# Journal Pre-proof

Microsurgical Resection of Petroclival Meningioma via the Posterior Petrosal Approach: 3-Dimensional Operative Video

Guilherme H.W. Ceccato, MD, Gabriela F. Kalkmann, Denildo C.A. Veríssimo, MD, Luis A.B. Borba, MD, PhD, IFAANS

PII: \$1878-8750(20)32601-2

DOI: https://doi.org/10.1016/j.wneu.2020.12.035

Reference: WNEU 16485

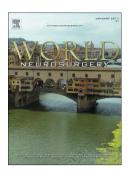
To appear in: World Neurosurgery

Received Date: 1 October 2020
Revised Date: 5 December 2020
Accepted Date: 7 December 2020

Please cite this article as: Ceccato GHW, Kalkmann GF, Veríssimo DCA, Borba LAB, Microsurgical Resection of Petroclival Meningioma via the Posterior Petrosal Approach: 3-Dimensional Operative Video, *Canadian Journal of Cardiology* (2021), doi: https://doi.org/10.1016/j.wneu.2020.12.035.

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2020 Elsevier Inc. All rights reserved.



## 1 Microsurgical Resection of Petroclival Meningioma via the Posterior

### 2 Petrosal Approach: 3-Dimensional Operative Video

3

- 4 Guilherme H. W. Ceccato, MD, Gabriela F. Kalkmann, Denildo C. A. Veríssimo, MD, 1,3
- 5 Luis A. B. Borba, MD, PhD, IFAANS <sup>1,3</sup>

6

- 7 1. Department of Neurosurgery, Mackenzie Evangelical University Hospital, Curitiba, PR,
- 8 Brazil
- 9 2. School of Medicine, Federal University of Paraná, Curitiba, PR, Brazil
- 10 3. Department of Neurosurgery, Federal University of Paraná, Curitiba, PR, Brazil

11

12

- 13 **Key words**: posterior petrosal; petroclival; meningioma; skull base; tumor
- 14 **Disclosure statement**: All authors contributed to this article and attest no conflicts of
- interest. All authors have no financial disclosures.
- 16 **Disclosure funding:** None.
- 17 Patient Consent Statement: informed consent was obtained from the patient for the
- procedure and publication of this operative video.

19

- 20 Corresponding author:
- Luis A. B. Borba, M.D., Ph.D., IFAANS
- 22 Rua Paulo Gorski 1240 #7
- 23 CEP 81210220
- 24 Curitiba, PR Brazil
- 25 E-mail: luisborba@me.com

#### **Abstract**

2

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1

Petroclival meningiomas are complex lesions, deep-seated and related with many critical neurovascular structures. We present the case of a 44-year-old female presenting a history of severe left facial pain, hearing loss and tinnitus on the left side, associated with left facial hypoesthesia. (Video 1) Preoperative MRI demonstrated a mass highly suggestive of a left petroclival meningioma. Considering worsening of symptoms and important mass effect, microsurgical resection employing the posterior petrosal approach was performed. Initially the mastoidectomy was done and then the craniotomy encompassing both posterior and middle cranial fossae. Posterior fossa and middle fossa dural incisions are connected coagulating and sectioning superior petrosal sinus. Then tentorium is all the way cut toward incisura, with care to preserve fourth nerve in the last cut. After complete tentorium incision presigmoid space increases. The lesion was totally resected employing microsurgical techniques and with aid of ultrasonic aspirator to debulk the mass and be possible to circumferentially dissect it. Postoperative MRI demonstrated complete tumor resection. Patient presented improvement of symptoms and no new neurological deficit on follow-up. Skull base approaches, like the posterior petrosal, are useful to successfully treat challenging lesions as the one presented and have low morbidity. Laboratory training is essential to get familiarized with the complex intraoperative neuroanatomical nuances. Informed consent was obtained from the patient for the procedure and publication of this operative video. Anatomical images were a Courtesy of the Rhoton Collection, American Association of Neurological Surgeons (AANS)/Neurosurgical Research and Education Foundation (NREF).

2324

**Key Words:** posterior petrosal; petroclival; meningioma; skull base; tumor

2526

27 Video 1: microsurgical resection of petroclival meningioma via the posterior petrosal approach.

28

- 29 Video link:
- 30 https://drive.google.com/file/d/1p\_haJZ6\_ocU30q7Z60uXLumN3oxSkoGC/view?usp=sharing

31

#### Journal Pre-proof

1	Abbreviations:
2	
3	CN: cranial nerve
4	LSC: lateral semicircular canal
5	PCA: posterior cerebral artery
6	PSC: posterior semicircular canal
7	SCA: superior cerebellar artery
8	SCCs: semicircular canals
9	SPS: superior petrosal sinus
10	SPV: superior petrosal vein

SSC: superior semicircular canal

11