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Letters to the Editor

Commentary on: Result of coiling versus clipping of unruptured anterior communicating artery aneurysms treated by a hybrid vascular neurosurgeon

Jorn Van Der Veken

Department of Neurosurgery, Flinders Medical Centre, Bedford Park, Australia

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Correspondence to
Jorn Van Der Veken
Flinders Medical Centre, Flinders Drive, Bedford Park, SA, Australia

Tel +61-(08) 8204 7777
Fax +61-(08) 8374 4928
E-mail jornvanderveken@gmail.com
ORCID http://orcid.org/0000-0002-8351-1978

TO THE EDITOR

Moon et al.[3] compare the short-term clinical and radiological outcome of 70 patients who underwent elective treatment of solitary, unruptured anterior communicating artery (acom) aneurysms. In this retrospective series by a single hybrid vascular neurosurgeon, patient (age and sex) and aneurysm characteristics (direction of dome, A1 dominance and contralateral A1, size, distance to planum, dome to neck ratio) for both clip and coil cohorts were reported.

As expected only 1 aneurysm in the clipped group was pointing posteriorly and there were more aneurysms with a distance from planum >10 mm in the coiled group (17/37 vs. 6/33).

Periprocedural mortality in all patients was 0% (0/70) and morbidity was 7.1% (5/70). Poor clinical outcome (modified Rankin Scale [mRS] of 3 to 6) at months of follow-up was seen in only one patient (1/37, 2.7%) for the coil group. Major recanalization rate is 5.6% for the coil group (1/18) and 10.0% for the clip group (1/10).

The authors should be congratulated for their honest results.

I do have some comments, other than the limitations of the study, already mentioned by the authors in their discussion.

Unfortunately, p-values were missing.

Poor clinical outcome was defined as a mRS score of 3 to 6.

For the elective treatment of unruptured aneurysms, a mRS of 1 or more is generally considered a poor outcome.[5]

I am interested in a more detailed analysis. Of the 36 patients in the coiling group with a good clinical outcome, how many had a mRS of 0, 1 or 2?

Would the conclusion have been different if a poor mRS would have been defined as 1 or more?

Three patients who underwent clipping had a procedure-related complication. Two of them were accompanied by a perforator infarction and the other by a remote cortical hemorrhage, causing a mild cognitive impairment for all three of them.

Probably one of the most underreported outcomes when treating acom aneurysms is neurocognitive change (memory, executive functions, language, behaviour, depression) particularly for unruptured aneurysms. Subtle deficits in memory and executive functions will not be picked up by a mRS or GOS.[2)]

Whether or not treatment modality affects neuropsychological outcomes remains currently unclear. Implementing a neuropsychological assessment pre- and postoperatively would be valuable.

Continuing with the importance of post-operative follow-up, unfortunately only the post-operative digital subtraction angiography results were included in this study. FU MRA and or CTA were excluded from this study due to the difficulty to accurately assess whether the aneurysm has recurred or not, due to metal artefacts. All patients underwent a postoperative CT and MRI as a standard postoperative management.

Documenting procedure-related radiological abnormalities would have been useful for both treatment modalities. High rates (38.1%) of treatment-related injury in patients with clipped unruptured acom aneurysms have been reported.[4)] In 2 prospective studies, 8 out of 15 patients had new DWI hits after the endovascular treatment of anterior cerebral artery/acom aneurysms and microembolic lesions were noted in 101 of 271 patients (37.3%) after endovascular coiling of unruptured cerebral aneurysms (mixed anterior and posterior circulation).[1)6)]

Evaluating complete occlusion is of evident importance, however objectifying iatrogenic injury should be registered and implemented when discussing outcomes. Whether these injuries are truly 'subclinical' is a question that might be answered by a thorough neuropsychological assessment.

To conclude, the quest to find the optimal treatment modality for specific subtypes of acom aneurysms in specific patient groups continues.

The specificity with which the authors subcategorise these aneurysm characteristics should be pursued. In light of the excellent results now obtained from elective aneurysm surgery, we should be responding by searching for increasingly subtle differences in outcome from the various treatment modalities to determine the best approach for individual patients.

In addition, there appear to be some calculation errors:

Table 1: clipping inferior 14, anterior 12 total 26 (in the table it says 36)

Furthermore, there appear to be some confusion with regards to the data in the text.

Under results, clipping, is written:

… 22 (59.5%) aneurysms were directed anteriorly or inferiorly, and 15 (40.3%) posteriorly or superiorly.

I presume the Table is correct and the correction should be: 26 (78.8%) aneurysm were directed anteriorly and inferiorly, and 7 (21.2%) posteriorly or superiorly.

Under results, coiling, is written:

In this group, 36 (78.8%) aneurysms were directed anteriorly or inferiorly, 7 (21.2%) posteriorly or superiorly.

I presume the Table is correct and the correction should be: 22 (59.5%) aneurysms were directed anteriorly and inferiorly, 15 (40.5%) posteriorly or superiorly.

Under paragraph results, complications and clinical results a number is missing:

Poor clinical outcome (mRS of 3 to 6) at months of follow-up was seen in only one patient (1/37, 2.7%) for the coil group.

I presume 6 months follow-up.

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