CONTROVERSES ET ACTUALITES EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

JANUARY 23-25 2020

Anti-DVT Prophylaxis in Patients undergoing Thermal Endovenous Treatment

Isaac Nyamekye

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United Kingdom

Faculty disclosure

Isaac Nyamekye

I disclose the following past and present financial relationships:

Consultant for Olympus OSTE
Received travel support from Bard-Impra Medical
- **Received educational support** from Medtronic

Received research support from AstraZeneca
Research support from Bayer Plc
Educational grant from B Braun Medical

Endovenous Thermal Ablation: Serious VTE complications

Phlebology

Short report

Successful lysis in a stroke following endovenous laser ablation and extensive miniphlebectomy of varicose veins

Luca Spinedi[1], Daniel Staub[1] and Heiko Uthoff[1,2]

Abstract

Stroke is a very rare but potential fatal complication of endovenous thermal treatm
shunt. To our best knowledge, there are only two reports in the literature of stroke af
varicose veins, one after endovenous laser ablation and one after radiofrequency abla
conservatively. This report describes a successful lysis in a patient with an ischem
endovenous heat-induced thrombosis class I after endovenous laser ablation of both g
miniphlebectomy in a patient with an unknown patent foramen ovale.

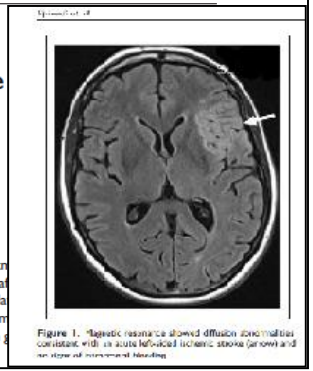


Figure 1. Magnetic resonance showed diffusion abnormalities consistent with an acute left-sided ischaemic stroke (arrow) and

Mail Online health

Mother-of-two's death after varicose vein surgery 'could have been prevented', her husband claims

- Nicola Tweedy had an operation on her varicose veins last March
- Two days after leaving the Norfolk and Norwich hospital she died
- Post-mortem examination showed she suffered a pulmonary embolism
- Inquest heard mother-of-two had not been made fully aware of the risks of developing a blood clot as a result of the surgery
- Husband Chris Tweedy said he believes her death could've been prevented
- Hospital spokesman said risks of surgery 'can never be eliminated'

icola Tweedy, 54, died two days after she ad her varicose veins operated on at the orfolk and Norwich hospital

procedure, a dressing by cotton wool pads and a bandage of both legs was applied. A prophylactic dose of low-molecular weight heparin (enoxaparinum natricum) was administered subcutaneously after a total procedure duration of approximately 90 min.

At the emergency department, an immediate com-

Consultant vascular surgeon [redacted] admitted to the inquest in Norwich that a thrombosis risk assessment had not been completed.

That meant the 54-year-old was not fully informed about the dangers of the surgery, including the increased risk for those with a high body mass index.

Nurse [redacted] said she accepted it was 'an oversight' and that a checklist had not been completed on the patient's discharge notes.

Accessed on-line 07 01 2020

Worcestershire NHS
Acute Hospitals NHS Trust

VTE after Endovenous Thermal Ablation: quantifying the risk

International Angiology 2016 February;35 (1):57-61

ORIGINAL ARTICLE

Morbidity and mortality after thermal venous ablations

Rafael D. MALGOR [1]*, Antonios P. GASPARIS [2], Nicos LABROPOULOS [2]

[1]Division of Vascular S
Medical Center, Stony
y Brook University

*Corresponding author: Ra
OK, USA. E-mail: rafael-r
0, 74104-5638, Tulsa,

BACKGROUND: Th
study was designed to
METHODS: We analy
n techniques. This
latabase.
Manufacturer and

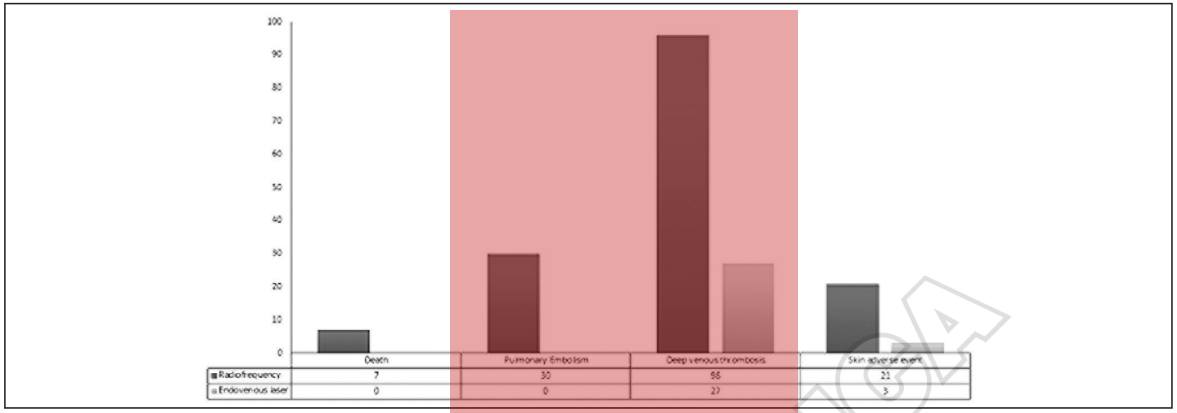


Figure 2.—Morbidity and mortality after radiofrequency and endovenous laser ablation reported in the MAUDE database.

VTE after Endovenous Thermal Ablation: quantifying the risk

CrossMark

Journal of
Vascular Surgery
Venous and Lymphatic Disorders™

Assessment of thrombotic adverse events and treatment patterns associated with varicose vein treatment

Thomas F. O'Donnell, MD,[a] Michael Eaddy, PharmD, PhD,[b] Aditya Raju, MS, BPharm,[b]

Table IV. Deaths associated with adverse events (*AEs*)

	Sclerotherapy (n = 12,708)	*Laser ablation (n = 22,980)*	*Radiofrequency ablation (n = 21,637)*	*Surgery (n = 11,529)*	*Multiple therapies (same day) (n = 32,311)*	*Multiple therapies (deferred) (n = 30,722)*
Death,[a] number of subjects/number of subjects with AE (%)						
DVT	0	7/701 (1.0) **3%**	9/954 (0.9) **4.4%**	6/277 (2.2)	9/1110 (0.8)	4/795 (0.5)
PE	0	2/58 (3.4)	1/68 (1.5)	0	3/73 (4.1)	2/75 (2.7)

ablation [radiofrequency or laser], or sclerotherapy [liquid or surgery, 2.4%; and sclerotherapy, 0.8%. For pulmonary em-

VTE after Endovenous Thermal Ablation: quantifying the risk

RCS ADVANCING SURGICAL STANDARDS

VASCULAR SURGERY

Ann R Coll Surg Engl 2012; **94**: 481–483
doi 10.1308/003588412X13171221592096

The incidence of post operative venous thromboembolism in patients undergoing varicose vein surgery recorded in Hospital Episode Statistics

Table 2 Treatments performed and incidence of venous thromboembolism

Analysis by	Number of procedures	Number of DVTs	Number of PEs	Total VTE episodes
Limb				
Unilateral	28,947 (81.8%)	86 (0.30%)	44 (0.15%)	130 (0.45%)
Bilateral	6,427 (18.2%)	40 (0.62%)	9 (0.14%)	49 (0.76%)
Attempt				
Primary	32,674 (92.4%)	113 (0.35%)	48 (0.15%)	161 (0.49%)
Redo	2,700 (7.6%)	13 (0.48%)	5 (0.19%)	18 (0.67%)
System				
Long	21,144 (59.8%)	77 (0.36%)	36 (0.17%)	113 (0.53%)
Short	1,493 (4.2%)	9 (0.60%)	1 (0.07%)	10 (0.67%)
Both	1,832 (5.2%)	9 (0.49%)	4 (0.22%)	13 (0.71%)
Unknown	10,905 (30.8%)	31 (0.28%)	12 (0.11%)	43 (0.39%)
Modality				
Open	29,435 (83.2%)	108 (0.37%)	50 (0.17%)	158 (0.54%)
EVLT	1,499 (4.2%)	6 (0.40%)	1 (0.07%)	7 (0.47%)
EVLT + phlebectomy	557 (1.6%)	7 (1.26%)	0 (0.00%)	7 (1.26%)
Sclerotherapy	3,761 (10.6%)	5 (0.14%)	2 (0.05%)	7 (0.19%)
Sclerotherapy + phlebectomy	71 (0.2%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
EVLT + sclerotherapy	111 (0.3%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

EVLT = endovenous laser therapy; DVT = deep vein thrombosis; PE = pulmonary embolism; VTE = venous thromboembolism

VTE after Endovenous Thermal Ablation: quantifying the risk

Original communication

Risk of venous thromboembolism following surgical treatment of superficial venous incompetence

Tom Barker[1], Felicity Evison[2], Ruth Benson[3], and Alok Tiwari[1]

Figure 1. Number of operations by year

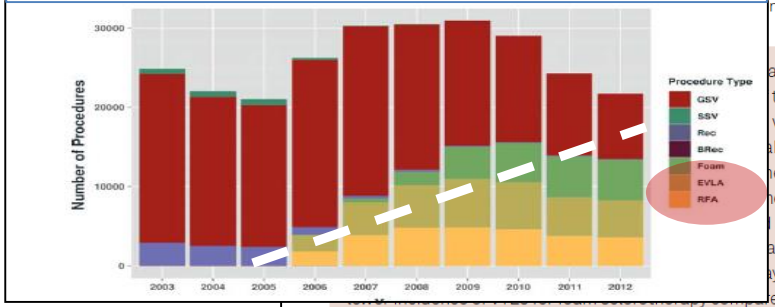
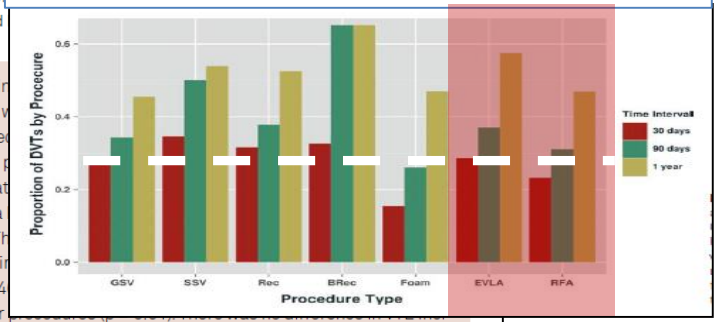


Figure 2. Percentage of VTEs by operation



dence between procedures at 90 days (p = 0.13) or one year (p = 0.16). *Conclusions:* Patients undergoing varicose vein procedures have a small but appreciable increased risk of VTE compared to the general population, with the effect persisting at one year. Foam sclerotherapy had a lower incidence of VTE compared to other procedures at 30 days, but this effect did not persist at 90 days or at one year. There was no other significant difference in the incidence of VTE between open, endovenous, and foam sclerotherapy treatments.

Keywords: Varicose veins, vascular surgical procedures, thrombosis, embolus

VTE after Endovenous Thermal Ablation: on-going issues

- Not addressed by Global VTE Guidelines (NICE, ACCP)
- Conflicting evidence on relevant risk factors
- No accepted diagnostic criteria to guide patient management
- No evidence to recommend which anticoagulant
    - -Injectable (LMWH & Fondaparinex)
    - -Oral (Vit. K antagonists & DOACs)
- No direct evidence to guide treatment duration

VTE after Endothermal Ablation: What are the relevant risk factors?

From the American Venous Forum

The safety of radiofrequency ablation of the great saphenous vein in patients with previous venous thrombosis

Alessandra Puggioni, MD, Nat… Shiferson, DO, Saadi Alhalbouni, MD, and En…

Background: The safety of radiofre… tients with previous history of deep venous thrombosis…
Methods: From April 2003 to June… ars) underwent 293 consecutive RFA procedures. In the… with a pullback rate of 2 cm/min (85 limbs, 30%); we s… 2 to 3 cm/min (205 limbs, 70%). We identified 29 patie… t-thrombotic venous disease; these were compared with t… vents were analyzed. By the CEAP classification, 204 lim… n patients (13%) had a history of superficial thrombophl… (range, 0.4-2.3 cm). Concomitant procedures included … gery in 4 (1%).
Results: AT events after RFA were … the sapheno-femoral junction (SFJ) in 24 (8%), commo… rall incidence of AT events in limbs with and without ev… spectively ($P = .36$).

Table II. Univariate analysis of risk factors for development of acute thrombotic events after great saphenous vein radiofrequency ablation in 293 limbs

Variable	*Total No.*	*AT events*	*No AT events*	P[a]
Limbs, No. (%)	293	38 (13)	255 (87)	
Age, mean ± SD, y		57.4 ± 2.5	60.6 ± 1	.19
Sex, No. (%)				
Females[b]	198	29 (76)	169 (66)	.27
Males	95	9 (24)	86 (34)	
CEAP presentation, No. (%)				
C_2-C_4	204	23 (61)	181 (71)	.19
C_5-C_6	89	15 (39)	74 (29)	
Prox GSV diameter, mean ± SD, cm[c]		1.1 ± 0.39	0.93 ± 0.27	<.01
Previous SVT, No. (%)				
No	256	28 (74)	228 (89)	.01
Yes	37	10 (26)	27 (11)	
Previous DVT, No. (%)				
No	264	36 (95)	228 (89)	.36
Yes	29	2 (5)	27 (11)	
Deep reflux, No. (%)[d]				
No	72	4 (36)	68 (33)	.06
Yes	200	28 (74)	172 (67)	
CFV	112	15 (39)	97 (38)	.57
FV	37	6 (16)	31 (12)	.4
PV	161	22 (58)	139 (55)	.26
Concomitant procedures, No. (%)				
No	203	18 (47)	185 (73)	<.01
Yes	90	20 (53)	70 (27)	
Perforator interruption	4	2 (5)	2 (1)	.08
Phlebectomies	88	20 (53)	68 (27)	<.001
Catheter size, No. (%)[e]				
6F	195	29 (88)	166 (84)	.8
8F	35	4 (12)	31 (16)	
Mean catheter temp/pullback, No. (%)[f]				.02
85°C at 2 cm/min	88	18 (47)	70 (27)	
90°C at 2-3 cm/min	205	20 (53)	185 (73)	

AT, Acute thrombotic; *CFV*, common femoral vein; *DVT*, deep venous thrombosis; *FV*, femoral vein; *GSV*, great saphenous vein; *PV*, popliteal vein; *SVT*, superficial vein thrombosis.
[a]Values of $P < .05$ are significant.

VTE after Endothermal Ablation: What are the relevant risk factors?

Original article

Clinical risk factors to predict deep venous thrombosis post-endovenous laser ablation of saphenous veins

Y-W Chi* and T C Woods†
*Vascular Center, University of California, Davis Medical Center, Sacramento, CA; †Division of Research, Molecular Cardiology, Ochsner Health System, New Orleans LA, USA

Table 1 Categorical variables

	Female gender	DM			PAD	VTE	SVT
No DVT	291	58			37	24	30
DVT	14	2			5	4	60
Percent (%)	4.8	3.4			13.5	16.7	200
P value	0.05	0.35			0.07	0.048	0.004

DM, diabetes mellitus; HTN, hypertension; HLD, hyperlipidaemia; CAD, coronary artery disease; TIA, transient ischaemic attack; PAD, peripheral artery disease; VTE, venous thromboembolism; SVT, superficial venous thrombosis; DVT, deep vein thrombosis

Table 3 Clinical risk factors to predict deep vein thrombosis post-endovenous laser therapy

	Odds ratio	*P* value
Age >66 years	4.1	0.007
Female gender	2.6	0.048
History of SVT	3.6	0.002

SVT, superficial venous thrombosis

insufficiency

Phlebology 2014;**29**:150–153. DOI: 10.1177/0268355512474254

Introduction

Lower extremity venous insufficiency, or venous incompetence, is a common medical condition that affects 25–30% of adult women and about 15% of men in Western society.[1] A majority of patients with varicose veins have insufficiency of

venous ulcerations. Chronic venous insufficiency has a great impact on patients' health-related quality of life, which is comparable to other common diseases and is associated with considerable health-care costs.[3]

The treatment of varicose veins reduces the

VTE after Endothermal Ablation: What are the relevant risk factors?

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Vascular Surgery
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Pretreatment elevated D-dimer levels without systemic inflammatory response are associated with thrombotic complications of thermal ablation of the great saphenous vein

Fedor Lurie, MD, PhD, and Robert L. Kistner, MD, *Honolulu, Hawaii*

Table I. Comparison between the groups

	No thrombotic complications (n = 104)	*EHIT (n = 7)*	*OTC (n = 9)*	
	Mean (SD)			P
Age, years	59.9 (12.3)	59 (10.2)	53.8 (12.1)	.4
GSV diameter (mm)	6.9 (1.9)	9 (2.9)	7.3 (2.1)	.0025

Patients who developed thrombotic complications and those with EHIT had significantly larger proximal GSV diameters compared with those with no thrombotic complications (Fig 1; Table I). However, there was no statistically significant association between thrombotic complications and other risk factors, such as age, increased BMI, number of comorbid conditions, and family history of VTE.

VTE after Endothermal Ablation: What are the relevant risk factors?

ELSEVIER

Ann Vasc Surg 2014; 28: 679–685
http://dx.doi.org/10.1016/j.avsg.2013.08.012

Manuscript received: October 15, 2012; manuscript accepted: August 19, 2013.

Deep Venous Thr… Endovenous Rad… Predictable?

Chad E. Jacobs, Maria Mora Pinzo… and Walter J. McCarthy, Chicago, I…

Background: Endovenous radiofre… varicose veins caused by saphenous… cation of this procedure. The purpos… and the associated predisposing fac…
Methods: A retrospective analysis… December 2008 to December 2011… were performed at a single institution… nologies, San Jose, CA). Duplex ultra… all patients. Risk factors assessed for…

Table II. Univariate and multivariate analysis of factors associated with deep venous thrombosis

			Univariate analysis			Univariate analysis		Multivariate analysis	
	Normal	DVT	Chi-squared	*P* value	EHIT	Chi-squared	*P* value	Wald test	*P* value
Age (yr), ± SD	53.76 ± 14.48	49 ± 8.49	−0.79[a]	0.57	61.45 ± 17.37	1.71	0.08	0.55	0.45
Gender, *n* (%)									
Female	191 (72.3)	1 (50)	0.49	0.48	4 (36.4)	6.62	0.01	4.91	0.027
Male	73 (27.7)	1 (50)			7 (63.6)				
Race, *n* (%)									
White	163 (63.9)	1 (50)	1.36	0.71	10 (90.9)	3.61	0.30		
African American	39 (15.3)								
Hispanic	49 (19.2)	1 (50)			1 (9.1)				
Asian	4 (1.6)								
Side, *n* (%)									
Right	146 (55.3)	1 (50)	0.02	0.88	7 (63.6)	0.29	0.59		
Left	118 (44.7)	1 (50)			4 (36.4)				
Treated vein, *n* (%)									
SSV	34 (13.0)	1 (50)	2.37	0.12	4 (36.4)	4.82	0.03	3.70	0.05
GSV	228 (87.0)	1 (50)			7 (63.6)				
Hypercoagulable factor, *n* (%)	7 (2.7)	—	0.05	0.81	1 (9.1)	1.49	0.22		
Factor V Leiden, *n* (%)	1 (0.4)	—	0.01	0.93	1 (9.1)	10.82	.001	6.69	0.01
History of DVT, *n* (%)	19 (7.4)	1 (50)	5.08	0.02	2 (18.2)	1.72	0.19		
Medications, *n* (%)									
Aspirin	47 (18.2)	—	0.45	0.99	6 (54.5)	8.8	0.003	7.01	0.01
Clopidogrel	5 (1.9)	—	0.40	0.99	1 (9.1)	2.48	0.22		
Warfarin	13 (5.1)	—	0.11	0.99	—	0.59	0.99		
OCPs	19 (19.0)	—	0.23	0.99	1 (50)	1.19	0.35		
Tobacco use, *n* (%)	75 (29.3)	1 (50)	0.40	0.50	6 (54.5)	3.18	0.07	0.92	0.33
Vein diameter (mm), ± SD									
LSV	5.05 ± 2.08	5.4	0.16[a]	0.87	4.6 ± 0.5	−0.77[a]	0.46		
GSV	7.5 ± 2.71	10	0.89[a]	0.37	9.8 ± 3.1	1.79[a]	0.13		

DVT, deep venous thrombosis; EHIT, endovenous heat-induced thrombosis; GSV, great saphenous vein; SSV, small saphenous vein; OCPs, oral contraceptive pills; SD, standard deviation.
[a]Independent *t*-test.

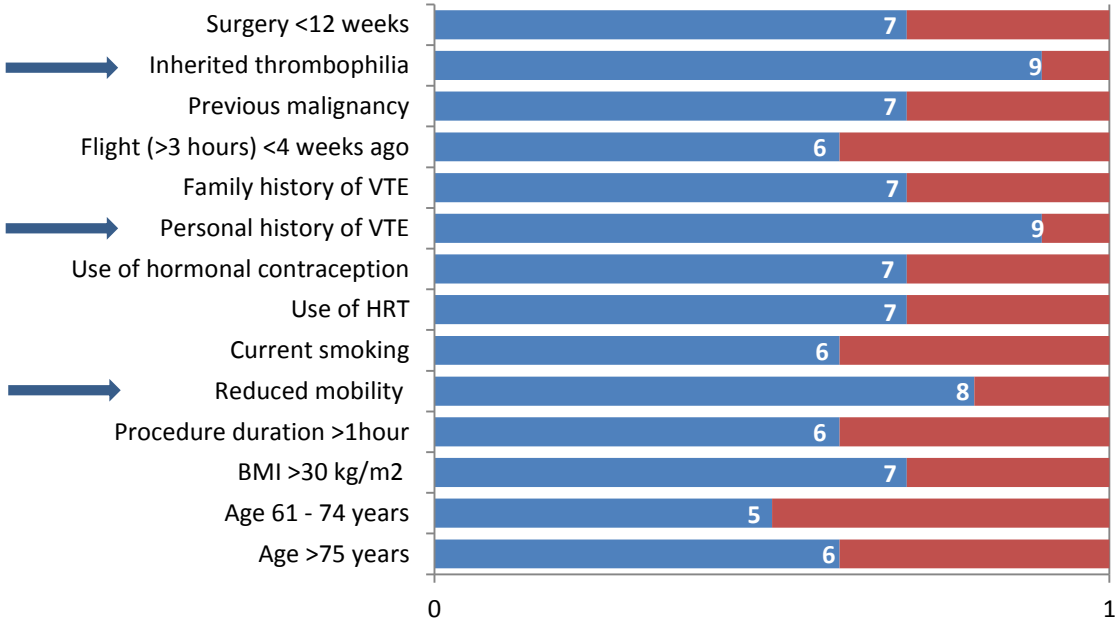
UK and Republic of Ireland survey study (2016-2018)

Likert scale

'very low risk'

'very high risk'

Relative significance of risk factors for VTE in endothermal ablation



42 consultant responses

Submitted for publication

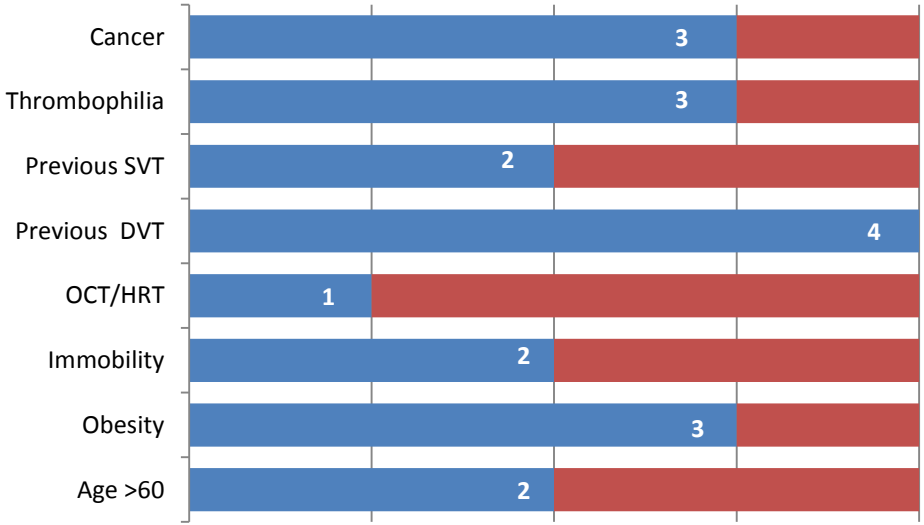
VTE Risk factors in Phlebology Guidelines

2015

2012

2011

2010



"can be prescribed"

"are candidates for"

"consider covering"

Worcestershire Acute Hospitals NHS Trust

‘Worcester Risk Assessment Tool’

High risk factors	**score**
1ary /1st degree VTE	2
Thrombophilia*	2
Limb immobility	2

Moderate risk factors	**score**
Obesity (BMI >30).	1
Hormone therapy	1
Superficial vein thrombosis	1

Other high risk factors e.g. *Cancer, Inflammatory Arthritis or Inflammatory Bowel Disease: Score 2

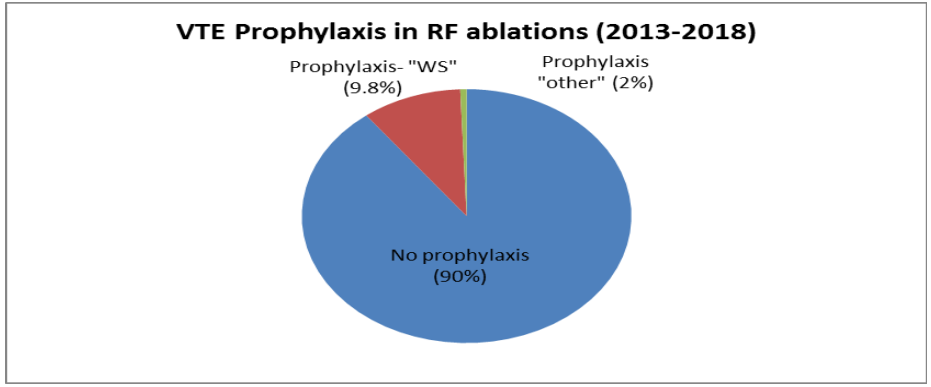
W-Score	DVT Risk
0	Low
1	Moderate
2+	High

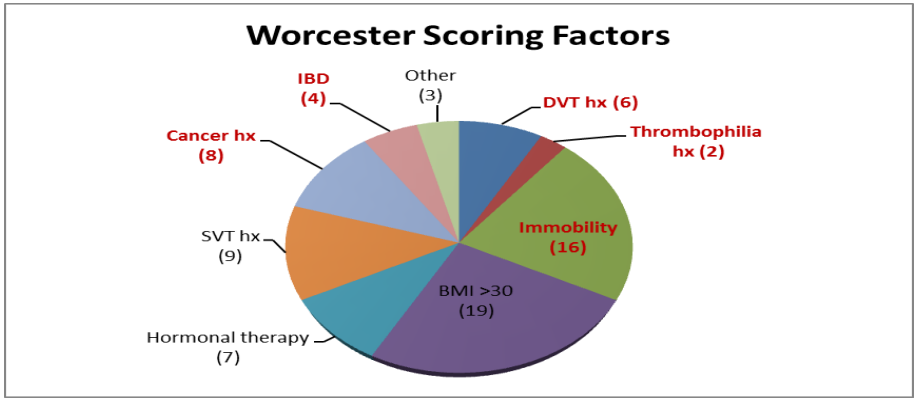
Worcester Score : Radiofrequency Thermal Ablation: 2013-2018

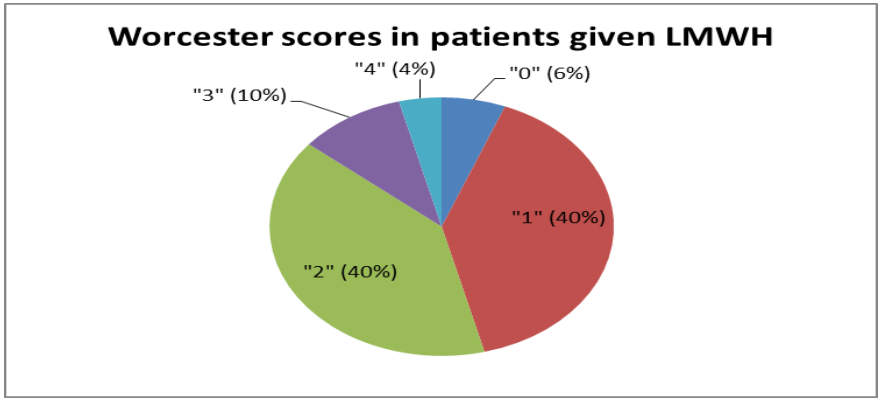
- Patients -481 (Unilateral treatment)
- Age -53 years (range 18-81)
- Women -56% (269)
- RF Ablation (GSV -85%, SSV -9%, AASV -6%)
- 6 week clinical review (not routine duplex scans)

- **No VTE events**

Worcester Score : Radiofrequency Thermal Ablation: 2013-2018



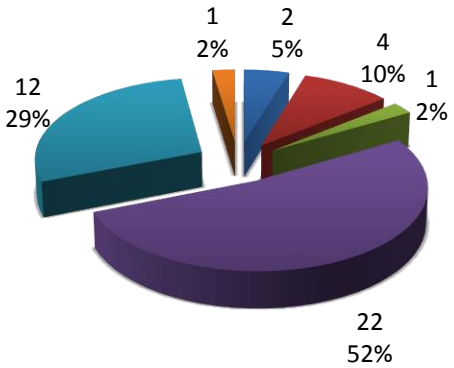




UK and Republic of Ireland survey study (2016-2018)

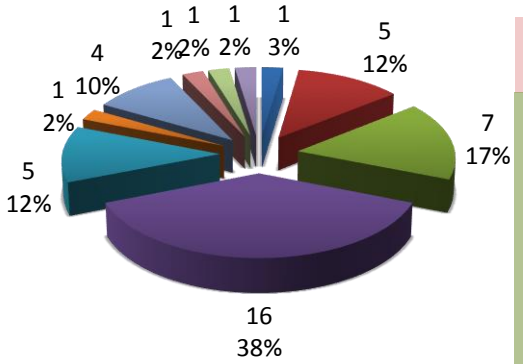
Thromboprophylaxis preferences

‘moderate VTE risk patient’



- No thromboprophylaxis
- Defer surgery
- Compression and exercise
- Single peri-operative dose of LMWH
- 5 - 7 days of LMWH
- 10 - 14 days of LMWH

‘high VTE risk patient’



- No answer given
- Defer surgery
- Single peri-operative dose of LMWH
- 5 -7 days of LMWH
- 10 - 14 days of LMWH
- 14 - 28 days of LMWH
- >28 days of LMWH
- DOAC for 1 week
- DOAC for 2 weeks
- DOAC for 6 weeks

42 consultant responses

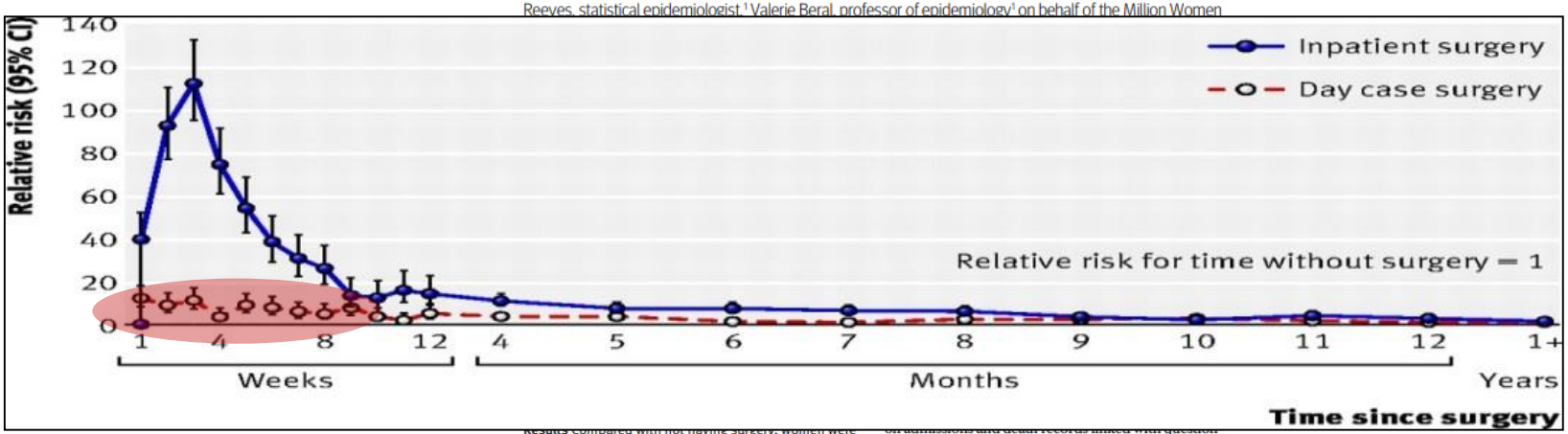
Time incidence of post procedural VTE

BMJ

RESEARCH

Duration and magnitude of the postoperative risk of venous thromboembolism in middle aged women: prospective cohort study

Siân Sweetland, statistical epidemiologist,[1] Jane Green, clinical epidemiologist,[1] Bette Liu, senior research fellow,[1,4] Amy Berrington de González, investigator,[1,2] Marianne Canonico, research associate,[1,3] Gillian Reeves, statistical epidemiologist,[1] Valerie Beral, professor of epidemiology[1] on behalf of the Million Women



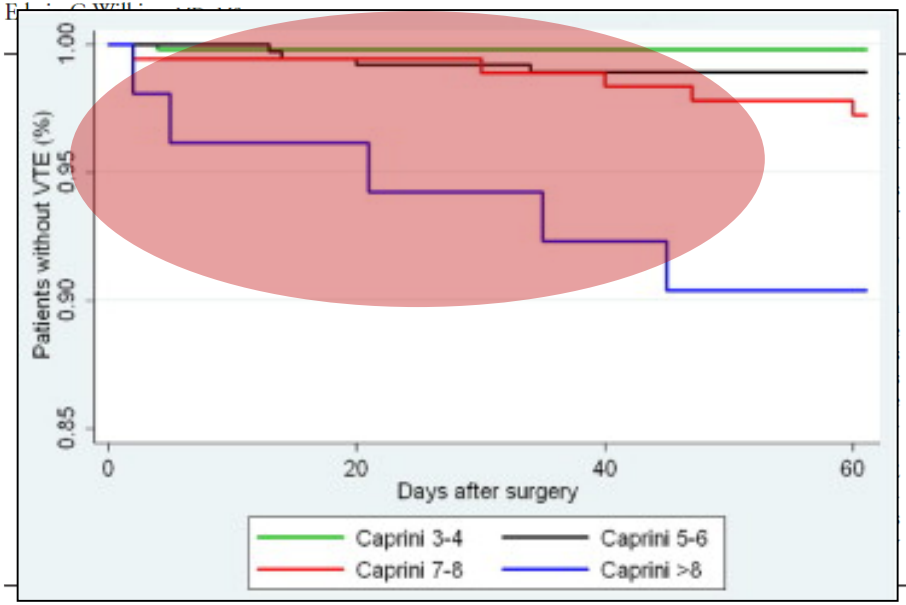
Results Compared with not having surgery, women were 70 times more likely to be admitted with venous thromboembolism in the first six weeks after an inpatient operation (relative risk 69.1, 95% confidence interval

admissions and death records linked with question-naire data from a large cohort of UK women, the Mil-lion Women Study, we examined the pattern of risk of venous thromboembolism over time since surgery and

Time incidence of post procedural VTE

Validation of the Caprini Risk Assessment Model in Plastic and Reconstructive Surgery Patients

Christopher J Pannucci, MD, MS, Steven H Bailey, MD, George Dreszer, MD, MS,
Christine Fisher Wachtman, MD, Justin W Zumsteg, MD, Reda M Jaber, BS, Jennifer B Hamill, MPH,
Keith M Hume, MA, J Peter Rubin, MD, Peter C Neligan, MB, FRCS(I), FRCSC, FACS,
Loree K Kalliainen, MD, FACS, Ronald E Hoxworth, MD, Andrea L Pusic, MD, MHS, FRCSC,



Time incidence of post procedural VTE

RCS ADVANCING SURGICAL STANDARDS

VASCULAR SURGERY

Ann R Coll Surg Engl 2012; **94**: 481–483
doi 10.1308/003588412X13171221592096

The incidence of post operative venous thromboembolism in patients undergoing varicose vein surgery recorded in Hospital Episode Statistics

PA Sutton, Y El-Duhwaib, J Dyer, AJ Guy

Table 2 Treatments performed and incidence of venous thromboembolism

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Redo	2,700 (7.6%)	13 (0.48%)	5 (0.19%)	18 (0.67%)
System				
Long	21,144 (59.8%)	77 (0.36%)	36 (0.17%)	113 (0.53%)
Short	1,493 (4.2%)	9 (0.60%)	1 (0.07%)	10 (0.67%)
Both	1,832 (5.2%)	9 (0.49%)	4 (0.22%)	13 (0.71%)
Unknown	10,905 (30.8%)	31 (0.28%)	12 (0.11%)	43 (0.39%)
Modality				
Open	29,435 (83.2%)	108 (0.37%)	50 (0.17%)	158 (0.54%)
EVLT	1,499 (4.2%)	6 (0.40%)	1 (0.07%)	7 (0.47%)
EVLT + phlebectomy	557 (1.6%)	7 (1.26%)	0 (0.00%)	7 (1.26%)
Sclerotherapy	3,701 (10.5%)	5 (0.14%)	2 (0.05%)	7 (0.19%)
Sclerotherapy + phlebectomy	71 (0.2%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
EVLT + sclerotherapy	111 (0.3%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

EVLT = endovenous laser therapy; DVT = deep vein thrombosis; PE = pulmonary embolism; VTE = venous thromboembolism

Results

A overall of 35,374 patients (65% female, median age: 50 years, interquartile range [IQR]: 39–60 years) were identified in this study. Three-quarters (74%) had their procedure performed as a day case. The median length of stay for the remaining patients was 1 day (range: 1–143 days).

The overall incidence of VTE in our study was 0.51%. A total of 126 patients reattended with a post-operative DVT (0.36%) and 53 with a PE (0.15%). Half (51%) of these individuals were female with a median age of 54 years (IQR: 45–62 years). The median time to re-presentation with DVT and PE was 11 days (IQR: 0–77 days) and 18 days (IQR: 8–48 days) respectively.

Time incidence of post procedural VTE

Original communication

Risk of venous thromboembolism following surgical treatment of superficial venous incompeten

Tom Barker[1], Felicity Evison[2], Ruth Benson[3], and Alok Tiwari[1]

[1] Department of Vascular Surgery, Queen Elizabeth Hospital, Birmingham, United Kingdom

Table III. Number of VTEs by year at 30 days, 90 days, and one year. The number in parenthe
VTE in that year.

Year	No of VTEs at 30 days	N	
2003	60 (0.24)		
2004	55 (0.25)		
2005	55 (0.2		(0.44)
2006			99 (0.38)
2007			128 (0.42)
2008			158 (0.52)
2009	9	9)	165 (0.53)
2010	79 (0	98 (0.34)	142 (0.49)
2011	63 (0.26	85 (0.35)	128 (0.53)
2012	63 (0.29)	82 (0.38)	135 (0.62)

Treat at-risk patients into the post-procedure period

ncidence of VTE

In total, 686 patient episodes of VTE were recorded at 30 days (0.26% incidence), 884 at 90 days (0.34% incidence), and 1,246 at one year (0.48% incidence). The majority of VTEs occurred within 30 days for most procedures with the exception of foam and EVLA where a greater number of VTEs were seen in the 90 day to one year period (Table II).

VTE prophylaxis after SVT: duration of treatment

Journal of Thrombosis and Haemostasis, **10**: 1026–1035 DOI: 10.1111/j.1538-7836.2012.04727.x

ORIGINAL ARTICLE

A randomized double-blind study of low-molecular-weight heparin (parnaparin) for superficial vein thrombosis: STEFLUX (Superficial ThromboEmbolism and Fluxum)

B. COSMI,* M. FILIPPINI,* D. TONTI,† G. AVRUSCIO,‡ A. GHIRARDUZZI,§ E. BUCHERINI,¶

Table 2 Efficacy outcomes

Patients	All	Group A	Group B	Group C	*P**
N	663	217 ID, 10/7	223 ID, 30/7	223 LD, 30/7	
No. ITT (intention-to-treat)	648	212	219	217	–
0–33 days					
Total (%)	53 (8.2)	33 (15.6)	4 (1.8)	16 (7.4)	< 0.0001
Distal DVT (symptomatic)	7 (6)	6 (6)	0	1	
Proximal DVT (symptomatic)	6 (3)	3 (1)	1 (1)	2 (1)	
PE	1	1	0	0	
SVT extension (Ext. to s/f junction; symptomatic)	26 (4;19)	14 (3;11)	2 (0;1)	10 (1;7)	

daily (o.d.) for 10 days followed by placebo for 20 days (group A) or 8500 UI o.d. for 10 days followed by 6400 UI once daily (o.d.) for 20 days (group B) or 4250 UI o.d. for 30 days (group C) in a double-blind fashion in 16 clinics. Primary outcome was the composite of symptomatic and asymptomatic deep vein thrombosis (DVT), symptomatic pulmonary embolism (PE) and relapse and/or symptomatic or asymptomatic SVT recurrence in the first 33 days with 60 days follow-up. *Results:* Among 664 patients, primary outcome occurred

Introduction

Superficial vein thrombosis (SVT) of the lower limbs has been traditionally considered a benign disorder which is associated with varicose veins in many patients [1], although it also shares the same risk factors as a deep vein thrombosis (DVT) such as immobility, cancer or thrombophilia. SVT carries a relevant risk of thromboembolic complications as shown in a recent observational study in which 9.6% patients with isolated SVT developed complications such as pulmonary embolism (PE)

VTE prophylaxis after Endothermal Ablation: duration of treatment

Established in 1871

Swiss Medical Weekly

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Duration of pharmacological thromboprophylaxis

Table 3: Cumulative primary efficacy endpoint and cumulative secondary outcomes for all patients receiving thromboprophylaxis for 3 days (group 1) and 10 days (group 2) after endovenous laser ablation.

3/7 10/7

Variables		Total (n = 793)	Group 1 (n = 391)	Group 2 (n = 402)	OR (95% CI)	p-value	PS-matched ATT	PS-matched 95% CI
Highest EHIT class during follow-up	EHIT class 1	37 (4.7)	20 (5.1)	17 (4.2)	0.82 (0.42 to 1.59)	0.555	0.005	−0.033 to 0.043
	EHIT class 2	6 (0.8)	5 (1.3)	1 (0.3)	0.19 (0.02 to 1.66)	0.133	−0.021	−0.066 to 0.023
Deep vein thrombosis		3 (0.4)	3 (0.8)	0	n.a.	0.119*	−0.003	−0.008 to 0.002
Paraesthesia		86 (10.8)	49 (12.5)	37 (9.2)	0.71 (0.45 to 1.11)	0.133	−0.037	−0.135 to 0.062
Infection		4 (0.5)	4 (1.0)	0	n.a.	0.059*	−0.003	−0.007 to 0.002

ATT = average treatment effect on treated; CI = confidence interval; EHIT = endovenous heat-induced thrombosis; EVLA = endovenous laser ablation; n.a. = not applicable; PS-matched = propensity score-matched * Fisher's exact test. After propensity score-matched analysis the comparison of the two groups showed 95% confidence interval crosses zero, meaning that the comparison is not significant at p <0.05

optimal duration of pharmacological post-EVLA thrombo-

Conclusions

- Endovenous thermal procedures may be complicated by serious VTE events
- Employ selective VTE prevention strategies
- Risk assess all patients pre-operatively
- Add anticoagulant prophylaxis for patients at increased VTE risk
    - extended prophylaxis into the post-procedure period