

Journal Pre-proof

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

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

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13 **Key words:** posterior petrosal; petroclival; meningioma; skull base; tumor

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1 Abstract

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

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

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

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29 Video link:

30 https://drive.google.com/file/d/1p_haJZ6_ocU30q7Z60uXLumN3oxSkoGC/view?usp=sharing

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1 **Abbreviations:**

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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

11 SSC: superior semicircular canal

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