

Telovelar approach

- [Cerebellar Mutism/Posterior Fossa Syndrome Following Resection of Posterior Fossa Tumor in Pediatric Patients: Assessing Pathophysiology, Risk Factors, and Neuroradiographic Features](#)
- [Treatment of a Large Hemorrhagic Midbrain Cavernoma Within the Sylvian Aqueduct in a Five-Year-Old Girl-A Case Report](#)
- [Full-Endoscopic Trans-Magendie Four-Hands Surgical Technique for Fourth Ventricle Lesions Removal: Two Case Reports](#)
- [Telovelar Approach for the Surgical Resection of a Caudal Fossa Glioma in a Toy Poodle](#)
- [Full-Endoscopic Minimally-Invasive Trans-Magendie Approach to the Fourth Ventricle: An Anatomical Feasibility Study](#)
- [Aqueductal glioma surgery via a telovelar approach using sodium fluorescein in a 6-year-old pediatric patient](#)
- [Dorsally exophytic brain stem ganglioglioma extending to the foramen of Luschka: a case report](#)
- [Neurological and functional outcomes of 32 patients with hemorrhagic brainstem cavernous malformations: a practical guide for surgical planning](#)

The [telovelar approach](#) is an alternative to cerebellar splitting to gain access to the [fourth ventricle](#) through the so-called [cerebellomedullary fissure](#) (CMF).

In the [telovelar approach](#), the [cerebellomedullary fissure](#) (CMF) is exposed and access to the ventricle is obtained by incising the [tela chorioidea](#) and [inferior medullary velum](#). This approach enables the exploration of the entire ventricle cavity from the [obex](#) to the [aqueduct](#).

see [cerebellomedullary fissure approach](#)

The [telovelar approach](#), which lacks incision of any part of the cerebellum, provides an additional exposure to the [lateral recesses](#) and the [foramen of Luschka](#) ¹⁾.

It is a safer procedure for interventions involving the pathological lesions of the [fourth ventricle](#) floor ²⁾.

The unilateral approach is sufficient in most cases of small lesions. However, large fourth ventricle tumors are more problematic since they distort the normal anatomy with both [vermis](#) and [cerebellar peduncles](#) thinned and stretched out. This puts the patient at increased risk for a neurological deficit, which is minimized with a bilateral telovelar approach. By illustrating the adequacy of this technique, Liu et al., emphasize the suitability of a rather unusual bilateral approach, which will provide excellent panoramic visualization of entire fourth ventricle and thus avoids complications usually associated with resections of large [fourth ventricle tumors](#) ³⁾.

Key Points

Early exposure of the interface lesion-[floor of the fourth ventricle](#) favours a safer tumour dissection.

Resection of tonsils is not necessary in the surgical setting

The posterior arch of **C1** should be removed only if the tonsils are below the level of the **foramen magnum**. A telovelar approach without the removal of the posterior **arch** of C1 allows for an optimal exposure of the fourth ventricle provided that critical nuances in patient positioning are considered ⁴⁾

The improved access to the **lateral recess** of the ventricle makes the telo-velar approach particularly effective in lesions attached to **cerebellar peduncles**.

The wide dissection of the **cerebellomedullary fissure** and gentle tonsils retraction may prevent from the occurrence of **cerebellar mutism** or other major cerebellar dysfunctions.

Even the bilateral opening of the CMF does not result in cerebellar mutism if wide and cautious dissection, avoiding retraction and vascular injuries, is obtained.

The exposure of the fourth ventricle was satisfactory also in patients harbouring lesions attached to the lateral or even the superolateral recesses of the ventricle.

A deep rostral tumour attachment seems to be, the main specific limitation of the telo-velar approach.

The risk of hydrocephalus can be reduced by opening of the fissure bilaterally, exposing the aqueduct, and by cisterna magna-fourth ventricle communication augmentation.

The EVD is taken in place for 48-72 h to prevent possible abrupt increase of the intracranial pressure and to favour wound closure ⁵⁾.

1)

Tanriover N, Ulm AJ, Rhoton AL Jr, Yasuda A. Comparison of the transvermian and telovelar approaches to the fourth ventricle. *J Neurosurg*. 2004 Sep;101(3):484-98. PubMed PMID: 15352607.

2)

Akakin A, Peris-Celda M, Kilic T, Seker A, Gutierrez-Martin A, Rhoton A Jr. The Dentate Nucleus and its Projection System in the Human Cerebellum: A Microsurgical Anatomical Study Dentate Nucleus Microsurgical Anatomical Study. *Neurosurgery*. 2014 Jan 19. [Epub ahead of print] PubMed PMID: 24448179.

3)

Liu R, Kasper EM. Bilateral telovelar approach: A safe route revisited for resections of various large fourth ventricle tumors. *Surg Neurol Int*. 2014 Jan 30;5:16. doi: 10.4103/2152-7806.126081. eCollection 2014. PubMed PMID: 24678432.

4)

Cho A, Lippolis MA, Herta J, Dogan M, Hedrich C, Azizi AA, Peyrl A, Gojo J, Czech T, Dorfer C. The telovelar approach for fourth ventricular tumors in children: is removal of the posterior arch of C1 necessary? *Childs Nerv Syst*. 2024 Sep;40(9):2707-2711. doi: 10.1007/s00381-024-06443-3. Epub 2024 May 4. PMID: 38703239; PMCID: PMC11322403.

5)

Tomasello F, Conti A, Angileri FF, Cardali S. Telo-velar approach to fourth-ventricle tumours: how I do it. *Acta Neurochir (Wien)*. 2015 Apr;157(4):607-10. doi: 10.1007/s00701-015-2358-z. Epub 2015 Feb 6. PubMed PMID: 25652723.

From:

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

Permanent link:

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

Last update: **2024/09/03 08:29**

