Reviewer's report

Title: Traumatic vertebral artery dissection presenting with incomplete congruous homonymous quadrantanopia

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Reviewer: Ralf W Baumgartner

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Major comments
1. Vertebral artery dissection (VAD) is diagnosed by detection of the wall hematoma with magnetic resonance imaging (MRI) of the neck or by the delineation of typical angiographic findings such as rat tail occlusion. The present authors have not shown any of these findings in their patient, and the described narrowing of the pre-vertebral segment of the right VA is non-specific. Furthermore, it might be an artifact, because it is often difficult for CT angiography to depict this VA-segment appropriately.

The authors state that the patient suffered in addition to the thalamic also basal ganglia infarcts. The basal ganglia are irrigated by the internal carotid artery, and these infarcts are not explained by the presumed VAD.

In conclusion, the presented data indicate that this patient had a stroke of unknown etiology according to the TOAST criteria.

2. As the authors state, VAD is an important cause of ischemic stroke of young adults below 50 years of age. A medline search would have shown that case series with up to 169 patients with VAD have been published (Arnold M et al, Stroke 2006), which described also the findings reported by the present authors.

Minor comments
3. In the introduction the authors state that VAD may occur after neck trauma and accounts for 25-30% of the strokes in young adults. However, most VAD are spontaneous, and cervical artery dissection, which results mainly from internal carotid artery (ICA) dissection and not VAD, may be the cause of about a quarter of ischemic strokes in this population.

4. The right thalamic infarct shown in the FLAIR-MRI is located in the paramedian and not in the posterior part of this diencephalic nucleus. This may cause hypersomnia and fronto-temporal neuropsychological dysfunctions, which may be very annoying in the daily life of these patients.

5. In the introduction the authors state that a Horner syndrome is a typical finding in VAD. This is not correct, because it is a frequent finding of ICAD, whereas a
central Horner syndrome occurs in the presence of a brainstem infarct.