Reviewer's report

Title: Factors associated with seizure occurrence and long-term seizure control in Pediatric brain arteriovenous malformation: a retrospective analysis of 85 patients

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Reviewer: Michael Yoong

Reviewer's report:

The authors present an interesting review of their local experience treating children with AVM in a large tertiary centre in China. The optimal treatment of paediatric AVM is a current topic of debate within the neurosurgical community and this study presents one of the larger cohorts of patients reported to date. It therefore of potential interest and would represent a valuable addition to the literature if a number of concerns can be addressed.

Firstly there are numerous grammatical and stylistic errors within the article, sufficient to make it difficult to understand the meaning of the authors at several points. I am therefore not able to recommend this article for publication until it has undergone a more rigorous copy-editing process.

From a scientific viewpoint there are a number of points that require clarification and/or revision:

Major revisions
1. The inclusion criteria for the study need to be clearly stated. How were cases identified for inclusion in this case series?
2. Were any steps taken to estimate the level of ascertainment of cases? If not then some form of capture-recapture analysis or would be informative and should be performed.
3. The definition of “duration of seizures” needs revision and/or clarification. Were all of these children having recurrent seizures until they had treatment for their AVM? What was the frequency? From the description given a child who had a single seizure but then waited 6 months before resection would have a “seizure duration” of 6 months, this is not clinically meaningful and very different from a child who is having daily seizures for 6 months before resection.
4. The section on “New-onset seizures” is unclear. Is this section describing children who developed epilepsy after their AVM treatment during the follow-up period? This needs to be made clearer. Are these patients included in the seizure outcome analysis above this section? If not, they should be.
5. It is clearly wrong to conclude that haemorrhage protects from seizures, rather the more plausible conclusion is that AVM do not present unless they become symptomatic e.g. with seizures or when they rupture. This point is not made clear
in the discussion. The authors do mention that haemorrhage may be a risk factor for long term seizures, this seems a reasonable hypothesis and should also be explored in the analysis and results.

6. Is there any data on outcomes other than seizure outcome? Mortality/morbidity data should also be reported as this may also provide useful information to guide treatment choices.

Minor essential revisions
1. As death during the peri-oprative period is an important outcome, these children should not be excluded from the paper and their numbers and clinical characteristics should be noted.

2. The Spetzler-Martin grading system should be referenced

3. It is not clear what arrangements were made to follow-up the patients – was telephone follow-up arranged specifically for this study or was information obtained as part of routine clinical care? Please clarify.

4. Page 6, Lines 10-13: haemorrhage is unlikely to have been the reason the children presented to medical services and does not belong in this list. It should be mentioned separately.

5. Why were the asymptomatic patients referred to hospital?

6. Focal neurological deficit and headache are not mentioned in Table 1 and should be

7. Did duration of follow-up differ between the groups?

8. Is there any data on seizure frequency prior to treatment?

9. Page 5 Line 16 – “evetiracetam” should presumably be “levetiracetam”?

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests