

# EVIDENCE BASED STATEMENT

## DOMAIN 3, Statement 8

TOPIC: **Superficial venous disease periprocedural thrombotic risk management.**

### SEARCH TERMS & SOURCES

((thrombosis) AND (varicose veins)) AND (procedure)

#### INCLUSION CRITERIA

- Lower limb only
- Reviews
- Publication < 10 years, only ENG

### SEARCH RESULT BEFORE - AFTER SELECTION

69/6

#### PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Boyle E, Reid J, O'Donnell M, et al. Thromboprophylaxis for varicose vein procedures - A national survey. *Phlebology*. 2019 Oct;34(9):598-603.
2. Nemoto H, Mo M, Ito T, et al. Venous thromboembolism complications after endovenous laser ablation for varicose veins and role of duplex ultrasound scan. *J Vasc Surg Venous Lymphat Disord*. 2019 Nov;7(6):817-823.
3. Hingorani AP, Ascher E, Markevich N, et al. Deep venous thrombosis after radiofrequency ablation of greater saphenous vein: a word of caution. *J Vasc Surg*. 2004 Sep;40(3):500-4.
4. Sweetland S, Green J, Liu B, et al. Duration and magnitude of the postoperative risk of venous thromboembolism in middle aged women: prospective cohort study. *BMJ*. 2009 Dec 3;339:b4583

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### IDENTIFIED REFERENCES

1. Alameer A, Aherne T, Naughton P, et al. Peri-procedural thromboprophylaxis in the prevention of DVT in varicose vein interventions: A systematic review and meta-analysis. *Surgeon*. 2022 May 16:S1479-666X(22)00059-2.
2. Kochubey MS, Siada SS, Tenet M, et al. Thrombotic complications of superficial endovenous ablation: a contemporary review of thermal and non-thermal techniques. *J Cardiovasc Surg (Torino)*. 2021 Oct;62(5):420-426.
3. Kemp MT, Obi AT, Henke PK, Wakefield TW. A narrative review on the epidemiology, prevention, and treatment of venous thromboembolic events in the context of chronic venous disease. *J Vasc Surg Venous Lymphat Disord*. 2021 Nov;9(6):1557-1567.
4. Healy DA, Twyford M, Moloney T, Kavanagh EG. Systematic review on the incidence and management of endovenous heat-induced thrombosis following endovenous thermal ablation of the great saphenous vein. *J Vasc Surg Venous Lymphat Disord*. 2021 Sep;9(5):1312-1320.e10.
5. Healy DA, Kimura S, Power D, et al. A Systematic Review and Meta- analysis of Thrombotic Events Following Endovenous Thermal Ablation of the Great Saphenous Vein. *Eur J Vasc Endovasc Surg*. 2018 Sep;56(3):410-424.
6. Testroote MJ, Wittens CH. Prevention of venous thromboembolism in patients undergoing surgical treatment of varicose veins. *Phlebology*. 2013 Mar;28 Suppl 1:86-90.

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### TEXT FOR INCLUSION IN THE DOCUMENT

DOMAIN 3, Statement 8, TOPIC: “**Superficial venous disease periprocedural thrombotic risk management.**”

The thrombotic risk associated with varicose veins procedures has been reported to be low after endovenous thermal ablation (<2%). Nevertheless, limited data are available on non-thermal non-tumescent devices use and thrombotic complications have been documented in more than 6% of cases. **Kochubey MS, Siada SS, Tenet M, et al. Thrombotic complications of superficial endovenous ablation: a contemporary review of thermal and non-thermal techniques. J Cardiovasc Surg (Torino). 2021 Oct;62(5):420-426.**

At the same time, caution in such risk management was previously requested by data showing up to 16% of thrombosis following endovenous thermal ablation.

**Hingorani AP, Ascher E, Markevich N, et al. Deep venous thrombosis after radiofrequency ablation of greater saphenous vein: a word of caution. J Vasc Surg. 2004 Sep;40(3):500-4.**

Properly assessing the thrombotic risk of both the patient and of the procedure is of paramount importance.

Unfortunately, data allowing proper scoring of the different thrombotic risk along the several chronic venous disease stages are still missing, as well as for the specific risk stratification of the different procedural options.

An extended course of thromboprophylaxis demonstrated to reduce the risk of developing deep venous thrombosis compared to a short course.

However, the available data did not stratify on the patients thrombotic risk.

**\*Alameer A, Aherne T, Naughton P, et al. Peri-procedural thromboprophylaxis in the prevention of DVT in varicose vein interventions: A systematic review and meta-analysis. Surgeon. 2022 May 16:S1479-666X(22)00059-2.**

Endothermal Heat Induced Thrombosis (EHIT) incidence has been documented in very rare cases (0.11% for EHIT 3, 0.013% for EHIT 4, 0.063% for other thrombosis),

**Nemoto H, Mo M, Ito T, et al. Venous thromboembolism complications after endovenous laser ablation for varicose veins and role of duplex ultrasound scan. J Vasc Surg Venous Lymphat Disord. 2019 Nov;7(6):817-823.**

leading to questioning the real necessity of routine post-operative ultrasound surveillance.

**Suarez L, Tangney E, O'Donnell TF, Iafrati MD. Cost analysis and implications of routine deep venous thrombosis duplex ultrasound scanning after endovenous ablation. J Vasc Surg Venous Lymphat Disord. 2017 Jan;5(1):126-133.**

In conclusion, until larger randomized comparative trials won't be published on the topic, maximum care in not underestimating the thrombotic risk of superficial venous procedures must be paid, focusing on properly assessing the risk of both the patient and of the procedure in an individualized way.

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### STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 3, Statement 8

All venous procedures bring a small but potentially significant thrombo-embolic risk: individual risk and related prophylaxis must be performed by an expert physician.

### SELECTED REFERENCES

1. Kochubey MS, Siada SS, Tenet M, et al. Thrombotic complications of superficial endovenous ablation: a contemporary review of thermal and non-thermal techniques. *J Cardiovasc Surg (Torino)*. 2021 Oct;62(5):420-426.
2. Hingorani AP, Ascher E, Markevich N, et al. Deep venous thrombosis after radiofrequency ablation of greater saphenous vein: a word of caution. *J Vasc Surg*. 2004 Sep;40(3):500-4.
3. \*Alameer A, Aherne T, Naughton P, et al. Peri-procedural thromboprophylaxis in the prevention of DVT in varicose vein interventions: A systematic review and meta-analysis. *Surgeon*. 2022 May 16:S1479-666X(22)00059-2.
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### IDENTIFIED LITERATURE BIAS

Different outcome measures (clinical, ultrasound, lab) for thrombosis detection

### SUGGESTED NEXT LINES OF RESEARCH

Multi-center head to head thromboprophylaxis schemes comparison, with homogeneous thrombosis detection outcome measures