

Subtemporal transtentorial approach

A pretemporal trans-Meckel's cave [transtentorial approach](#) offers large surgical exposure and multiple trajectories to the suprasellar, interpeduncular, prepontine, and upper-half clival regions without overt traction, which is mandatory to remove large [petroclival meningioma](#) (PCM). To unlock Meckel's cave where a large PCM lies abutting the cave, pretemporal transcavernous and anterior transpetrosal approaches are prerequisites to create adequate exposure for the final trans-Meckel's cave step ¹⁾.

The subtemporal [transtentorial approach](#) provides excellent exposure of the middle incisural space. A modification of the subtemporal transtentorial approach with use of a partial [mastoidectomy](#) is presented to avoid damage to the temporal lobe as a result of retraction as well as damage to venous structures ²⁾.

[Microvascular decompression](#) (MVD) via [lateral suboccipital approach](#) is the standard surgical intervention for [trigeminal neuralgia](#) (TN). For recurrent TN, difficulties are sometimes encountered when performing reoperation via the same [approach](#) because of adhesions and prosthetic materials used in the previous surgery. Ogiwara et al. describe the efficacy of the subtemporal transtentorial approach for use in recurrent TN after MVD via the lateral suboccipital approach. An 86-year-old woman, in whom an MVD via a lateral suboccipital craniotomy had previously been performed for TN, underwent surgery for recurrent TN via the subtemporal transtentorial approach, which provided excellent visualization of the neurovascular relationships and the [trigeminal nerve](#) without adhesions due to the previous surgery. Her TN disappeared after the MVD. The present approach is ideal for visualizing the [trigeminal root entry zone](#), and the neurovascular complex can be easily dissected using a new surgical trajectory. This approach could be another surgical option for reoperation when the previous MVD had been performed via the suboccipital approach ³⁾.

Through anatomic comparative analysis the [Extended pterional transtemporal transtentorial approach](#) EPTT approach provides better exposure and is more appropriate than the [subtemporal transtentorial approach](#) (ST approach) for large and giant petroclival tumors predominantly in the posterior cranial fossa with extensive invasion to parasellar structures and the cavernous sinus ⁴⁾.

Videos

Pontine cavernoma surgery through subtemporal transtentorial approach

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<html><iframe width="560" height="315" src="https://www.youtube.com/embed/wgZqwA1Edaw"
frameborder="0" allowfullscreen></iframe></html>
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¹⁾

Liao CH, Wang JT, Lin CF, Chen SC, Lin CJ, Hsu SPC, Chen MH. Pretemporal trans-Meckel's cave transtentorial approach for large petroclival meningiomas. *Neurosurg Focus*. 2018 Apr;44(4):E10. doi: 10.3171/2018.1.FOCUS17733. PubMed PMID: 29606050.

²⁾

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3)

Ogiwara T, Goto T, Kusano Y, Kuroiwa M, Kiuchi T, Kodama K, Takemae T, Hongo K. Subtemporal transtentorial approach for recurrent trigeminal neuralgia after microvascular decompression via the lateral suboccipital approach: case report. J Neurosurg. 2015 Jun;122(6):1429-32. doi: 10.3171/2014.10.JNS132643. Epub 2014 Nov 28. PubMed PMID: 25423272.

4)

Tang Y, Wang HD, Ma CY, Zhan CS, Ji XJ, Zhu L, Li W, You WC, Lin HP, Zhong WZ. Quantitative anatomic comparison of the extended pterional transtemporal transtentorial approach and the subtemporal transtentorial approach to the petroclival region. Turk Neurosurg. 2015;25(1):9-15. doi: 10.5137/1019-5149.JTN.7450-13.1. PubMed PMID: 25640539.

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