Six-year follow-up of endovenous laser ablation for great saphenous vein incompetence

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Objective

Treatment of chronic venous insufficiency of the great saphenous veins by endovenous laser ablation yields good short- and medium-term results, as assessed clinically and technically by echo-color-Doppler. At present, scarce data are available on the long-term results of endovenous laser ablation. We wanted to assess the long-term efficacy of endovenous laser ablation.

Methods

We performed a prospective 6-year follow-up cohort study, with recruitment between 2003 and 2004, and the follow-up completed in 2010. The setting was an ambulatory care/day surgery. Of 209 consecutive patients who underwent endovenous laser ablation at our institution during the recruitment period, five (2.4%) did not complete the procedure due to technical reasons. Of 204 patients who successfully completed the intervention, 14 (6.8%) were lost for follow-up, and 190 completed the planned 6-year follow-up. The intervention was an endovenous laser ablation using a 980-nm laser diode. Clinical and echo-color-Doppler evaluations were regularly scheduled for all patients during the planned follow-up period. The incidence of clinical and echo-color-Doppler confirmed endovenous laser ablation failures over a 6-year follow-up period. Potential associations between failures and patients' characteristics, echo-color-Doppler findings, or surgical features were also investigated.

Results

Symptomatic clinical endovenous laser ablation failures occurred in 22 (11.6%; 95% confidence interval [CI], 7.4-17.0%) patients; while 57 (30.0%; 95% CI, 23.6-37.1%) had echo-color-Doppler-confirmed failures. Only two patients (1.1%; 95% CI, 0.1%-3.8%) had both symptomatic clinical and echo-color-Doppler-confirmed failures. Three features of the great saphenous vein: an "atypical" junction, a junction diameter \( \geq 8 \) mm, and a mean trunk diameter \( \geq 8 \) mm, were independently associated with echo-color-Doppler-confirmed failures on multivariate logistic regression analysis.

Conclusions

Six years after endovenous laser ablation, most patients were improved on clinical grounds, and more than two-thirds had no saphenous insufficiency at echo-color-Doppler. Only a minority had both clinical and echo-color-Doppler-confirmed failures. Anatomical features of the junction and the saphenous diameter both at the junction and at the trunk independently predicted echo-color-Doppler-confirmed failures.