

Treatment of recurrent varicose veins of the great saphenous vein by conventional surgery and endovenous laser ablation

Laura van Groenendael, MD,^a J. Adam van der Vliet, MD, PhD,^c Lizel Flinkenflögel, MD,^a Elisabeth A. Roovers, PhD,^b Steven M.M. van Sterkenburg, MD,^a and Michel M.P.J. Reijnen, MD, PhD,^a *Arnhem and Nijmegen, The Netherlands*

Objective: Varicose vein recurrence of the great saphenous vein (GSV) is a common, costly, and complex problem. The aim of the study was to assess feasibility of endovenous laser ablation (EVLA) in recurrent varicose veins of the GSV and to compare this technique with conventional surgical reintervention.

Methods: Case files of all patients treated for GSV varicosities were evaluated and recurrences selected. Demographics, duplex scan findings, CEAP classification, perioperative data, and follow-up examinations were all registered. A questionnaire focusing on patient satisfaction was administered.

Results: Sixty-seven limbs were treated with EVLA and 149 were surgically treated. General and regional anesthesia were used more in the surgery group ($P < .001$). Most complications were minor and self-limiting. Wound infections (8% vs 0%; $P < .05$) and paresthesia (27% vs 13%; $P < .05$) were more abundant in the surgery group, whereas the EVLA-treated patients reported more delayed tightness (17% vs 31%; $P < .05$). Surgically-treated patients suffered less postoperative pain ($P < .05$) but reported a higher use of analgesics ($P < .05$). Hospital stay in the surgery group was longer ($P < .05$) and they reported a longer delay before resuming work (7 vs 2 days; $P < .0001$). Patient satisfaction was equally high in both groups. At 25 weeks of follow-up, re-recurrences occurred in 29% of the surgically-treated patients and in 19% of the EVLA-treated patients ($P = .511$).

Conclusion: EVLA is feasible in patients with recurrent varicose veins of the GSV. Complication rates are lower and socioeconomic outcome is better compared to surgical reintervention. (*J Vasc Surg* 2009;50:1106-13.)

Varicose veins are a widespread affliction, causing symptoms varying from minor leg discomfort to chronic disabling venous ulceration. About half of the adult population has minor stigmata of venous insufficiency, whereas 15% of men and 35% of women have visible varicose veins.¹ The majority (70%) of varicose veins are the result of an incompetent saphenofemoral junction (SFJ) and/or great saphenous vein (GSV).² Approximately one-third of these patients eventually undergo surgical intervention.³

Recurrence of varicose veins after conventional surgical treatment is a common, costly, and complex problem, which accounts for over 20% of patients requiring venous surgery.⁴⁻⁶ Recurrences may be due to residual varicose veins, true recurrences, or progression of disease.⁷ Data on recurrence rates are hard to compare because of differences in the initial treatment, the method of measuring recurrence, and duration of follow-up. The rate of recurrences seems to increase with time.⁸ Clinical recurrence rates of 26% to 62% have been described after a follow-up period of 3 to 11 years.^{9,10} Recurrences on duplex ultrasound scan-

ning, however, may be even higher. Fischer et al⁴ described a clinical recurrence rate of 47%, but a 60% recurrence rate was seen in duplex scanning after a follow-up of 34 years.

Conventional treatment of recurrent varicosities of the GSV usually consists of a surgical redisconnection of the SFJ, frequently combined with multiple phlebectomies. Surgical reintervention is associated with a higher recurrence rate than primary treatment of varicose veins.¹¹ Various randomized controlled trials assessing new surgical techniques have been performed with varying success. A complete resection of the GSV stump and inversion suturing of the common femoral vein did not seem to decrease neovascularization.¹² Results on the use of barrier materials are conflicting and these techniques have also not yet been introduced into common clinical practice.^{13,14}

The role of endovenous techniques in the treatment of recurrences has not been studied to date. Results of endovenous laser ablation (EVLA) for the treatment of primary GSV varicosities are at least comparable with conventional surgical treatment, with early success rates of 88% to 100%.¹⁵⁻¹⁸ Endovenous techniques seem to offer advantages over conventional treatment in terms of reduced postoperative pain, shorter sick leaves, faster return to normal activities, and better cosmetic results. It seems to be cost-saving for society, especially among employed patients.^{19,20} The aim of the present study was to assess the role of EVLA in the treatment of recurrent varicosities of the GSV and to compare this technique with surgical re-exploration.

From the Department of Surgery, Division of Vascular Surgery,^a and Clinical Research Department,^b Alys Zorggroep, Location Rijnstate; and the Department of Surgery, Division of Vascular Surgery, University Medical Centre Nijmegen.^c

Competition of interest: none.

Reprint requests: Michel M.P.J. Reijnen, MD, Department of Surgery, Alys Zorggroep, Location Rijnstate, Wagnerlaan 55, 6815 AD Arnhem, The Netherlands (e-mail: mmpj.reijnen@gmail.com).

0741-5214/\$36.00

Copyright © 2009 by the Society for Vascular Surgery.

doi:10.1016/j.jvs.2009.06.057