

## Video Abstract

# Focused opening of the Sylvian fissure for the management of middle cerebral artery aneurysms

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## Abstract

**Background:** A wide opening of the Sylvian fissure (SF) regarding the treatment of middle cerebral artery (MCA) aneurysm allows us to ensure early proximal control by the proximal start of Sylvian dissection and enough comfort for the microsurgical manipulation and aneurysm clipping. However, major mechanical manipulation of arteries associated with blood oozing into the surgical field may increase the incidence of postoperative vasospasm. The risk of Sylvian venous injury is bigger, and the damage of the superior temporal gyrus increases the risk of postoperative epilepsy as well. A focused opening of the SF based on 18 years experience of a senior author is an alternative technique we present in this video abstract.

**Technique:** A proper preoperative planning and an image-based anatomic orientation of the Sylvian opening together with a complete understanding of the microanatomy of the clipping field are essential requirements for a proper focused SF opening. A patient with an MCA bifurcation aneurysm is placed in supine position. The head elevated 20 cm above the cardiac level is slightly extended, rotated to the contralateral side, and tilted laterally. A lateral supraorbital approach is performed. After cerebrospinal fluid release and under high magnification, the opening place of the SF is identified. Thus, 10–15 mm opening is made with a sharp needle followed by microscissors. Under a keyhole concept, the M1 segment of the MCA is recognized, and the aneurysm is carefully dissected. A temporary clipping with a proximal control of the M1 segment is followed by a definitive clipping of the aneurysm. Postoperative imaging does not show any complication.

**Conclusion:** The focused opening of the SF is a less invasive technique for the management of MCA bifurcation aneurysms. However, some extra considerations should be taken for large or giant aneurysms in which a wide opening of the SF might be required for a proper aneurysm manipulation, and for those deep MCA bifurcation aneurysms close to the internal carotid artery bifurcation, in which an anterograde dissection of the MCA might be more suitable.

**Videolink:** <http://surgicalneurologyint.com/videogallery/focused-opening-of-the-sylvian-fissure/>

**Key Words:** Focused opening, middle cerebral artery aneurysms, Sylvian fissure

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