

Video Abstract

One burr-hole craniotomy: Suboccipital midline approach to the fourth ventricle in Helsinki neurosurgery

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Abstract

Background: In this video-abstract, we present one burr-hole craniotomy for the standard suboccipital midline approach developed in Helsinki neurosurgery for the microsurgical management of fourth ventricle lesions, distal posterior inferior cerebellar artery aneurysms, and tumoral and vascular lesions of the vermis, cisterna magna region, and posterior brainstem as well.

Case Description: We prefer to position the patient in sitting praying position. A midline straight single-layer incision starts on theinion and extends caudally toward the level of C2. The muscles are divided with diathermia along the occipital bone. Three curved retractors, two upward and one downward, provide a wide clean space for the craniotomy. Finger palpation and blunt dissection with cottonoids balls provide identification of the foramen magnum and the spinous process of C1. A burr-hole is made 1 cm lateral and below the level of the transverse sinus. After the detachment of the dura with a curved angled dissector, two cuts from both sites of the burr-hole are made with the craniotome. In case of an adherent dura particularly present in elderly patients, a long blunt flexible dissector (yasargil dissector) is used for the detachment of the bone from the dura. A craniotomy around the midline overlying the occipital sinus and the falx cerebelli is performed to expose medial aspects of cerebellar tonsils, the medulla oblongata, and the occipital sinus. Special care should be taken to avoid damaging the vertebral artery and the epidural sinuses running at the foramen magnum. A few drill holes are made for tack-up sutures. After a craniocervical-based opening of the dura, the fourth ventricle is accessed directly by telovelar route.

Conclusion: The described one burr-hole craniotomy may represent the more efficient manner for performing the suboccipital midline approach to the fourth ventricle.

Videolink: <http://surgicalneurologyint.com/videogallery/suboccipital-midline-approach/>

Key Words: Burr-hole, craniotomy, fourth ventricle, suboccipital approach

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