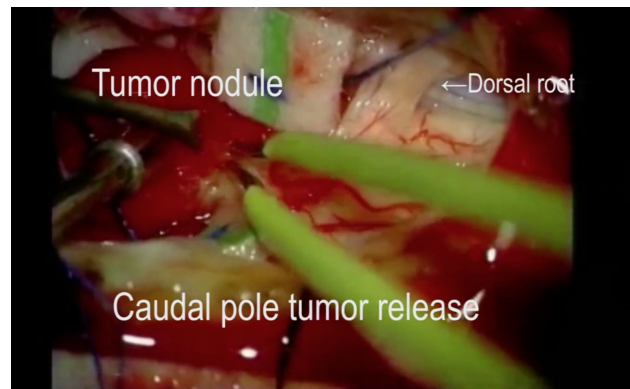


Microsurgical Resection of Medulla Oblongata Hemangioblastoma: 2-Dimensional Operative Video

Mirza Pojskić, MD*, Kenan I. Arnautović, MD, PhD^{‡§}

*Department of Neurosurgery, University of Marburg, Marburg, Germany; †Semmes Murphey Neurologic & Spine Institute, Memphis, Tennessee; ‡Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, Tennessee



Watch now at <https://academic.oup.com/ons/article-lookup/doi/10.1093/ons/opy074>

Correspondence: Kenan Arnautović, MD, PhD, Semmes Murphey Neurologic & Spine Institute, 6325 Humphreys Blvd, Memphis, TN 38120. E-mail: kenanarnaut@yahoo.com

This video demonstrates the microsurgical resection of brainstem hemangioblastoma. The patient is a 32-year-old woman with Von Hippel Lindau syndrome who presented with quadriparesis and inability to swallow. Magnetic resonance imaging (MRI) of the neuroaxis revealed a brainstem cystic lesion with contrast-enhancing tumor nodule right along the posterior aspect of the lower part of medulla oblongata. The surgery was performed in the prone position with

suboccipital craniectomy and partial C1 posterior arch removal. The aim of the surgery was to remove the tumor nodule.¹⁻¹²

The tumor was separated from the right dorsal nerve roots, and then progressively dissected with coagulation of arterial feeders and draining vein and division of the pia circumferentially. Postoperative MRI revealed complete resection. The patient completely recovered from her quadriparesis and difficulty swallowing.

KEY WORDS: hemangioblastoma, medulla oblongata, Von Hippel Lindau syndrome, microsurgery, resection

Operative Neurosurgery 15:E64–E65, 2018

DOI:10.1093/ons/opy074

Received, December 4, 2017. Accepted, March 16, 2018.

Disclosure

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

REFERENCES

1. Arnautovic KI. Microsurgical resection of spinal cord tumors: reevaluation of personal series [Abstract]. Paper presented at: *J Neurol Surg A Cent Eur Neurosurg* (S 02) 2015.
2. Ene CI, Morton RP, Ferreira M, Sekhar LN, Kim LJ. Spontaneous hemorrhage from central nervous system hemangioblastomas. *World Neurosurg.* 2015;83(6):1180.e13-1180.e17.
3. Joaquim AF, Ghizoni E, dos Santos MJ, Valadares MG, da Silva FS, Tedeschi H. Intramedullary hemangioblastomas: surgical results in 16 patients. *Neurosurg Focus.* 2015;39(2):E18.
4. Kuharic M, Jankovic D, Splavski B, Boop FA, Arnautovic KI. Hemangioblastomas of the posterior cranial fossa in adults: demographics, clinical, morphologic, pathologic, surgical features, and outcomes. A systematic review. *World Neurosurg.* 2018;110:e1049-e1062.
5. Lee B, Marquez YD, Giannotta SL. Resection of a cystic brainstem hemangioblastoma via a retrosigmoid approach. *Neurosurg Focus.* 2014;36(1 Suppl):1.
6. Lonser RR, Butman JA, Huntoon K, et al. Prospective natural history study of central nervous system hemangioblastomas in von Hippel-Lindau disease. *J Neurosurg.* 2014;120(5):1055-1062.
7. Lonser RR, Weil RJ, Wanebo JE, DeVroom HL, Oldfield EH. Surgical management of spinal cord hemangioblastomas in patients with von Hippel-Lindau disease. *J Neurosurg.* 2003;98(1):106-116.
8. Ma D, Wang Y, Du G, Zhou L. Neurosurgical management of brainstem hemangioblastomas: a single-institution experience with 116 patients. *World Neurosurg.* 2015;84(4):1030-1038.
9. Parker F, Aghakhani N, Ducati LG, et al. Results of microsurgical treatment of medulla oblongata and spinal cord hemangioblastomas: a comparison of two distinct clinical patient groups. *J Neurooncol.* 2009;93(1):133-137.
10. Weil RJ, Lonser RR, DeVroom HL, Wanebo JE, Oldfield EH. Surgical management of brainstem hemangioblastomas in patients with von Hippel-Lindau disease. *J Neurosurg.* 2003;98(1):95-105.
11. Wind JJ, Bakhtian KD, Sweet JA, et al. Long-term outcome after resection of brainstem hemangioblastomas in von Hippel-Lindau disease. *J Neurosurg.* 2011;114(5):1312-1318.
12. Yoon JY, Gao A, Das S, Munoz DG. Epidemiology and clinical characteristics of hemangioblastomas in the elderly: an update. *J Clin Neurosci.* 2017;43:264-266.

Acknowledgments

The authors wish to thank Andrew J. Gienapp, BA (Department of Medical Education, Methodist University Hospital, Memphis, Tennessee and Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, Tennessee) for copy editing, preparation of the manuscript for publishing, and publication assistance with this surgical video.

COMMENTS

This video reviews a well described procedure with an excellent outcome. This operative video can serve as a tutorial for surgeons attempting to perform this approach.

Juan M. Revuelta Barbero
Madrid, Spain

The authors present a video of resection of medulla oblongata hemangioblastoma. The accent is done on a technique of nodule tumor removal. Video demonstrates step-by-step technique when at last stage coagulation and an intersection of draining vein is carried out.¹ This maneuver allows one to avoid venous congestion at early stages of a nodule removal and thereby to decrease the risk of related complications. The aim of the surgery is an en block removal of the tumor that was well shown by presented video.

Danil A. Kozyrev
St. Petersburg, Russia

-
1. Bostrom A, Hans FJ, Reinacher PC, et al. Intramedullary hemangioblastomas: timing of surgery, microsurgical technique and follow-up in 23 patients. *Eur Spine J.* 2008;17(6):882-886.