Endovenous laser ablation of varicose veins with the 1470 nm diode laser using a radial fiber – 1-year follow-up

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Abstract

Background:

Endovenous laser ablation is one of the most accepted treatment options for insufficient great and small saphenous veins. The aim of this study was to investigate the long-term efficacy and safety of the radial fiber (ELVeS-radial kit™) for the 1470 nm diode laser in a 1-year follow-up.

Methods:

A total of 308 lower limbs with primary insufficiency of great and small saphenous veins or insufficient tributaries were included in the prospective observational cohort study. The primary efficacy endpoint of the study was ultrasonographic proven elimination of venous reflux after at least 1 year. Secondary efficacy and further safety end points after 1 year were as follows: (1) sonographic exclusion of recanalization of the treated vein segments, (2) deep vein thrombosis, clinical pulmonary embolism or superficial vein thrombosis as defined by objective testing, (3) death from any cause, (4) persistent clinical complaints such as pain and paresthesia, (5) recurrent varicose veins. Patient satisfaction was assessed using a CIVIQ-2 questionnaire after 1 year.

Results:

Follow-up could be completed in 91.2% of the patients. Excellent efficacy numbers with 99.6% occlusion of the treated varicose veins as elimination of reflux could be demonstrated. After 1 year, 96% of the treated veins disappeared completely sonographically; one recanalization was observed. No deep vein thrombosis or pulmonary embolism occurred, three superficial vein thrombosis were diagnosed in follow-up examinations. No persistent pain or paresthesia occurred in the follow-up. Recurrent varicose veins were diagnosed in 10 patients (2.81%).

Conclusion:

One-year follow-up showed that endovenous laser treatment of varicose veins with 1470 nm diode laser using the radial fiber is highly effective, also regarding in a 1-year follow-up.