Author's response to reviews

Title: Treatment of Retinal Artery Occlusion in Sickle Cell Disease: Hyperbaric Oxygen Therapy in combination with systemic treatment: A case report

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Version: 3 Date: 14 July 2014

Author's response to reviews: see over
Dear Editor,

Thank you for your interest on our paper. We have made the necessary changes on the paper according to the suggestions and comments. Following you will find the replies to the comments of the reviewers. The page numbers are given as they appear in the corrected manuscript file. We detailed the case presentation. Additionally we added one reference. We believe that the paper improved much with the required changes. We hope that with the changes the paper is suitable for publication in Journal of Medical Case Reports.

Sincerely yours,

Handan Canan, MD
Author's response to reviews:

Re: The Use of Hyperbaric Oxygen Therapy in the Treatment of Retinal Artery Occlusion in Sickle Cell Disease: A case report

Treatment of Retinal Artery Occlusion in Sickle Cell Disease: Hyperbaric Oxygen Therapy in addition to systemic treatment: A case report

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Reviewer # 1 (Dr Mimouni)
Version:2 Date:22 June 2014

COMMENTS:

1. It is impossible to determine what the natural history of this patient would have been. The patient was treated with both exchange transfusion and hyperbaric oxygen therapy (HBO). Exactly how much of the improvement in visual acuity can be attributed to the HBO itself is unclear.

• We agree with the reviewer. From the history it is really not possible to decide which treatment had the effect. Since following the exchange transfusion, we did not observe any change in BCVA, we believe that HBO had the main effect. However, we believe that the two treatments in combination resulted in the improvement in BCVA. Thus, we made some changes on the title, case report and discussion. We have addressed this comment on page 3 in "introduction" and on page 5 in "discussion" of this report. Also one reference were added for supporting this condition. (reference number: 13).
2. In addition, from the author's description it is quite difficult to ascertain whether the improvement to 20/200 occurred before or after the initial HBO session. The exact sequence of treatment in the second paragraph of the “case presentation” is insufficiently described. When exactly (on what day) was the systemic therapy applied? What was the visual acuity before and after the systemic therapy? It seems that the author’s meant to say that on the first day of hospitalization exchange transfusion was performed and the visual acuity thereafter improved to 20/200, after which following 20 sessions of HBO the visual acuity improved to 20/60.

- The exact sequence of treatment is given according to the reviewer’s suggestion. We thank the reviewer for this comment. The changes are in case presentation on page 4, 1st paragraph.

3. The statement that sickle cell disease is usually characterized by proliferative retinopathy present in 20% of patients must be rephrased for two reasons: A) Non-proliferative retinopathy is the most common ophthalmic manifestation. B) Proliferative retinopathy, based on the reference provided by the authors occurs in 14% of the sickle cell patients.

- We revised our introduction according to your suggestions on page 3, 1st paragraph.

4. When describing the fundus findings several additional details are worth mentioning. First, on closer examination of the fundus color image, a hemorrhage can be seen inferotemporal of the macula. Second, when examining the fundus fluorescein angiography, it is clear that the lack of arterial filling and peripheral capillary non perfusion is more evident in the superior half than in the inferior half.

- We have modified figure legends. Figure 1. (a) CFP, at the initial examination showed central retinal artery occlusion with pale, thickened retinal infarction, a dot hemorrhage inferotemporal to the fovea and cherry red spot. (b) The early phase of fluorescein angiography, the delay in arteriovenous transit time at 21 seconds and ischemia in the macula was discernible.
5. **Stylistic issues:** There are too many syntax and grammatical errors to quote all of them and the authors would benefit from having a professional copy editing performed.

- A professional copy editing is performed.

**Reviewer # 2 (Dr Kida)**

*Version:2 Date:25 June 2014*

1. *It would be much better if authors emphasize the importance of very early treatment of both emergent exchange transfusion and hyperbaric oxygen therapy in this CRAO patient with sickle cell anemia and it leads to the dramatical improvement of visual acuity. Minor point: Please add the time of FA picture in Legend of Figure 1(b). Also, please write the filling time in Case presentation (Actually, how much time delayed in this CRAO patient?). It's important to assess the severity of CRAO.*

- The delay in arteriovenous transit time was 21 seconds. We added this information to the case presentation and Figure legends.

"Figure 1 : (b) The early phase of fluorescein angiography, the delay in arteriovenous transit time at **21 seconds** and ischemia in the macula was discernible."

**Reviewer # 3 (Dr. Murphy-Lavoie)**

*Version:2 Date:28 June 2014*

1. *Please specific the duration of symptoms prior to the first hyperbaric oxygen treatment and the treatment protocol used (for example was it 2.4ATA for 90 minutes twice daily for 10 days?)*

- We added hyperbaric oxygen therapy protocol on page 4. "The treatment protocol was 2.5 ATA for 120 minutes twice daily for the first 7 days, and then once a day for the following 6 days, to a total of 20 sessions."