

Video Abstract

One burr-hole craniotomy: Upper retrosigmoid approach in helsinki neurosurgery

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Abstract

Background: In this video-abstract, we present a one burr-hole craniotomy for the upper retrosigmoid approach developed in Helsinki Neurosurgery to access the lateral cerebellar hemisphere, the cerebellopontine angle, and lateral skull base (e.g. including the posterior petrous bone). This approach may be utilized to manage tumors of the lateral posterior fossa and to perform microvascular cranial nerve decompression of the V or VII cranial nerves. The upper portion of the vertebral-posterior cerebral artery complex, and the anterior inferior cerebellar artery may also be accessed with this technique. Even though the specific location and size of the lesion may vary, this approach accesses all mentioned structures with a very minimal variation.

Case Description: The patient with an unsuspected right cerebellopontine angle metastasis from a lung cancer is placed in the park bench position. Spinal drainage is inserted to release 50–100 ml of cerebrospinal fluid. The head and upper torso are elevated so that the head is about 20 cm above the heart level. A single-layer skin incision is made about one inch behind the mastoid process; the exact cranial to caudal location of the incision varies depending on how high or low one has to be from the foramen magnum and locus of pathology. The junction of the sigmoid and the transverse sinus is usually located just caudal to the zygomatic line, between the zygoma and the external occipital protuberance, and posterior to the mastoid line that is running caudally through the tip of the mastoid process. Dissection with curved retractors creates a clean space for the craniotomy. First, a burr-hole is made at the posterior border of the bone flap. Two curved cuts are made towards the mastoid process, allowing the sigmoid sinus to be partially exposed. The bone is cracked after thinning the anterior border of the craniotomy. A few drill holes are then made for tacking-up sutures. Finally, a sinus-based dura opening is performed under the microscope.

Conclusion: Here, we described a one burr-hole craniotomy that provides an excellent approach to retrosigmoid lesions.

Video link: <http://surgicalneurologyint.com/videogallery/retrosigmoid-approach>

Key Words: Burr-hole, craniotomy, retrosigmoid approach

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