



Video Abstract

Unedited microneurosurgery of a falcotentorial meningioma

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ABSTRACT

Background: Falcotentorial meningiomas are pineal region meningiomas that arise from the dura of the tentorium cerebelli and posterior part of the falx. These tumors are commonly supplied by branches of the internal carotid artery such as the meningohypophyseal trunk, inferolateral trunk, and anterior choroidal artery. Less frequently, branches of the ophthalmic artery, vertebral artery, or external carotid artery are also involved. Based on neuroimaging studies, falcotentorial meningiomas may be classified as anterior, superior, inferior, and posterior types. Here, we present an unedited microsurgical resection of a superior falcotentorial meningioma.

Case Description: The patient with a meningioma of the posterior inferior falx and a minimal extension to the tentorium underwent sitting praying position and a right occipital interhemispheric approach. Strong retraction of the dura followed a superior sagittal sinus based opening. Careful microsurgical access between the medial surface of the occipital lobe and the falx toward the splenium of corpus callosum allowed us to recognize the lesion. Thus, a cottonoid placed over the cerebral surface avoiding direct contact with the bipolar forceps, and the constant separation of the falx cerebri with the aspiration tube along the access developed a proper surgical route preventing any cortical lesion. Along the approach, cerebrospinal fluid was continuously released from the pericallosal cistern as well. Once well recognized the meningioma, we proceeded with the internal decompression of the lesion using a thumb regulated suction tube and bipolar forceps. Tissue samples from the tumor were taken for the histological diagnosis, and under conventional microsurgical technique, the meningioma was completely removed by piecemeal technique. A small lateral tear on the falx required hemostatic reparation with Tachosil. Water dissection provided us a clear cleavage plane for the microsurgical dissection of the tumor and maintained a clean operative field along the procedure. Occipital arteries running over the lateral surface of the meningioma were carefully dissected and isolated from the lesion, while the deep venous system did not achieve any contact with the tumor. After the ipsilateral component of the meningioma was resected, we intent are dissecting the contralateral segments of the tumor with a curved dissector. At the last stage of the surgery, small incision at a tumor-free segment of the falx allowed us to remove the falcotentorial attachment of the lesion. Under high microscopic magnification, the remaining minimal portion of meningioma extending under the tentorium was coagulated. After complete microsurgical removal of the meningioma, careful homeostasis based on electrocoagulation surgical and Tachosil was achieved. Finally, we performed a surgical wound closure under standard technique.

Conclusion: This unedited video offers all detailed aspects for an efficient and safe falcotentorial meningioma microneurosurgery.

Videolink: <http://surgicalneurologyint.com/videogallery/pineal-meningioma>.

Keywords: Falcotentorial meningioma, Occipital interhemispheric approach, Pineal region, Sitting position, Unedited microsurgical video

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