Should we really treat varicose tributaries?

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Disclosures

• None
Primary Superficial Vein Reflux with Competent Saphenous Trunk

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Table 2. Prevalence of saphenous and non-saphenous tributary reflux.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSV</td>
<td>111*</td>
<td>65</td>
</tr>
<tr>
<td>LSV</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>GSV + LSV</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Non-saphenous veins</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>171</td>
<td>100</td>
</tr>
</tbody>
</table>

GSV: greater saphenous vein; LSV: lesser saphenous vein.
* p<0.0001 for all comparisons.

Table 3. Number of tributaries per limb and duration of disease in each CVD class.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of limbs</th>
<th>%</th>
<th>Number of tributaries</th>
<th>%</th>
<th>Tributaries per limb</th>
<th>Duration of disease (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Range</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>8.3</td>
<td>12</td>
<td>7</td>
<td>1.7</td>
<td>0.4–2.5</td>
</tr>
<tr>
<td>2</td>
<td>60</td>
<td>71.4</td>
<td>110</td>
<td>64</td>
<td>1.8</td>
<td>0.5–17</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>14.3</td>
<td>34</td>
<td>18</td>
<td>2.6</td>
<td>3–14</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>18</td>
<td>11</td>
<td>3.6</td>
<td>3–21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>84</td>
<td>100</td>
<td>171</td>
<td>100</td>
<td>2.0</td>
<td>0.4–21</td>
</tr>
</tbody>
</table>

Number of incompetent tributaries per limb; CVD classes 1 or 2 vs. 3 or 4 p<0.01.
Duration of CVD; CVD class 1 vs. 2, highest p=0.02, CVD class 1 vs. 4 least p<0.0001.
**Results:** The data suggest that reflux progression may develop from segmental to multisegmental superficial reflux. In younger age, reflux in tributaries and non-saphenous veins is more frequent. In older age, more saphenous reflux develops and more proximal sites seem to be affected. A high proportion of uncomplicated varicose vein (C2) develops skin changes and chronic venous insufficiency (C3–C6). Significant risk factors for the progression of varicose vein towards venous leg ulcers are skin changes, corona phlebectatica, higher body mass index and popliteal vein reflux. During a 13.4-year follow-up period, 57.8% (4.3%/year) of all chronic venous disease patients showed progression of the disease.
Who Cares?

40% varicose veins

2% venous ulceration

Venous ulceration costs 1 – 2% of the annual healthcare budget in the Western World

£1.16 – 2.32 billion in the UK

$30 – 60 billion in the US
Future Burden of Varicose Veins

Predicted Varicose Vein Procedures

- US
- Europe (projection)

Population (n)

- 900,000 (2013)
- 1,476,000 (2021)

- 450,000 (2013)
- 737,500 (2021)

Years

2013 2021

Review Article
Phlebology
2016, Vol. 31(5), 76-79
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pub@sagepub.com

Predicted burden of venous disease
Sarah Onida and Alun Huw Davies
Truncal Vein Treatment

Randomized clinical trial

Randomized clinical trial comparing endovenous laser ablation, radiofrequency ablation and surgical stripping for truncal veins. L. H. Rasmussen, M. S. Sheehan, B. R. Brar, R. St George. Danish Vein Centres, Naestved, Denmark. Correspondence to: Dr L. H. Rasmussen.

Original article

Five-year results from the prospective European multicentre cohort study on radiofrequency segmental thermal ablation for incompetent great saphenous veins

T. M. Proebstle¹, B. J. Alm², O. Göckeritz³, C. Wenzel³, T. Noppeney⁴, C. Lebard⁵, C. Sessa⁶, D. Creton⁷ and O. Pichot⁶

¹Department of Dermatology, University of Mainz, Mainz, ²Dermatologikum Hamburg, Hamburg, ³Venenzentrum Leipzig, Leipzig, and ⁴Gemeinschaftspraxis Nürnberg, Nuremberg, Germany, ⁵Hospital St Michel, Paris, ⁶Centre Hospitalier Universitaire Service de Chirurgie Vasculaire, Grenoble, and ⁷Clinique Ambroise Paré, Nancy, France. Correspondence to: Professor T. M. Proebstle, Department of Dermatology, University of Mainz, Langenbeckstrasse 1, 55131 Mainz, Germany (e-mail: thomas.proebstle@web.de)

Randomized clinical trial

Randomized clinical trial of VNUS Closure for varicose vein closure versus laser ablation and surgery for varicose veins: results from the Comparison of LAser, Surgery and foam Sclerotherapy (CLASS) randomised controlled trial. A. C. Shepherd, M. S. Gohel, L. C. Brown, M. J. Metcalfe. Imperial Vascular Unit, Department of Surgery, Division of Surgery and Cancer, London, UK. Correspondence to: Professor A. H. Davies, 4 East Department of Vascular Surgery, Royal Free Hospital, 259-279 Mission Road, London NW3 2QG, UK (e-mail: a.h.davies@imperial.ac.uk)

Varicosities?

KEEP CALM AND DEMAND EVIDENCE
Concomitant

• One stop treatment

• Greater anaesthetic requirements

• Longer procedure

• ? Over-treating patients

• ? VTE

Delayed

• Shorter initial procedure

• Can monitor for varicosity regression

• Need for secondary procedures
66.6% in EVLT alone vs 4% EVLTAP required further intervention
Clinical outcomes and quality of life 5 years after a randomized trial of concomitant or sequential phlebectomy following endovenous laser ablation for varicose veins


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Correspondence to: Mr J. El-Sheikha, Academic Vascular Unit, 1st Floor Tower Block, Hull Royal Infirmary, Hull HU3 2JZ, UK (e-mail: Jelsheikha@doctors.org.uk)

Table 2 Secondary procedures

<table>
<thead>
<tr>
<th>Secondary procedure</th>
<th>EVLTAP</th>
<th>EVLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 1 year</td>
<td>1 ambulatory phlebectomy + perforator ligation</td>
<td>13 ambulatory phlebectomy</td>
</tr>
<tr>
<td></td>
<td>3 ambulatory phlebectomy + perforator ligation</td>
<td></td>
</tr>
<tr>
<td>1–2 years</td>
<td>1 foam sclerotherapy</td>
<td>1 EVLA</td>
</tr>
<tr>
<td></td>
<td>2 groin surgery</td>
<td>1 groin surgery</td>
</tr>
<tr>
<td></td>
<td>1 ambulatory phlebectomy</td>
<td>1 ambulatory phlebectomy</td>
</tr>
<tr>
<td>2–5 years</td>
<td>1 redo groin surgery + 1 ultrasound-guided foam sclerotherapy</td>
<td>4 redo ambulatory phlebectomy</td>
</tr>
<tr>
<td>Repeat secondary procedure</td>
<td>1 redo groin surgery + 1 ultrasound-guided foam sclerotherapy</td>
<td>EVLTAP, endovenous laser therapy with ambulatory phlebectomy; EVLA, endovenous laser ablation.</td>
</tr>
</tbody>
</table>
A systematic review and meta-analysis on the role of varicosity treatment

![Forest plot of need for further procedures](image)

**Figure 3.** Forest plot of need for further procedures. Fixed Effects Inverse Variance model. Odds ratio = 0.734 (0.369–1.384), \( p = 0.339 \), (odds ratio > 1 favours delayed treatment). Heterogeneity: \( I^2 = 81.45 \), \( p = 0.005 \).

![Forest plot of DVT incidence studies including all studies](image)

**Figure 7.** Forest plot of DVT incidence studies including all studies. Fixed Methods Inverse Variance Model. Odds ratio = 1.508 (0.956–2.380), \( p = 0.077 \) (odds ratio > 1 favours delayed treatment). Heterogeneity: \( I^2 = 50\% \), \( p = 0.076 \).
The target was not achieved because of patient preference for single sitting treatment despite equipoise from the researchers and careful consenting for both the trial and the procedure—more than 50% of the suitable population refused randomization because of a preference for simultaneous treatment.
Interventional treatment

1.3.2 For people with confirmed varicose veins and truncal reflux:

- Offer endothermal ablation (see Radiofrequency ablation of varicose veins [NICE interventional procedure guidance 8] and Endovenous laser treatment of the long saphenous vein [NICE interventional procedure guidance 52]).

- If endothermal ablation is unsuitable, offer ultrasound-guided foam sclerotherapy (see Ultrasound guided foam sclerotherapy for varicose veins [NICE interventional procedure guidance 440]).

- If ultrasound-guided foam sclerotherapy is unsuitable, offer surgery.

**If incompetent varicose tributaries are to be treated, consider treating them at the same time.**
Guidance

Recommendation 51
When performing endovenous thermal ablation of a refluxing saphenous trunk, adding concomitant phlebectomies should be considered.

Recommendation 52
To treat tributary varicose veins, ambulatory phlebectomy should be considered.

Class | Level
--- | ---
Ila | B
Ila | C

Editor’s Choice — Management of Chronic Venous Disease

Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)

Writing Committee
- ESVS Guidelines Committee
- P. Kolb, G.J. de Borst, N. Chakfé, S. Debus, R. Hinchliffe, I. Koncar, J. Lindholt, M.V. de Ceniga, F. Vermassen, F. Verzini,
- Document Reviewers
- M.G. De Maeseneer, L. Blomgren, O. Hartung, E. Kalodiki, E. Korten, M. Lugli, R. Naylor, P. Nicolini, A. Rosales
Guidance

The care of patients with varicose veins and associated chronic venous diseases: Clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum

Peter Gloviczki, MD, Anthony J. Comerota, MD, Michael C. Dalsing, MD, Bo G. Eklof, MD, David L. Gillespie, MD, Monika L. Gloviczki, MD, PhD, T. Lynn M. Lohr, MD, Robert B. McLafferty, MD, Mark H. Meisner, MD, M. Hassan Murad, MD, MD, Frank T. Padberg, MD, Peter J. Pappas, MD, Marc A. Passman, MD, Joseph D. Raffetto, MD, Roque J. Vasquez, MD, RVT, and Thomas W. Wakefield, MD, Rochester, Minn; Toronto, Ont, Canada; Indianapolis, Ind; Helsingborg, Sweden; Rochester, NY; Cincinnati, Ohio; Springfield, Ill; Seattle, Wash; Birmingham, Ala; West Roxbury, Mass; North Tonawanda, NY; and Ann Arbor, Mich

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Editor’s Choice — Management of Chronic Venous Disease

We recommend ambulatory phlebectomy for treatment of varicose veins, performed with saphenous vein ablation, either during the same procedure or at a later stage. If general anesthesia is required for phlebectomy, we suggest concomitant saphenous ablation.

Selective tributary treatment?
Selective tributary treatment?

The Effect of Isolated Phlebectomy on Reflux and Diameter of the Great Saphenous Vein: A Prospective Study

P. Pittaluga*, S. Chastanet, T. Locret, R. Barbe

Riviera Veine Institut, 6, rue Gounod, 06000 Nice, France

Table 2  Haemodynamic evolution of the GSV after ASVAL procedure.

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative</th>
<th>Post-operative</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant GSV reflux</td>
<td>50 (100%)</td>
<td>20 (36%)</td>
<td>&lt;0.001 ($\chi^2$)</td>
</tr>
<tr>
<td>Significant SFJ reflux</td>
<td>20 (40%)</td>
<td>0 (0%)</td>
<td>&lt;0.001 ($\chi^2$)</td>
</tr>
<tr>
<td>Mean RD (s)</td>
<td>1.5 S.D. 0.2</td>
<td>0.81 S.D. 0.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean PRV (mm/s)</td>
<td>247 S.D. 40</td>
<td>120 S.D. 27</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 3  Changes in the diameter of the GSV after ASVAL procedure.

<table>
<thead>
<tr>
<th>GSV mean diameter (mm)</th>
<th>Pre-operative</th>
<th>Post-operative</th>
<th>P - t test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal valve (SFJ)</td>
<td>6.7 S.D. 0.6</td>
<td>5.6 S.D. 0.5</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Sub-terminal valve</td>
<td>5.4 S.D. 0.5</td>
<td>4.8 S.D. 0.3</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Middle third of the thigh</td>
<td>5.0 S.D. 0.4</td>
<td>4.2 S.D. 0.2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Knee</td>
<td>5.3 S.D. 0.6</td>
<td>4.0 S.D. 0.3</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Middle third of the calf</td>
<td>4.0 S.D. 0.5</td>
<td>2.7 S.D. 0.2</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Selective tributary treatment?

Conclusions: At 1-year follow-up, treatment of phlebectomies of a large tributary was associated with reflux in 50% of patients and symptoms. Patients with mild DUS alteration in the approach (ie, larger segment, or higher Cockett class) will more often fail.
Should we really treat varicose tributaries?

- Concomitant phlebectomy
  - Short term
    - Improved QoL
    - Improved Clinical Scoring
  - Long term
    - No significant difference

- Selective tributary treatment
  - Improved haemodynamics
  - Further evidence required

- Anaesthetic time
- Length of procedure
- Patient choice
Thank you