



Imperial College
London

Should we really treat varicose tributaries?

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Disclosures

- None

Varicosities



Primary Superficial Vein Reflux with Competent Saphenous Trunk

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Saphenous tributaries



Anterolateral



Medial accessory



Posterior arch



Anterior arch

tributaries

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

	<i>n</i>	%
GSV	111*	65
LSV	33	19
GSV + LSV	12	7
Non-saphenous veins	15	9
Total	171	100

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.

Class	Number of limbs	%	Number of tributaries	%	Tributaries per limb	Duration of disease (years)	
						Range	Mean
1	7	8.3	12	7	1.7	0.4-2.5	1.6
2	60	71.4	110	64	1.8	0.5-17	2.8
3	12	14.3	31	18	2.6	3-14	4.4
4	5	6	18	11	3.6	3-21	7.5
Total	84	100	171	100	2.0	0.4-21	4.1

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 $p < 0.0001$.



Vulvar



Gluteal

Posterolateral

Posterior lower thigh

Popliteal fossa

Progression in venous pathology

F Pannier¹ and E Rabe²

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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

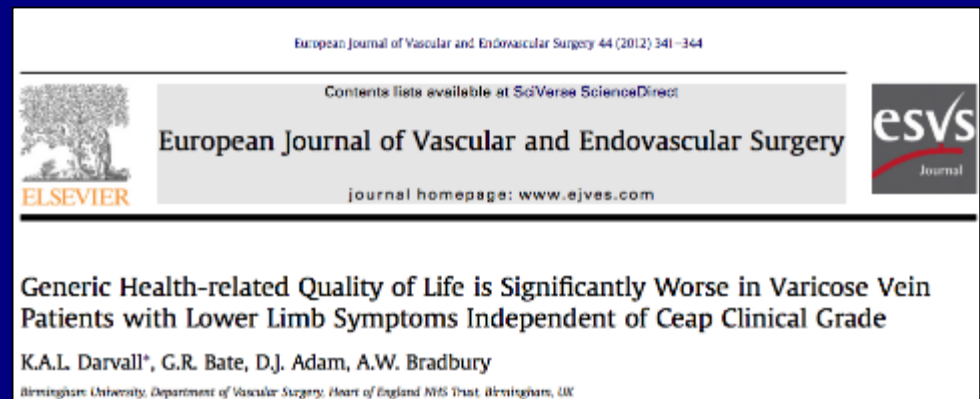
2% venous ulceration



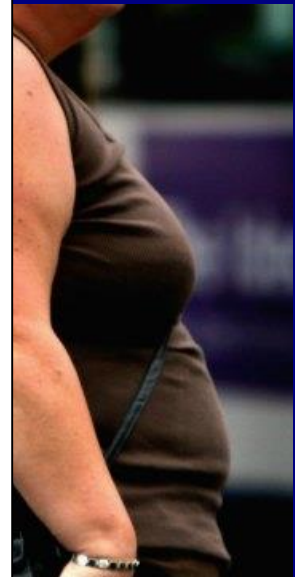
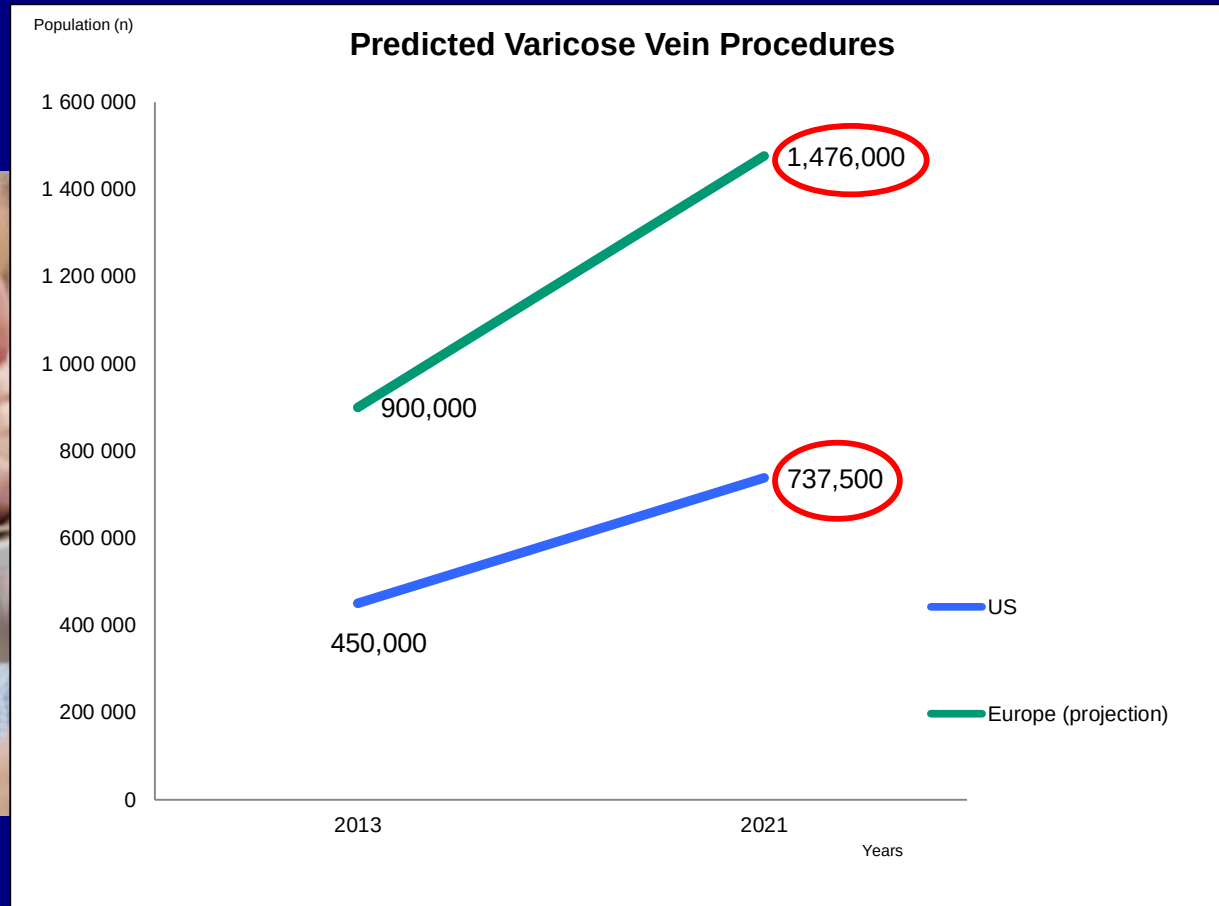
Venous ulceration costs 1 – 2% of the annual healthcare budget in the Western World

£1.16 – 2.32 billion in the UK

\$ 30 – 60 billion in the US



Future Burden of Varicose Veins



Review Article

Predicted burden of venous disease

Sarah Onida and Alun Huw Davies

Phlebology

Phlebology
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Truncal Vein Treatment

Randomized clinical trial

Randomized clinical trial comparing endovenous laser ablation, radiofrequency ablation, and vein stripping for truncal vein disease

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Original article

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

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Vascular

Surg

Brar R.

St Georg

SSMENT

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Randomized clinical trial

Randomized clinical trial of VNUS radiofrequency ablation versus laser ablation for truncal vein disease

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Endovenous laser ablation and surgery for varicose veins: results from the Comparison of LAser, Surgery and foam Sclerotherapy (CLASS) randomised controlled trial

Julie Brittenden, Seonaidh C Cotton, Andrew Elders, Emma Tassie, Graham Scotland, Craig R Ramsay, John Norrie, Jennifer Burr, Jill Francis, Samantha Wileman, Bruce Campbell, Paul Bachoo, Ian Chetter, Michael Gough, Jonothan Earnshaw, Tim Lees, Julian Scott, Sara A Baker, Graeme MacLennan, Maria Prior, Denise Bolsover and Marion K Campbell

Varicosities?



**KEEP
CALM
AND
DEMAND
EVIDENCE**

Phlebectomies: to delay or not to delay?

S Onida, T R A Lane and A H Davies
Academic Section of Vascular Surgery, Imperial College
London

Concomitant

- One stop treatment
- Greater anaesthetic requirements
- Longer procedure
- ? Over-treating patients
- ? VTE

Delayed

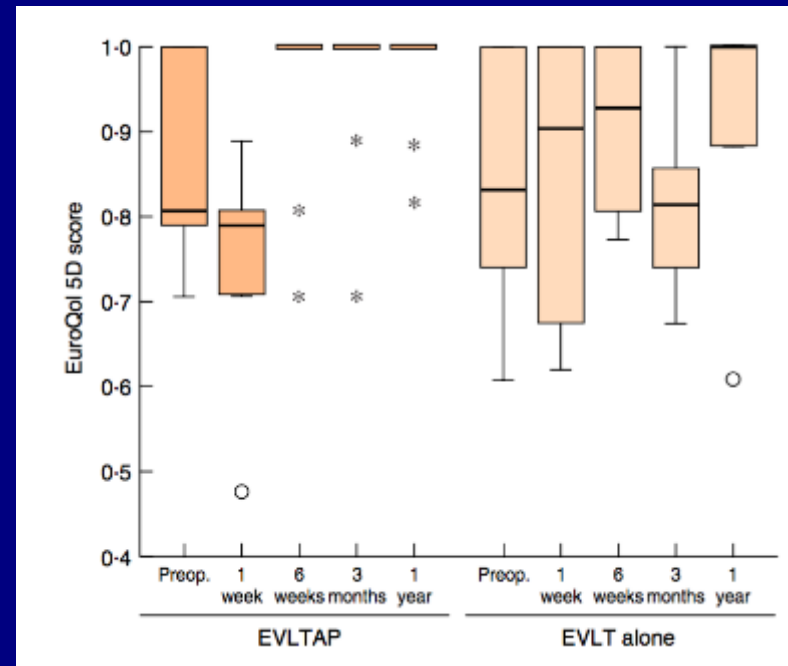
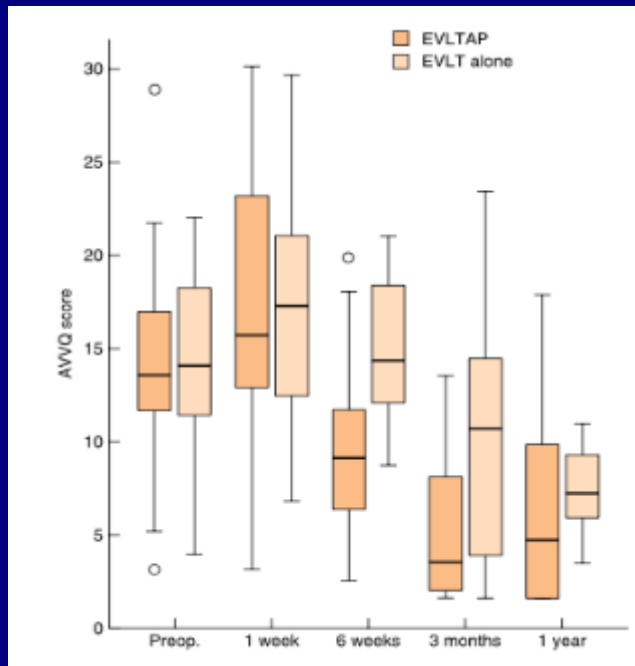
- Shorter initial procedure
- Can monitor for varicosity regression
- Need for secondary procedures

Randomized clinical trial of concomitant or sequential phlebectomy after endovenous laser therapy for varicose veins

D. Carradice, A. I. Mekako, J. Hatfield and I. C. Chetter

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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

J. El-Sheikha, S. Nandhra, D. Carradice, T. Wallace, N. Samuel, G. E. Smith and I. C. Chetter

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Concomitant versus sequential phlebectomy after endovenous laser ablation of varicose veins

1095

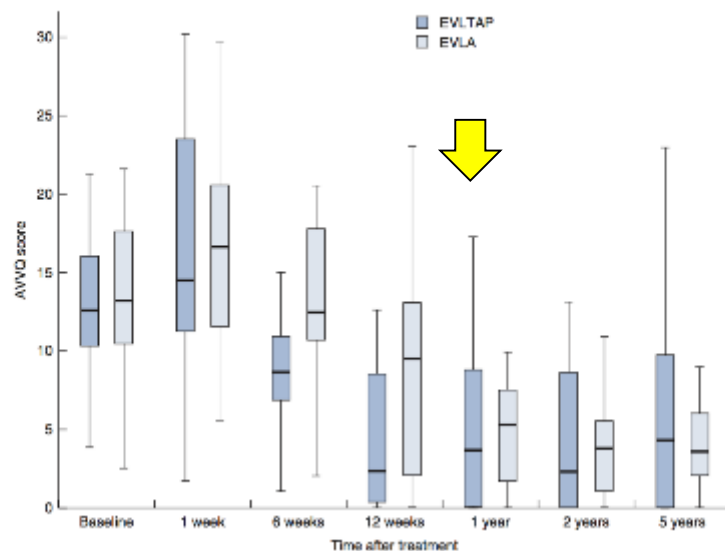


Table 2 Secondary procedures

	EVLTAP	EVLA
Secondary procedure		
Within 1 year	1 ambulatory phlebectomy + perforator ligation	13 ambulatory phlebectomy 3 ambulatory phlebectomy + perforator ligation
1–2 years	1 foam sclerotherapy 2 groin surgery	1 EVLA 1 groin surgery
2–5 years	1 ambulatory phlebectomy	1 ambulatory phlebectomy
Repeat secondary procedure	1 redo groin surgery + 1 ultrasound-guided foam sclerotherapy	4 redo ambulatory phlebectomy

EVLTAP, endovenous laser therapy with ambulatory phlebectomy; EVLA, endovenous laser ablation.

A systematic review and meta-analysis on the role of varicosity treatment

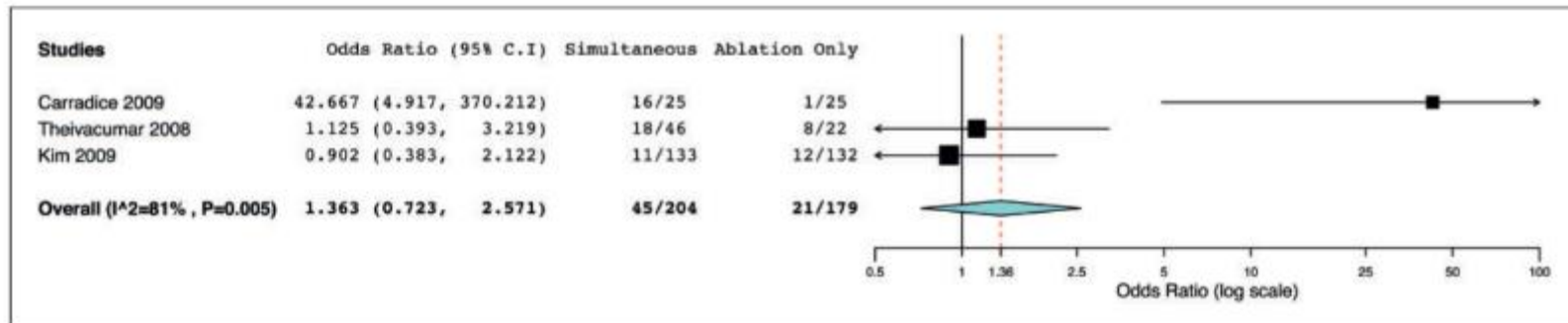


Figure 3. Forest plot of need for further procedures. Fixed Effects Inverse Variance model. Odds ratio = 0.734 (0.369–1.384), $p = 0.339$, (odds ratio > 1 favours delayed treatment). Heterogeneity: $I^2 = 81.45$, $p = 0.005$.

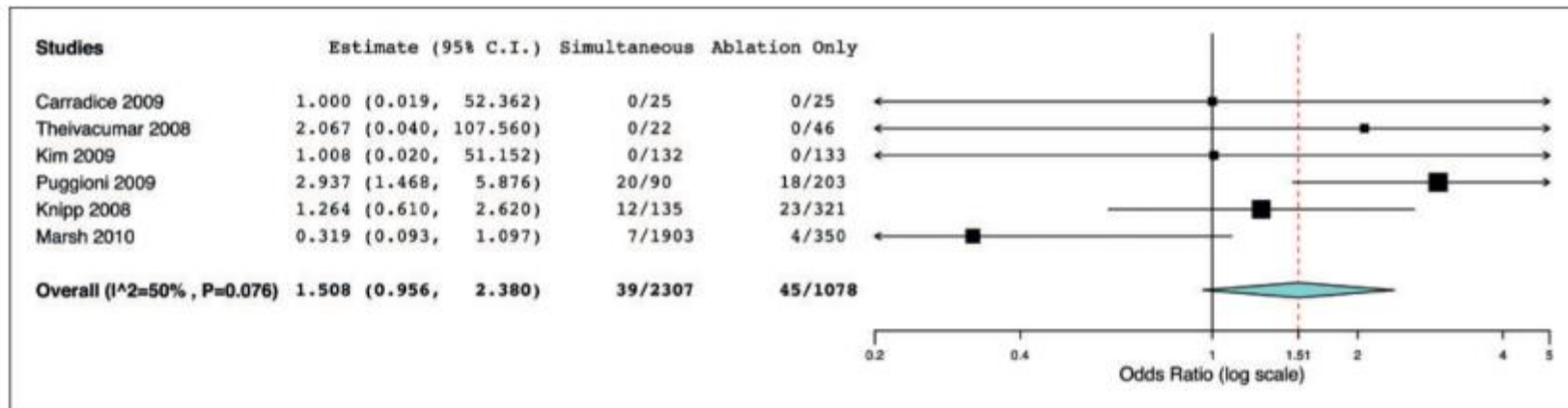
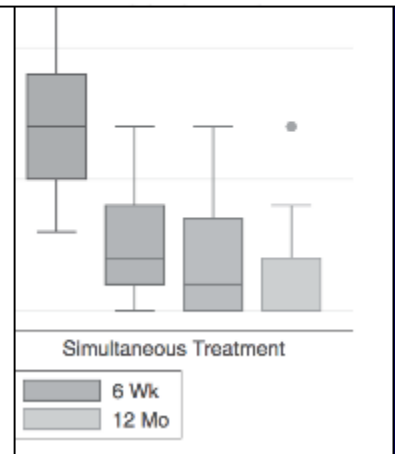
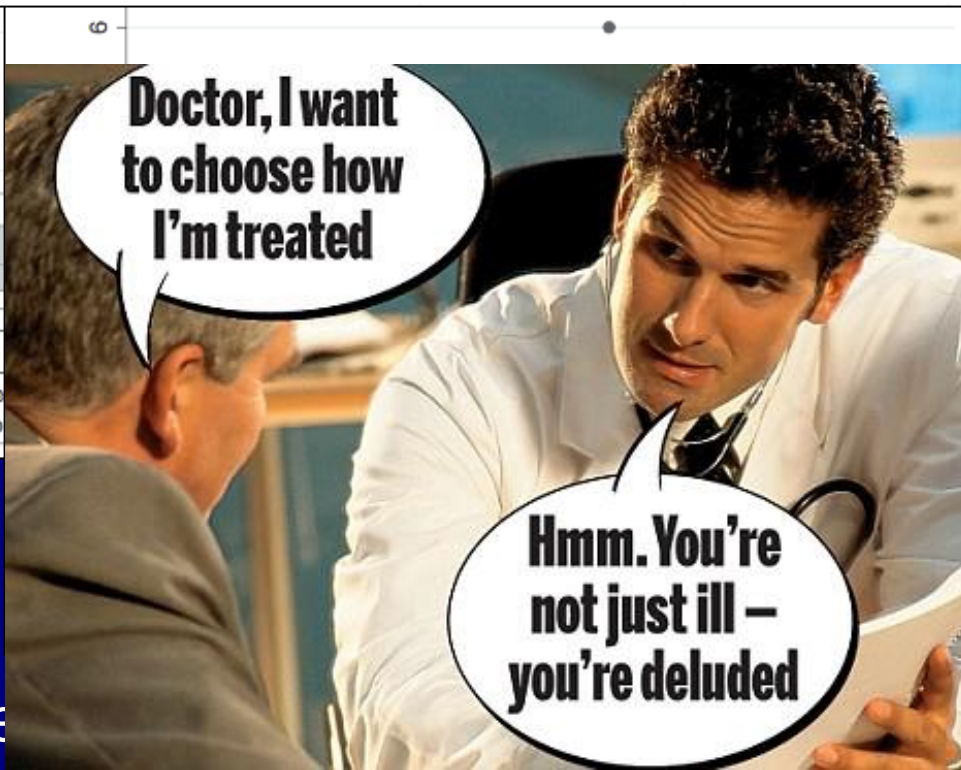
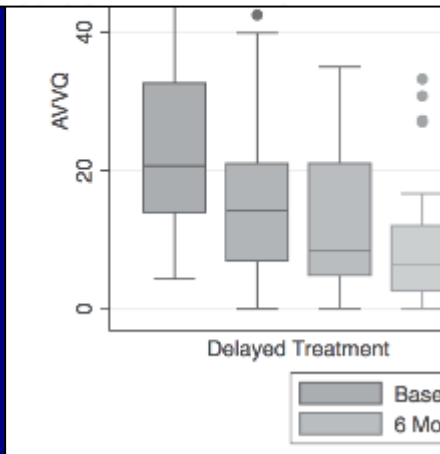


Figure 7. Forest plot of DVT incidence studies including all studies. Fixed Methods Inverse Variance Model. Odds ratio = 1.508 (0.956–2.380), $p = 0.077$ (odds ratio > 1 favours delayed treatment). Heterogeneity: $I^2 = 50\%$, $p = 0.076$.

Ambulatory Varicosity avulsion Later or Synchronized (AVULS)

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.



36% de

group required further treatment

aneous

Guidelines

NICE National Institute for
Health and Care Excellence

NICE



guideline

Varicose veins: diagnosis and management

Clinical guideline
Published: 24 July 2013
[nice.org.uk/guidance/cg168](https://www.nice.org.uk/guidance/cg168)

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

MD,^a Anthony J. Comerota, MD,^b Michael C. Dalsing, MD,^c Bo G. Eklof, MD,^d

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.

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R. Naylor, P. Nicolini, A. Rosales

Guidance

NICE National Institute for Health and Care Excellence

NICE

Recommendation 51

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

Class

Level

IIa

B

Recommendation 52

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

IIa

C

Published: 24 July 2013

nice.org.uk/guidance/cg168

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Eur J Vasc Endovasc Surg (2013) 46, 730–737

Editor's Choice — Management of Chronic Venous Disease

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

Writing Committee ^a C. Wittens, A.H. Davies, N. Bækgaard, R. Broholm, A. Cavezzi, S. Chastanet, M. de Wolf, C. Eggen, A. Giannoukas, M. Gohel, S. Kakkos, J. Lawson, T. Noppeney, S. Onida, P. Pittaluga, S. Thomis, I. Toonder, M. Vuylsteke,
ESVS Guidelines Committee ^b P. Kolh, G.J. de Borst, N. Chakfé, S. Debus, R. Hinchliffe, I. Koncar, J. Lindholt, M.V. de Céniga, F. Vermassen, F. Verzini,
Document Reviewers ^c M.G. De Maeseneer, L. Blomgren, O. Hartung, E. Kalodiki, E. Korten, M. Lugli, R. Naylor, P. Nicolini, A. Rosales

Guidance

NICE National Institute for
Health and Care Excellence

NICE

guideline

Varicose veins: diagnosis and management

Clinical guideline

Published: 24 July 2013

nice.org.uk/guidance/cg168

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

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NY; and Ann Arbor, Mich

Eur J Vasc Endovasc Surg (2015) 49, 678–737

Editor's Choice — Management of Chronic

10.7

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.

1

B

M.V. de Ceuja, F. Vermassen, F. Verzini,

Document Reviewers ^c M.G. De Maeseneer, L. Blomgren, O. Hartung, E. Kalodiki, E. Korten, M. Lugli,
R. Naylor, P. Nicolini, A. Rosales

Selective tributary treatment?



Selective tributary treatment?

Eur J Vasc Endovasc Surg (2010) 40, 122–128



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.

	Pre-operative	Post-operative	P
Significant GSV reflux	50 (100%)	20 (36%)	<0.001 (χ^2)
Significant SFJ reflux	20 (40%)	0 (0%)	<0.001 (χ^2)
Mean RD (s)	1.5 S.D. 0.2	0.81 S.D. 0.2	<0.001
Mean PRV (mm/s)	247 S.D. 40	120 S.D. 27	<0.001

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

GSV mean diameter	Pre-operative (mm)	Post-operative (mm)	P – t test
Terminal valve (SFJ)	6.7 S.D. 0.6	5.6 S.D. 0.5	<0.01
Sub-terminal valve	5.4 S.D. 0.5	4.8 S.D. 0.3	<0.05
Middle third of the thigh	5.0 S.D. 0.4	4.2 S.D. 0.2	<0.01
Knee	5.3 S.D. 0.6	4.0 S.D. 0.3	<0.01
Middle third of the calf	4.0 S.D. 0.5	2.7 S.D. 0.2	<0.01

Selective tributary treatment?

Eur J Vasc Endovasc Surg (2010) 40, 122–128



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

Conclusions: At 1-year follow-up, treatment of the great saphenous vein by phlebectomies of a large tributary was associated with a decrease in reflux in 50% of patients and improvement of symptoms. Patients with mild DUS alterations approached

(ie, larger diameter, or higher C-reflux) will more often fail to improve GSV.

Journal of
Vascular Surgery
Venous and Lymphatic Disorders™

The Effect of Isolated Phlebectomies of a Large Tributary on Great Saphenous Vein Reflux

Anke A. M. Bichard, MD, PhD,^a Renate R. van den Bos, MD, PhD,^a Loes M. Hollestein, MSc,^a M. Birgitte Maessen-Visch, MD, PhD,^b Yvonne Vergouwe, PhD,^c H. A. Martino Neumann, MD, PhD,^a Marianne G. R. de Maesseneer, MD, PhD,^{a,d} and Tamar Nijsten, MD, PhD,^a Rotterdam and Arnhem, The Netherlands; and Antwerp, Belgium

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

