RECANALIZATION AFTER ENDOSAPHENOUS LASER

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BACKGROUND

The literature clearly indicates that the mechanism of endosaphenous laser (ESL) for the treatment of the greater saphenous vein (GSV) insufficiency in based on the inner thermal damage of the venous wall, the thrombus formation and fibrotic involution, which is not dependent of the wavelength employed. The debate concerning the indications, the technology, the method to be used and the results is still open. The immediate occlusion, from 1 to 7 days, of all the GSV subjected to the procedure is described by the majority of the Authors. One open discussion is focused on the causes of the thrombus recanalization (TR) after procedure. Various percentages are presented in the literature, ranging from 0 to 34% after 1-2 years. The causes of TR described are the learning curve, the large diameter of the veins and a low energy employed. Our previous histologic and duplex controls confirmed only the trend of TR in the larger veins. They also indicated that the post-laser (PLT) thrombus is very similar to the spontaneous (ST) one.

AIMS

To compare the histologic involution of PLT with the one of ST and clarify the significance of TR.

METHODS

Eight fragments of GSV, subjected to ESL by an 808 diode laser, a mean energy of 40 J/cm by continuous emission, containing a PLT and and of 17 GSV containing ST were taken in patients subjected to a second procedure and in patients with ascending or stabilized thrombo-phlebitis of the GSV respectively. Cross sections were colored by He, VG, Wg and studied by light microscopy. Vein diameters were measured, the elementary components and the trend to neovascularization of the PLT and ST were studied.

RESULTS

The vein diameters of ST were significantly larger than the ones of PLT ($P<.001$), no difference in the elementary components were noted, except for the presence of necrotic inclusions coming from the thermal damage of the blood and inner venous wall in the PLT. A similar trend to neovascularization in the various stages of thrombus involution was observed in the two groups.

CONCLUSIONS

The only structural difference observed in the PLT in comparison with ST is the presence of necrotic inclusions. The difference noted in the venous diameters is due to the enlargement of varicose veins affected with phlebitis, while the ones subjected to ESL are reduced by the thermal shrinking. TR is due the physiologic neovascularization of thrombi. TR after ESL must be interpreted as a physiologic and foreseeable trend and expected within an approximate time of 2 years with the variable percentages described in the literature.