

SURGICAL APPROACHES TO MCA ANEURYSMS

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Aim: MCA aneurysms account from 20 to 30 percent of all intracranial aneurysms. In the era of novel endovascular techniques, MCA aneurysms are the most frequent vascular pathology in neurosurgical practice. Most of MCA aneurysms have been operated on at our institution using supraorbital or temporal keyhole approach, and the rest with standard larger pterional approach.

Methods: We have analyzed data retrospectively of the patients with MCA aneurysms that were surgically treated at our Department during the past 15 years. Surgical approach was based on location and size of aneurysm, as well as variations in MCA anatomy, fundus orientation and neck characteristics.

Results: From January 2002 to December 2016, 1077 patients with aneurysms of various location were surgically treated at our Department. The proportion of MCA aneurysms comparing to other locations reached over 40% and still rises because the aneurysms on other locations are more frequently treated endovascularly. A total of 336 patients with 368 aneurysms underwent surgery through a small supraorbital craniotomy using subfrontal trajectory as the approach of choice. In 153 patients we performed either a temporal keyhole or standard pterional approach with a lateral transsylvian route.

Conclusion: Both approaches have applications in different aneurysms locations and orientations within the Sylvian fissure. The advantages of supraorbital subfrontal approach are earlier proximal artery control specially in aneurysms located on M1 MCA segment. However, pterional approach is preferred for distal MCA aneurysms, anteriorly and laterally located bifurcation aneurysms, giant and wide neck aneurysms, ruptured aneurysms with temporal haematoma or if other additional surgical procedures such as bypass, thrombectomy etc. are needed.

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