Reviewer's report

Title: Two case reports of bilateral vertebral artery tortuosity and spiral twisting in vascular vertigo

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Reviewer: Venkatesh Krishnamurthy

Reviewer's report:

Comments
I certainly commend the authors for reporting two unusual cases of vascular vertigo with spiral twisting of the vertebral arteries. It is certainly an article of interest. I however have several suggestions which I will outline below.

I understand that the authors are not native English speakers and commend their efforts in writing up this interesting case report. The case report will be certainly of interest but will need some language corrections since quality of written English although readable is perhaps slightly below par for publication in a peer reviewed journal. I have outlined several examples of grammatical errors below but this list is not exhaustive. I would suggest that the authors review and edit the manuscript and make necessary corrections so that it can be considered to be at a suitable standard for publication.

The case report is certainly very interesting but the manuscript needs some major revisions before it could be considered for publication.

Major Revisions
The authors report that it has been found that the incidence vascular abnormalities and tortuosity in the vertebrobasilar artery is much higher than in the internal carotid artery. The reference cited to support this statement is a review article by Dr Savitz and Dr Caplan on ‘Vertebrobasilar disease’ and having reviewed this I do not find any convincing references to believe that the incidence of vascular tortuosity in the vertebra-basilar artery is much higher than in the internal carotid artery. Could the authors provide the original reference from the review article ‘referenced’ in their manuscript?

1. The reporting of cases needs revision. The presentation and examination findings should be concise and organized. It is preferable to highlight salient positive findings and summarize relevant negative findings. The authors do comment on a head impulse test or a Dix-Hall Pike manoeuvre in the ‘Discussion’ section but the results are not described. It is relevant to mention them in the examination section.

e.g. Case 1 - A 79 year old male was admitted with a three day history of paroxysmal vertigo, diplopia, nausea and weakness occurring one to two times daily, lasting three to five minutes and not associated with tinnitus, dysphagia, hearing loss, focal sensory symptoms or altered consciousness. He had been
hospitalized on at least two occasions for these episodes and symptoms were prolonged lasting more than ten days. He had a history of coronary artery disease but no history of diabetes or hypertension. On examination, he was amnesic for recent events, had a torsional nystagmus and a positive Rhomberg’s sign. The remainder of his neurological examination was unremarkable.

2. I do not see a need for headings e.g. Examination, Radiological and laboratory findings, Treatment etc. but they could instead be summarized in separate paragraphs.

3. It would be preferable to omit non-specific descriptions in the treatment section such as circulation improvement therapy and symptomatic therapy. If any specific interventions such as an Epley manoeuvre were used, it should be mentioned.

4. It remains unclear if either patient was already on an antiplatelet or a statin previously given the history of ischemic heart disease in patient 1 and diabetes and hypertension in the other. It is preferable to comment on their usual medications. The treatment section could be kept simple if no specific intervention was offered e.g. the patient was managed conservatively and treated with antiplatelets and statin. His symptoms resolved over a week.

The above comments apply to both case descriptions.

5. The discussion section needs to be clearer with authors suggesting a hypothesis, and then discussing relevant literature with references to back up the discussion points. The discussion section is a bit repetitive and lacks ‘a highlight’. The authors describe that there was no evidence of infarction on MRI, no evidence of atherosclerosis but conclude that the BAEPs were suggestive of brainstem ischemia (without any references to studies reporting the utility of BAEPs in diagnosing brainstem ischemia and this is not often done in clinical practice). The highlight appears to be the ‘neuroimaging appearance’ and ‘spiral twisting’ of the VA around one another. There is no discussion of ‘anatomical variants’ of the vertebrobasilar arteries and no speculation if the spiral twisting could have been a congenital variant since it is difficult to imagine how an acquired spiral twist could occur within a closed vascular system.

Minor Essential Revisions

The paragraph on Introduction has some repetitive statements e.g. patients with torturous vertebrobasilar arteries and cardiovascular risk factors may also exhibit hemodynamic abnormalities in the posterior circulation leading to vascular vertigo. It is preferable to review this and make it concise without being repetitive.

Grammatical errors: The manuscript will need a review to correct minor grammatical errors and I have made given some illustrations below (not exhaustive).

Abstract, Case Presentation –

Contrast-enhanced magnetic resonance angiographies in the neck – should be ‘Contrast enhanced magnetic resonance angiography of the neck’.
No obvious signs of atherosclerotic stenosis were found – should be ‘No obvious signs of atherosclerotic stenosis was found’.

Transcranial Doppler ultrasounds showed – should be ‘Transcranial Doppler ultrasound’

Introduction –
an increased number of tortuous vessels are being – should be ‘an increasing number of tortuous vessels are being’

Discretionary Revisions
Introduction, paragraph 1
The authors use the term ‘brain ischemic attack’ which is unconventional and it would be preferable to either use vertebrobasilar insufficiency or transient ischemic attack. Likewise, antiplatelet aggregation treatment could be simplified as ‘antiplatelet therapy’.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**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