



Cranioorbital Pretemporal Skull Base Approach with Anterior Clinoidectomy for Removal of Large Left Clinoid Meningioma: “Unwrapping” Encircled Internal Carotid Artery and Decompressing Optic Nerve: 2-Dimensional Operative Video

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Key words

- Anterior clinoidectomy
- Clinoid meningioma
- Cranioorbital approach
- Encircled
- Internal carotid artery
- Optic canal decompression

Abbreviations and Acronyms

ACP: Anterior clinoid process

ICA: Internal carotid artery

MCA: Middle cerebral artery

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[Supplementary digital content available online.](#)

Citation: *World Neurosurg.* (2024) 182:43-44.

<https://doi.org/10.1016/j.wneu.2023.11.033>

Journal homepage: www.journals.elsevier.com/world-neurosurgery

Available online: www.sciencedirect.com

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Clinoidal meningiomas are meningiomas arising from or in the vicinity of the anterior clinoid process.¹ Despite advanced microsurgical techniques, clinoidal meningiomas remain challenging.² Extradural anterior clinoidectomy with optical unroofing remains an important tool in skull base surgery, which provides a safe operative corridor, facilitating greater extent of resection and enhancing overall outcome, particularly visual function.²⁻¹³ A 66-year-old woman presented with history of visual disturbances. Magnetic resonance imaging revealed a dural-based tumor consistent with a large left clinoidal meningioma, with tumor wrapping (encircling) around the left trunk and internal carotid artery (ICA) bifurcation, elevating the left middle cerebral artery M1 segment, and invading the left optic canal. Left cranio-orbital craniotomy with pretemporal exposure was used (Video 1).^{1,9} A high-speed diamond drill with irrigation completed the extradural anterior clinoidectomy and optical canal unroofing. Use of a 1-mm Kerrison rongeur should be done with utmost care. The tumor was unwrapped via meticulous piecemeal removal. Final dissection and ICA unwrapping was done when the tumor was debulked enough that dissecting it off the artery was safe and under less tension. Due to its obscurity, final decompression of the left optic nerve with incision and opening of the falxiform ligament was performed at the end of the procedure.¹⁰ Postoperative neuro-ophthalmologic examination showed a grossly unchanged left visual field with some visual acuity improvement. Resection of tumor encircling the ICA has been described previously;¹⁴ however, to the best of our knowledge, this is the first video describing removal of a tumor surrounding the ICA (performed by senior author K.I.A.), essentially “unwrapping” the left ICA trunk and its bifurcation. The patient consented to publication.

ACKNOWLEDGMENT

Andrew J. Gienapp (Children’s Foundation Research Institute, Le Bonheur Children’s Hospital, Memphis, Tennessee; Department of Neurosurgery, The University of Tennessee Health Science Center, Memphis, Tennessee) provided copyediting, preparation of the abstract for publishing, and publication assistance.

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Conflict of interest statement: The authors declare that the article content was composed in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received 5 October 2023; accepted 8 November 2023

Citation: *World Neurosurg*. (2024) 182:43-44.
<https://doi.org/10.1016/j.wneu.2023.11.033>

Journal homepage: www.journals.elsevier.com/world-neurosurgery

Available online: www.sciencedirect.com

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