occipital interhemispheric precuneal transtentorial approach for microsurgical resection of vermian arteriovenous malformation: operative video and technical nuances](#)
- [Pediatric pineal region tumors: institutional experience of surgical managements with posterior interhemispheric transtentorial approach](#)

see [Posterior interhemispheric transprecuneus gyrus approach](#)

The interhemispheric parietooccipital [precuneus](#) (para-esplenial) approach, described by Yasargil, provides a short route to the medial wall of the [trigone](#), and at same time avoids injury to the [optic radiations](#) as well as avoiding disturbance of cortical functions, even in the dominant hemisphere ^{1) 2)}.

The medial surface is retracted and an incision made in the precuneus cortex leaving a short distance (± 2 cm) to the medial wall of the trigone. This route is indicated for small or medium-size meningiomas with medial projection. The disadvantages are wider brain retraction is necessary, the narrow working angle, narrow surgical corridor and difficult access to the choroidal vessels ^{3) 4) 5)}.

Interhemispheric parietooccipital approaches are associated with limited exposure to the more posterior part of the mesial temporal lobe and require significant brain retraction ^{6) 7)}.

The interhemispheric parietooccipital approach allows only limited exposure of the more lateral PMT regions, and the access provided by this approach is restricted to the posterior portion of the mediobasal temporal lobe. Also, retraction of the occipital lobe may result in new-onset visual deficits ⁸⁾.

Posterior corpus callosotomy using a parietooccipital interhemispheric approach

Ito et al. published a surgical [technique](#) for [posterior callosotomy](#) using a [interhemispheric parietooccipital approach](#) with a semi-prone park-bench position as a second surgery. Although this procedure requires an additional skin incision in the parietooccipital region, it makes the 2-stage callosotomy safer and easier to perform because of reduced intracranial adhesion, less bleeding, and an easier approach to the splenium of the [corpus callosum](#) ⁹⁾.

Indications

The approach is mainly used for lesions located in posterior interhemispheric and deep midline structures, including:

1. Tumors

Pineal region tumors (e.g., pineocytomas, pineoblastomas, germ cell tumors)

Gliomas of the posterior corpus callosum

Colloid cysts (posterior third ventricle)

Craniopharyngiomas (posterior extension)

Ependymomas of the third ventricle

Meningiomas of the falx, tentorium, or posterior corpus callosum

2. Vascular Lesions

Arteriovenous malformations (AVMs) in the splenium, precuneus, or cuneus

Cavernomas in the corpus callosum or posterior interhemispheric region

Aneurysms of the posterior pericallosal or splenial arteries

Dural arteriovenous fistulas (dAVFs) in the posterior falx or tentorium

3. Epilepsy Surgery

Resection of epileptogenic foci in the precuneus or posterior cingulate gyrus

Corpus callosotomy (partial or complete) for intractable epilepsy

4. Other Lesions

Hydrocephalus due to obstruction of the posterior third ventricle

Callosal disconnection syndromes requiring intervention

Neurocysticercosis or other parasitic cysts in the posterior ventricular system

References

1)

Yasargil MG. Parieto-occipital interhemispheric approach. In: Yasargil MG (Ed). Microneurosurgery, vol IVB. New York:Thieme, 1996:56-57.

2)

Tokunaga K, Tamiya T, Date I. Transient memory disturbance after removal of an intraventricular meningiomas by a parieto-occipital interhemispheric precuneus approach: case report. Surg Neurol 2006;65:167-169.

3)

Lyngdoh BT, Giri PJ, Behari S, Banerji D, Chhabra DK, Jain VK. Intraventricular meningiomas: a surgical challenge. J Clin Neurosc 2007;14:442-448.

4)

D'Angelo VA, Galarza M, Catapano D, Monte V, Bisceglia M, Carosi I. Lateral ventricle tumors: surgical strategies according to tumor origin and development - a series of 72 cases. Neurosurgery 2005;56(Suppl1): S36-S45

5)

Wang S, Salma A, Ammirati M. Posterior interhemispheric transfalx transprecuneus approach to the atrium of the lateral ventricle: a cadaveric study. J Neurosurg 2010;103:949-954.

6) , 8)

de Oliveira JG, Párraga RG, Chaddad-Neto F, Ribas GC, de Oliveira EP: Supracerebellar transtentorial approach resection of the tentorium instead of an opening—to provide broad exposure of the mediobasal temporal lobe: anatomical aspects and surgical applications. Clinical article. J Neurosurg 116:764–772, 2012

7)

Türe U, Harput MV, Kaya AH, Baimedi P, Firat Z, Türe H, et al: The paramedian supracerebellar-transtentorial approach to the entire length of the mediobasal temporal region: an anatomical and clinical study. Laboratory investigation. J Neurosurg 116:773–791, 2012

9)

Ito H, Morino M, Niimura M, Takamizawa S, Shimizu Y. Posterior callosotomy using a parietooccipital interhemispheric approach in the semi-prone park-bench position. J Neurosurg. 2015 Jun 5:1-4. [Epub ahead of print] PubMed PMID: 26047417.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=interhemispheric_parietooccipital_approach

Last update: **2025/03/04 11:04**

