# Anterior communicating artery aneurysm outcome

Despite advances in the management of subarachnoid hemorrhage and surgical treatment of aneurysms, mortality is still high, especially due to clinical complications <sup>1)</sup>.

## Hydrocephalus after aneurysmal subarachnoid hemorrhage

Hydrocephalus after aneurysmal subarachnoid hemorrhage

## **Rupture risk**

see Anterior communicating artery aneurysm rupture risk.

The long-term cognitive and quality of life (QoL) outcomes after ruptured anterior communicating artery aneurysm treatments are unknown.

Potential participants were all consecutive patients with ruptured ACoA aneurysms who were treated at one institution from July 1992 to December 2008. All potential participants were asked to complete the Cognitive Failures Questionnaire (CFQ), Center for Epidemiology Studies-Depression (CES-D) questionnaire, Short Form 36 (SF-36) questionnaire, and Telephone Interview for Cognitive Status-Modified (TICS-M). Patient charts were retrospectively reviewed for baseline demographics and clinical status, intra-operative details, and post-operative course. Reporting of cognitive and QoL assessment results was stratified by treatment method (endovascular coil embolization and surgical clipping by pterional craniotomy or orbitocranial craniotomy). Results In total, 82 patients (18 treated with coiling, 27 by orbitocranial craniotomy, and 37 by pterional craniotomy) were included in this study. In total, 32 patients (9 treated by coiling, 11 by orbitocranial craniotomy, and 16 by pterional craniotomy) completed follow-up cognitive and QoL questionnaires. The mean follow-up for patients who completed the questionnaires was 8.64±3.81 years. The three groups did not differ in questionnaires assessing cognitive status (TICS-M p=0.114, CFQ p=0.111). Moreover, there were no observed differences in QoL or depression scores between the three groups. Conclusions At long-term follow-up, QoL, cognitive, and depression test scores of patients with ruptured ACoA aneurysms are similar across open surgery and coiling modalities. Our results emphasize the importance of considering long-term outcomes with validated daily measures of functioning when reporting on outcomes after treatment for ruptured intracranial aneurysms. Larger prospective studies are required to further explore the results  $^{2)}$ .

### **Case series**

#### 2017

An asymmetry of the A1 segment of the anterior cerebral artery (A1SA) was identified on digital subtraction angiography studies from 127 patients (21.4%) and was strongly associated with anterior

communicating artery aneurysm (ACoAA) (p < 0.0001, OR 13.7). An A1SA independently correlated with the occurrence of anterior cerebral artery infarction in patients with ACoAA (p = 0.047) and in those without an ACoAA (p = 0.015). Among patients undergoing ACoAA coiling, A1SA was independently associated with the severity of anterior cerebral artery infarction (p = 0.023) and unfavorable functional outcome (p = 0.045, OR = 2.4).

An A1SA is a common anatomical variation in SAH patients and is strongly associated with ACoAA. Moreover, the presence of A1SA independently increases the likelihood of ACA infarction. In SAH patients undergoing ACoAA coiling, A1SA carries the risk for severe ACA infarction and thus an unfavorable outcome. Clinical trial registration no.: DRKS00005486 (http://www.drks.de/)<sup>3)</sup>.

## Ruptured anterior communicating artery aneurysm outcome

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1)

Soares FP, Velho MC, Antunes ACM. Clinical and morphological profile of aneurysms of the anterior communicating artery treated at a neurosurgical service in Southern Brazil. Surg Neurol Int. 2019 Oct 4;10:193. doi: 10.25259/SNI\_41\_2019. eCollection 2019. PubMed PMID: 31637094; PubMed Central PMCID: PMC6800289.

2)

Nassiri F, Workewych AM, Badhiwala JH, Cusimano MD. Cognitive Outcomes After Anterior Communicating Artery Aneurysm Repair. Can J Neurol Sci. 2018 Jul;45(4):415-423. doi: 10.1017/cjn.2018.16. Epub 2018 May 9. PubMed PMID: 29741146; PubMed Central PMCID: PMC6088546.

Jabbarli R, Reinhard M, Roelz R, Kaier K, Weyerbrock A, Taschner C, Scheiwe C, Shah M. Clinical relevance of anterior cerebral artery asymmetry in aneurysmal subarachnoid hemorrhage. J Neurosurg. 2017 Nov;127(5):1070-1076. doi: 10.3171/2016.9.JNS161706. Epub 2016 Dec 23. PubMed PMID: 28009232.

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