Reviewer's report

Title: Juvenile elastic arteries after 28 years of renal replacement therapy in a patient with complete Complement C4 deficiency

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Reviewer: Juha Sinisalo

Reviewer's report:

Florian Knoll et al. presents an interesting case report of 51 years old patient with two kidney transplantation, an unusual tissue type and total deficiency of C4. Patient has unexpected course of atherosclerosis. This unusual presentation of a disease is worth publishing. However, minor essential revision is needed.

1) It seems that authors have published information about this patient previously (Ref 9), but not about athero-sclerosis, so this is a new approach. Authors have examined in that previous paper 6 more similar patients (who have complete C4 deficiency). Even thou they are younger than now presented case, some of them have had kidney transplantation. Why not examine and report them all? It would make much stronger argument. I understand that this may be impossible, but should be considered.

2) Examination of C4 deficiency from presented patient should be written in this paper more precisely. I understand that it is well done, but you should state that the C4 genes were tested, and the C4 was detected from serum (how many times and which intervals). Patient might produce some C4 and consume it --> there might be some detectable C4 in certain states of disease?

3) In contradiction to what authors present: it has been shown in some papers that C4 deficiency is connected to coronary artery disease (Int Immunol 2008;20;31-37, BMJ 1994:309:313-314, Molecular Immunology 1998;35:412, J Med Gen 202 39:46-51 Etc). Authors do not present anything about coronaries. Have they been evaluated? It could be so that coronaries act on complement differently than the “central arteries”? I would like to see a comment on that.

4) Central arteries have been evaluated with CIMT and PWV. Thorax-x-ray must have been taken several times from the patient. Is there any sign of aortic calcification? If not, that would be an additional proof of lack of central atherosclerosis.

5) When presenting a case of atherosclerosis, all cardiovascular risk factors should be shown: smoking? Cholesterol values are shown, but have they been stable? Patient has not used statin in any state?

6) Authors present just one case: conclusions should be cautious. Discussion, last paragraph, second sentence: Whereas atherosclerosis seems... I would use might.
**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**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