LETTER TO THE EDITOR

Re: "Histological and Immunofluorescent Analysis of the Large Tributary of the Great Saphenous Vein Treated With a 1920 nm Endovenous Laser: Preliminary Findings"

Dear Editor,

The last issue of EJVES Short Reports (2018; 39: 7—11) included the report "Histological and immunofluorescent analysis of the large tributary of the great saphenous vein treated with a 1,920 nm endovenous laser: preliminary findings" by Ashpitel et al.[1] We have read it with great interest. Similar to the authors, we are involved in research focused on endovascular treatment of vein diseases. Therefore, we would like to raise several issues, which for us are the most interesting or unclear.

The first issue concerns the role of vein size in the treatment protocol. According to the manufacturer's recommendations, in the majority of EVL devices the linear endovenous energy density (LEED) should be adjusted to the vein diameter.[2] Here, in the article, the authors did not mention that parameter at all. Do the authors think that with a 1,920 nm device the vein diameter does not have any importance for the final outcome?

We agree with the authors' opinion from the Discussion that their *ex vivo* model, without tumescence, is a strong limitation of this study. It is noteworthy that proper tumescence is crucial for effective ablation, since it should result in symmetrical reduction of vein diameter (i.e., narrowing of the vein), associated with thickening of its wall. In such circumstances heat distribution across the vein wall is uniform and, therefore, even low energy may be sufficient for a homogeneous thermal injury, followed by vein fibrosis with complete occlusion. However, as shown in Fig. 1, there was only superficial damage of the tunica intima at 40 J/cm, whereas involvement of both intima and media required at least 60 J/cm. Moreover, the damage was rather local, and present only on one side of the flattened vein cross section. Hence, to support their conclusions, the authors should show data from both 1,470 and 1,920 nm devices in the same image. Otherwise, a generalised statement regarding the similar effectiveness of 1,920 and 1,470 nm EVL seems to be speculative.

The next issue is the conclusion regarding the assessment of apoptosis in vein samples. Firstly, it is difficult to detect apoptosis within a few seconds of its induction, since it usually occurs within at least several minutes or even hours.[3] On the other hand, cells of the vein wall may display some baseline level of apoptosis.[4] Most interestingly, as seen in Fig. 2, the most abundant Cy3 labelled red dots in the vein wall (which should correspond to phospho-p53 positive apoptotic cells) could be found in vein samples exposed to 20 and 40 J/cm of 1,920 nm EVL. It would be interesting to know the authors' explanation for this phenomenon. In the 60 J/cm sample (Fig. 2), we can observe evident signs of cell damage. However, it is heat induced coagulation and tissue necrosis rather than apoptosis.

Finally, we would kindly ask the authors their opinion regarding the possible advantage of using a 1,920 nm device for endovenous ablation. What is the actual superiority of 1,920 nm over 1,470 nm in vein treatment? Would they recommend changing our 1,470 nm device to a new, 1,920 nm one?

CONFLICT OF INTEREST

None.

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