Reviewer's report

Title: Internal jugular vein wall miopragia in multiple sclerosis patients with chronic cerebrospinal venous insufficiency: a prospective diagnostic controlled study in duplex ultrasound investigation

Version: 1 Date: 9 August 2013

Reviewer: Paolo Zamboni

Reviewer's report:

REVISION

Internal jugular vein wall miopragia in multiple sclerosis patients with chronic cerebrospinal venous insufficiency: a prospective diagnostic controlled study in duplex ultrasound investigation

General Comment

The manuscript of Farina et al. is a very interesting contribution to the understanding of the complexity of the cerebral venous drainage through the IJVs in course of CCSVI. The article presents a remarkable serie, both of HC and CCSVI subjects, and provides a number of very interesting data, underestimated by the same authors. To the contrary, they instead pursue their speculative explanation from them, giving priority to meiopragia, a finding not measured, yet.

The major problems of this manuscript are as follows: i. to use a hypothesis to explain the observed phenomena as the true conclusion of the study ii. not to objectively describe what observed iii. not to provide alternative explanations of their results, in addition to the hypothesis of the congenital pre-disposition of the vein wall.

Major compulsory revisions

The authors did not measure, as Coen et al did, the collagen content or other molecular aspects that can authorise to talk about miopragia of the vein wall. The authors instead measured a different mechanical behaviour of the jugular veins of patients with MS to test head-turning. This is an original data, never so far observed in CCSVI, which must be clarified from the beginning by changing the title, the abstract, and the setting of the manuscript. The authors throughout the manuscript should delete any reference to the pre-disposition of the vein wall.

Only later, in the discussion section, Farina et al. will have to review all the possible explanations of the measured phenomena, including the data derived by the study Coen. But, why exclude the possibility of abnormalities in the relations between the neck rotator cuff muscles, or mastication muscles, and the jugular veins? Or, is it not possible that the vein present a transmural pressure reduced due to reduced circulating blood volume, which makes it easily compressible? Could also be the combination of all three of these factors? There are authors who believe there is a dysregulation of the autonomic nervous system control in
course of MS. Even if the authors do not agree to this hypothesis, it should be mentioned and discussed.

Minor essential revisions.
1. Title: it has to represent exactly the findings of this study. See above.
2. Abstract: it has to represent exactly the findings of this study. See above
3. Introduction. It would be deeply modified. The hypothesis of studying by US the mechanical modifications of the jugular CSA in response to the neck muscle function in MS patients have to be clearly stated. Datasets of CSA measured along the IJVs in HC are published in J Appl Phys 2012, and also in BMC Neurology 2013. This needs to be cited and briefly described in this section, and later compared and discussed in the discussion section.
4. Results. Prevalence data of MS patients presenting >2 positive criteria should be given here and in the abstract, as well as compared and discussed in the discussion section.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests