

Video Abstract

One burr-hole craniotomy: Lateral supraorbital approach in Helsinki Neurosurgery

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Abstract

Background: In this video abstract, we present a one burr-hole craniotomy for the standard lateral supraorbital approach (LSO) developed by Helsinki Neurosurgery. This is a more aesthetic variant of the classic pterional approach. Presently, the LSO approach is most commonly used at our institution. With the LSO technique, the temporal muscle is just minimally opened close to its superior insertion. Posterior and temporal extension of the craniotomy, furthermore, allows adequate access to the anterior skull base, the sellar and suprasellar regions, the middle cranial fossa, the anterior portion of the Sylvian fissure, and the distal Sylvian fissure. 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 unruptured anterior communicating artery aneurysm is placed in supine position with the head elevated 30 cm from the level of the heart. The head position is determined by the specific location of the lesion. A curved frontotemporal skin incision is made behind the hairline which stops 2–3 cm above the zygoma. Anterior retraction and hemostatic Raney clips placed at the posterior border of the skin flap maintain a clean space for the craniotomy. A burr-hole is made at the level of the temporal line in the frontal bone. After the dura is detached with blunt dissection, a craniotomy is performed to reach the anterior skull base. A few drill holes are made for tack-up sutures and the dura is opened using conventional techniques. The anterior skull base, sellar/suprasellar regions, and select lesions located in the upper basilar region may be accessed through this subfrontal approach. Middle cerebral artery aneurysms and lesions located along the sylvian fissure or in the middle fossas may also be approached with this exposure, but would require further opening of the proximal sylvian fissure.

Conclusion: There we described the LSO one burr-hole craniotomy technique that may represent a more efficient procedure for performing LSO.

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Key Words: Burr-hole, craniotomy, lateral supraorbital approach

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