



Mini Review

Volume 19 Issue 4 - August 2021
DOI: 10.19080/CTOIJ.2021.19.556016

Cancer Ther Oncol Int J

Copyright © All rights are reserved by Dr. Behzad Saberi

Retrosigmoid Approach to Petroclival Meningiomas, Review on the Important notes in the Surgical Technique



Dr. Behzad Saberi*

Medical Research, Esfahan, Iran

Submission: August 01, 2021; **Published:** August 13, 2021

***Corresponding author:** Dr. Behzad Saberi, Medical Research, Esfahan, Iran

Keywords: Retrosigmoid approach; Petroclival meningiomas; Surgical technique

Mini Review

There are various surgical choices to approach the Petro clival meningiomas based on various factors like the size, location and the extension of the tumors, neurological condition of the patients, their ages, facial nerve and hearing functions of the patients, neurosurgeons experiences and preferences. This is a review on some important surgical notes in retro sigmoid approach to Petro clival meningiomas [1].

Petroclival meningiomas which do not have significant middle fossa extension can be treated by using retrosigmoid approach. Resection of the infratentorial part of the tumor should be done at first since decompression of the brainstem is an important treatment step in petroclival meningioma. Using retrosigmoid approach to treat petroclival meningioma can have some advantages like facial and vestibulocochlear nerve injury reduction, petrous bone's extensive resection avoidance and postoperative CSF leak reduction. Retrosigmoid intradural suprameatal approach can be used for petroclival tumors which have supratentorial extension in which petrous bone's intradural drilling above and anterior to the internal acoustic meatus would be done during that, leading to have better view for trigeminal nerve and Meckel's cave [2]. In the patients with small posterior fossa or ones with VP shunt, the sitting position would be the choice while the semi-sitting position is preferred in the cases without hydrocephalus and VP shunt. Standard suboccipital retrosigmoid craniotomy would be done and sigmoid and transverse sinuses would be exposed.

In case of necessity, mastoid cells would be removed. Removing of the posterior rim of the foramen magnum should be done either in the cases which the tumor is large and has

caudal extension. After dural and cerebello-medullary cistern opening, evacuation of the cerebrospinal fluid would be done and after retraction of the hemisphere of the cerebellum, the tumor would be exposed at the CP-Angle. Identifying the trigeminal, facial and vestibulocochlear nerves should be done afterwards [3]. Resection of the tumor should be done in the lateromedial direction from the upper pole which starts from the tentorium and bone and will continue towards the brainstem. Measuring of the facial electromyographic responses, brainstem auditory evoked potentials and somatosensory evoked potentials should also be done during surgery. Choosing retrosigmoid approach to treat petroclival meningiomas allows identifying the cranial nerves while entering or exiting from the dura or bone in the earlier stages. In small tumors, identifying the cranial nerves specifically the lower ones would be easier while in large cases, enough care should be taken to preserve the nerves since they can be attached to the tumor or being encased by the tumor. In this approach it is important to preserve arachnoid layer during detachment of the tumor from the brainstem and cranial nerves. Enough care should be taken to avoid causing injury to perforating arteries either [4,5].

It is important for the neurosurgeons to have detailed knowledge about neurosurgical anatomy of the retro sigmoid approach to use it appropriately and with lowest possible surgical complications in the treatment of Petro clival meningiomas.

References

1. Bricolo AP, Turazzi S, Talacchi A, Cristofori L (1992) Microsurgical removal of petroclival meningiomas: A report of 33 patients. *Neurosurgery* 31(5): 813-828.

2. Sekhar LN, Wright DC, Richardson R, Monacci W (1996) Petroclival and foramen magnum meningiomas: Surgical approaches and pitfalls. J Neurooncol 29(3): 249-259.
3. Martinez R, Vaquero J, Areitio E, Bravo G (1983) Meningiomas of the posterior fossa. Surg Neurol 19(3): 237-243.
4. Siwanuwatn R, Deshmukh P, Figueiredo EG, Crawford NR, Spetzler RF, et al. (2006) Quantitative analysis of the working area and angle of attack for the retrosigmoid, combined petrosal, and transcochlear approaches to the petroclival region. J Neurosurg 104(1): 137-142.
5. Nishimura S, Hakuba A, Jang BJ, Inoue Y (1989) Clivus and apicopetroclivus meningiomas – Report of 24 cases. Neurol Med Chir (Tokyo) 29(11): 1004-1011.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/CTOIJ.2021.19.556016](https://doi.org/10.19080/CTOIJ.2021.19.556016)

**Your next submission with Juniper Publishers
will reach you the below assets**

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
(Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>