

Unruptured middle cerebral artery aneurysm

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- Flow diversion for treatment of acutely ruptured intracranial aneurysms: Comparison of complications and clinical outcomes with coil embolization
- Endovascular treatment of posterior circulation aneurysms with flow diverters with hydrophilic polymer coating in patients receiving prasugrel single antiplatelet therapy: a multicenter case series presenting complication and occlusion rates
- Association between body mass index and intracranial procedural complications in patients undergoing endovascular treatment for unruptured aneurysms
- FloWise Flow Diverter for Treatment of Unruptured Wide-Neck Intracranial Aneurysms: A Prospective, Multicenter, Single-Arm, Open-Label, Pivotal Study
- 7T MR Angiography for Distinguishing Small Intracranial Aneurysms from Variant Anatomy: Protocols and Impact
- Apolipoprotein A1 Levels Are Inversely Associated with Aneurysm Wall Enhancement in Unruptured Intracranial Aneurysms
- Functional outcomes following treatment of unruptured middle cerebral artery aneurysms: a single-centre comparison of microsurgical vs. endovascular management
- Influence of Fetal-Type Posterior Cerebral Artery on Morphological Characteristics and Rupture Risk of Posterior Communicating Artery Aneurysms: A Radiomics Approach

Unruptured middle cerebral artery aneurysm are regularly treated by both microsurgical clipping and endovascular coiling.

Classification

Unruptured middle cerebral artery aneurysm classification.

Treatment

see Middle cerebral artery aneurysm treatment

Metaanalysis

2015

For a systematic metaanalysis to compare the safety and efficacy of these two methods, literature was reviewed for all studies reporting angiographic occlusion and/or functional outcomes in adults with unruptured MCAA treated by endovascular coiling or microsurgical clipping. All studies that reported results for adults (≥ 18 years) with unruptured MCAA, from 1990-2011 in English were considered for inclusion.

Twenty-six studies involving 2295 aneurysms undergoing clipping or coiling for unruptured MCA aneurysms were included for analysis. There were 1530 aneurysms which were treated with clipping, and 765 aneurysms treated with coiling. Pooled analysis revealed failure of aneurysmal occlusion in 3.0% (1.2-7.4% 95% CI) of clipped cases. Pooled analysis of 15 studies (606 aneurysms) involving coiling and occlusion revealed lack of occlusion rates of 47.7% (43.6-51.8% 95% CI) with the fixed-effects model and 48.2% (39.0-57.4% 95% CI) with the random-effects model. Thirteen studies examined neurological outcomes after clipping and were pooled for analysis. Both fixed- and random-effect models revealed unfavourable outcomes in 2.1% (1.3-3.3% 95% CI) of patients. There were 17 studies evaluating potential unfavourable neurological outcomes after coiling that were pooled for analysis. Fixed- and random-effect models revealed unfavourable outcomes in 6.5% (4.5-9.3% 95% CI) and 4.9% (3.0-8.1% 95% CI) of patients respectively.

Based upon this systematic review and meta-analysis of unruptured MCAA, after careful consideration of patient, aneurysmal, and treatment center factors, Smith et al. recommend surgical clipping for unruptured MCAA ¹⁾.

2012

A systematic review was conducted to determine morbidity of the procedure by performing a meta-analysis of the literature. The authors used a PubMed and J-stage search from 2000 to 2011 for studies containing the surgical clipping of the unruptured MCA AN. There were 21 articles, containing a total 1,323 cases of unruptured AN with morbidity specifically located in the MCA. 54 cases indicated significant neurological deficits for a morbidity rate of 4.1% (95% CI; 3.0-5.1). A limited number of studies disclosed an incremental increase in morbidity with the size of the aneurysm. Smaller MCA AN (7±3 mm) presented a lower morbidity of 1.48%, whereas giant MCA AN (>25 mm) corresponded with a higher morbidity of 27.8%. Factors consistently associated with high morbidity included incorporated MCA branches, plaque at the neck of the AN, an unclippable configuration, and M1 superior wall AN. Complex aneurysms required a wide array of intracranial bypass procedures, yielding morbidity of 23.4% (95% CI; 20.9-25.9). This is the first systematic review and quantitative meta-analysis of the surgical complications related to unruptured MCA AN ²⁾.

Case series

see [Unruptured middle cerebral artery aneurysm case series](#).

Case reports

see [Unruptured middle cerebral artery aneurysm case reports](#).

¹⁾

Smith TR, Cote DJ, Dasenbrock HH, Hamade YJ, Zammar SG, El Tecle NE, Batjer HH, Bendok BR. Comparison of the Efficacy and Safety of Endovascular Coiling Versus Microsurgical Clipping for Unruptured Middle Cerebral Artery Aneurysms: A Systematic Review and Meta-Analysis. *World Neurosurg.* 2015 Jun 17. pii: S1878-8750(15)00745-7. doi: 10.1016/j.wneu.2015.05.073. [Epub ahead of print] PubMed PMID: 26093360.

2)

Kawabori M, Kazumata K, Ohnishi K, Sugiyama T, Itoh M, Nakayama N, Houkin K. [Surgery for unruptured middle cerebral artery aneurysm]. No Shinkei Geka. 2012 Aug;40(8):731-40. Japanese. PubMed PMID: 22824580.

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