

Middle cerebral artery aneurysm Stent-assisted coiling

Extra intracranial bypass surgery is a well-established procedure for the treatment of chronic ischemic diseases of the carotid artery. Rarely de novo aneurysms can develop at the site of anastomosis. The treatment of these aneurysms can be very challenging due to various factors, including the presence of graft, previous craniotomy, atherosclerosis, and lack of direct access. In a video Joshi et al., from the Department of Neurological Surgery, Rush University Medical Center, Loyola University Medical Center and Cerebrovascular Neurosurgery and Comprehensive Stroke Center, Chicago, Illinois, report and discuss the management of a right middle cerebral artery (MCA) wide-necked de novo aneurysm by Stent-assisted coiling through a retrograde trans-posterior communicating artery access. The video can be found here: <https://youtu.be/MBKolPvOErU>

```
<html><iframe width="560" height="315" src="https://www.youtube.com/embed/MBKolPvOErU"
frameborder="0" allow="accelerometer; autoplay; encrypted-media; gyroscope; picture-in-picture"
allowfullscreen></iframe> </html> 1).
```

57 patients with MCA trifurcation wide-necked aneurysms underwent stent-assisted coiling embolization using a solitaire AB stent. All 57 patients completed the surgery successfully. Embolization efficacy was graded according to the Modified Raymond-Roy Classification.

There were 52 cases of complete embolization, 4 cases of residual aneurysm neck, and 1 case of residual aneurysm body. 50 patients participated in a 6-36-month follow-up. There has not been observed any aneurysm rupture and hemorrhage. 50 patients received digital subtraction angiography (DSA) re-examination; 46 patients presenting complete embolization had no aneurysm relapses; 3 patients had residual aneurysm neck demonstrated; 1 patient had no aneurysm neck and others 2 were in stable condition. Finally, the patient with residual aneurysm body showed no sign during follow-up reexamination.

Stent-assisted coiling embolization of intracranial wide-necked aneurysms using the solitaire AB stent was safe and effective ²⁾.

From November 2003 to October 2009, 49 patients (27 men, 22 women; mean age, 52 ± 12 years) harboring 52 complex unruptured MCA aneurysms (11 ruptured previously and coiled but recanalized and 41 unruptured) were treated by EVT by using self-expandable intracranial stents. Procedural complications, clinical outcome, and initial and midterm angiographic results were evaluated. Initial treatment status and aneurysm sac size were tested as potential risk factors for recurrence.

After successful stent deployment, coiling was performed in 50 aneurysms (96.2%) in 47 patients; however, 2 failures (3.8%) occurred in 2 patients. Ten intrastent clot formations (20%) observed on final control angiography induced 2 permanent moderate disabilities (GOS score = 2). Mortality and permanent neurologic morbidity were 0% and 4.3%, respectively. At a mean period of 14 ± 9 months, among 48 aneurysms in 45 patients eligible for follow-up, 34 complete (71%) and 14 partial treatments (29%) were observed, 7 recurrences (14.6%) occurred, and 5 patients (10.4%) needed retreatment. No aneurysm bleeding or symptomatic intrastent stenosis was observed. Aneurysm sac

size ≥ 7 mm and incomplete initial treatment were associated with more recurrences without a statistically significant difference.

For complex unruptured MCA aneurysms, EVT by using a self-expandable intracranial stent was feasible, safe, and durable and could be considered as the first-option treatment ³⁾.

References

¹⁾

Joshi KC, Heiferman DF, Beer-Furlan A, Lopes DK. Stent-assisted coil embolization of MCA aneurysm via a trans-posterior communicating artery access. *Neurosurg Focus*. 2019 Jan 1;46(Suppl_1):V3. doi: 10.3171/2019.1.FocusVid.18444. PubMed PMID: 30611185.

²⁾

Chen Y, Zhang Y, Chao YJ, Gao G, Ni CS, Fu XM, Wei JJ, Gu DQ, Yu J. Stent-assisted coiling embolization of middle cerebral artery trifurcation wide-necked aneurysms. *Eur Rev Med Pharmacol Sci*. 2017 Oct;21(19):4346-4349. PubMed PMID: 29077162.

³⁾

Vendrell JF, Costalat V, Brunel H, Riquelme C, Bonafe A. Stent-assisted coiling of complex middle cerebral artery aneurysms: initial and midterm results. *AJNR Am J Neuroradiol*. 2011 Feb;32(2):259-63. doi: 10.3174/ajnr.A2272. Epub 2010 Oct 21. PubMed PMID: 20966055.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=middle_cerebral_artery_aneurysm_stent-assisted_coiling

Last update: **2024/06/07 02:56**

