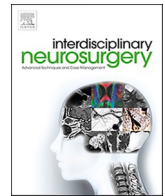


Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Interdisciplinary Neurosurgery: Advanced Techniques and Case Management

journal homepage: www.elsevier.com/locate/inat

Technical notes & surgical techniques



Trans-tonsillar approach for resection of a tumor located in the lateral aspect of the medulla: 3D surgical video

Alvaro Campero^{a,b}, Matias Baldoncini^{c,d,*}, Juan F. Villalonga^a^a LINT, Facultad de Medicina, Universidad Nacional de Tucumán, Tucumán, Argentina^b Department of Neurological Surgery, Hospital Padilla, Tucumán, Argentina^c Department of Neurological Surgery, Hospital San Fernando, Buenos Aires, Argentina^d Laboratory of Microsurgical Neuroanatomy, Second Chair of Gross Anatomy, School of Medicine, University of Buenos Aires

ARTICLE INFO

Keywords:

Suboccipital approach
Transtonsillar corridor
Microsurgery
Cerebellomedullary cistern

ABSTRACT

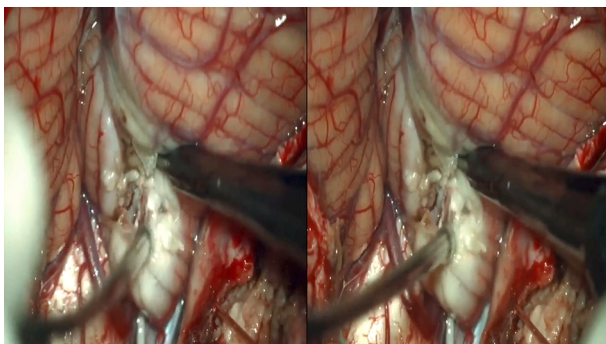
The purpose of this video is to describe the microsurgical corridor of the trans-tonsillar approach for resection of a tumor located in the right lateral aspect of the medulla.

We presented a 56-year-old patient with headache and diplopia. On the preoperative MRI we found a localized tumor with surrounding edema, in the anterior portion of the right cerebellomedullary fissure and on the PET-CT a hyper-metabolic lesion in the right lung. We decided to excise the intracranial lesion given the risk of a post-radiotherapy edema. We performed a suboccipital approach extended to the right side. On the intradural stage, the lesion was not reachable through a sub-tonsillar access because it was in front of the right tonsil. For this reason the surgical team decided to modify the initial plan, so a trans-tonsillar corridor was chosen. Pathological anatomy reveals metastasis of a lung adenocarcinoma. The patient evolved favorably, without neurologic deficit, and the postoperative MRI showed adequate resection and disappearance of the edema. The patient gave his written consent for the use of photos, images and surgical video in this work.

In the neurosurgical literature there are some descriptions of the sub-occipital sub-tonsillar approach, among which we find cadaveric studies [1], technical notes [2] and reports of their application in various pathologies [3–5]. However, the use of the trans-tonsillar pathway is not described in neurosurgical bibliography. This fact attracts attention, since resection or coagulation of only cerebellar tonsils does not generate a clinically significant neurological deficit. This suggests that the trans-tonsillar pathway, if necessary, is a valid option.

The current work constitutes the first report of the usage of a suboccipital trans-tonsillar approach.

Video 1



Video 1.

Submission Statement: The contents of this Video have not been copyrighted or published previously.

Funding Source: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

* Corresponding author at: Jorge Luis Borges 2240, Floor 4, Buenos Aires City Postal Code 1425, Argentina.

E-mail address: drbaldoncinimatias@gmail.com (M. Baldoncini).

<https://doi.org/10.1016/j.inat.2022.101543>

Received 5 March 2022; Accepted 14 March 2022

Available online 17 March 2022

2214-7519/© 2022 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

References

- [1] W.C. Jean, K.M. Abdel Aziz, J.T. Keller, H.R. Van Loveren, Subtonsillar approach to the foramen of Luschka: an anatomic and clinical study, *Neurosurgery*. 52 (4) (2003) 860–866.
- [2] S. Herlan, F. Roser, F.H. Ebner, M. Tatagiba, The midline suboccipital subtonsillar approach to the cerebellomedullary cistern: how I do it, *Acta Neurochir. (Wien)*. 159 (9) (2017) 1613–1617.
- [3] F. Roser, F.H. Ebner, M.U. Schuhmann, M. Tatagiba, Glossopharyngeal neuralgia treated with an endoscopic assisted midline suboccipital subtonsillar approach, *J. Neurol. Surg. Part A: Cent Euro Neurosurg*. 74 (05) (2013) 318–320.
- [4] A.T. Rabadán, A. Campero, D. Hernández, Surgical application of the suboccipital subtonsillar approach to reach the Inferior half of medulla oblongata tumors in adult patients, *Front Surg*. 2 (2016) 72.
- [5] A. Di Somma, P.C. Caro, M.O. Blanco, T. Somma, A. López-González, A. Campero, Modified, “extended” suboccipital subtonsillar clipping of a ruptured proximal pica aneurysm: technical note with relevant anatomical demonstration, *World Neurosurg*. 117 (2018) 301–308.