

EVIDENCE BASED STATEMENT

DOMAIN **04**, Statement **02**

TOPIC: “Superficial venous insufficiency role in deep venous disease”

SEARCH TERMS & SOURCES

((superficial) AND (deep)) AND (reflux) AND (abolition)

INCLUSION CRITERIA

- Reviews, Meta-analysis
- Publication < 10 years
- only ENG

SEARCH RESULT BEFORE - AFTER SELECTION

25/19

PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Köksoy C, Bahçecioglu İB, Çetinkaya ÖA, Akkoca M. Iliocaval outflow obstruction in patients with venous ulcers in a small comparison study between patients with primary varicose veins and chronic deep vein disease. J Vasc Surg Venous Lymphat Disord. 2021 May;9(3):703-711.
2. Brown CS, Osborne NH, Kim GY, et al. Effect of concomitant deep venous reflux on truncal endovenous ablation outcomes in the Vascular Quality Initiative. J Vasc Surg Venous Lymphat Disord. 2021 Mar;9(2):361-368.e3.
3. Hong KP, Kim DK. The Effect of Saphenous Vein Ablation on Combined Segmental Popliteal Vein Reflux. Korean J Thorac Cardiovasc Surg. 2018 Oct;51(5):338-343.
4. Hirmerova J, Seidlerova J, Subrt I. Deep vein thrombosis and/or pulmonary embolism concurrent with superficial vein thrombosis of the legs: cross-sectional single center study of prevalence and risk factors. Int Angiol. 2013 Aug;32(4):410-6.
5. Marston WA, Brabham VW, Mendes R, et al. The importance of deep venous reflux velocity as a determinant of outcome in patients with combined superficial and deep venous reflux treated with endovenous saphenous ablation. J Vasc Surg. 2008 Aug;48(2):400-5.
6. MacKenzie RK, Allan PL, Ruckley CV, et al. The effect of long saphenous vein stripping on deep venous reflux. Eur J Vasc Endovasc Surg 2004
7. Adam DJ, Bello M, Hartshorne T, London NJ. Role of superficial venous surgery in patients with combined superficial and segmental deep venous reflux. Eur J Vasc Endovasc Surg. 2003 May;25(5):469-72.
8. Puggioni A, Lurie F, Kistner RL, Eklof B. How often is deep venous reflux eliminated after saphenous vein ablation? J Vasc Surg. 2003 Sep;38(3):517-21

EVIDENCE BASED STATEMENT

Domain 4; Statement 2

IDENTIFIED REFERENCES

1. Chaitidis N, Kokkinidis DG, Papadopoulou Z, et al. Management of Post-thrombotic Syndrome: A Comprehensive Review. *Curr Pharm Des.* 2022;28(7):550-559.
2. Benfor B, Peden EK. A systematic review of management of superficial venous reflux in the setting of deep venous obstruction. *J Vasc Surg Venous Lymphat Disord.* 2022 Jan 20:S2213-333X(22)00003-8.
3. Goldschmidt E, Schafer K, Lurie F. A systematic review on the treatment of nonhealing venous ulcers following successful elimination of superficial venous reflux. *J Vasc Surg Venous Lymphat Disord.* 2021 Jul;9(4):1071-1076.e1.
4. Bonkemeyer Millan S, Gan R, Townsend PE. Venous Ulcers: Diagnosis and Treatment. *Am Fam Physician.* 2019 Sep 1;100(5):298-305.
5. Garcia R, Labropoulos N. Duplex Ultrasound for the Diagnosis of Acute and Chronic Venous Diseases. *Surg Clin North Am.* 2018 Apr;98(2):201-218.
6. Montminy ML, Jayaraj A, Raju S. A systematic review of the efficacy and limitations of venous intervention in stasis ulceration. *J Vasc Surg Venous Lymphat Disord.* 2018 May;6(3):376-398.e1.
7. Weber B, Hafner J, Willenberg T, Hoerstrup SP. Bioengineered valves for the venous circulation. *Expert Rev Med Devices.* 2016 Nov;13(11):1005-1011.
8. Recek C. Hemodynamics-based treatment of varices: A therapeutic concept counteracting the intrinsic tendency of varicose veins to recur. *Phlebology.* 2016 Dec;31(10):704-711.
9. Recek C. Competent and incompetent calf perforators in primary varicose veins: a resistant myth. *Phlebology.* 2016 Sep;31(8):532-40.
10. Maleti O, Lugli M, Tripathi RK. Deep venous reconstructive surgery. *Semin Vasc Surg.* 2015 Mar;28(1):39-46.
11. Rosales A. Valve reconstructions. *Phlebology.* 2015 Mar;30(1 Suppl):50-8.
12. Goel RR, Abidia A, Hardy SC. Surgery for deep venous incompetence. *Cochrane Database Syst Rev.* 2015 Feb 23;2015(2):CD001097.
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14. Malas MB, Qazi U, Lazarus G, et al. Comparative effectiveness of surgical interventions aimed at treating underlying venous pathology in patients with chronic venous ulcer. *J Vasc Surg Venous Lymphat Disord.* 2014 Apr;2(2):212-25.
15. Kanth AM, Khan SU, Gasparis A, et al. The distribution and extent of reflux and obstruction in patients with active venous ulceration. *Phlebology* 2015 Jun;30(5):350-6.
16. Khilnani NM. Duplex ultrasound evaluation of patients with chronic venous disease of the lower extremities. *AJR Am J Roentgenol.* 2014 Mar;202(3):633-42.
17. Michiels JJ, Moosdorff W, Maasland H, et al. Duplex ultrasound, clinical score, thrombotic risk, and D-dimer testing for evidence based diagnosis and management of deep vein thrombosis and alternative diagnoses in the primary care setting and outpatient ward. *Int Angiol.* 2014 Feb;33(1):1-19.
18. Jibiki M, Inoue Y, Terasaki H, et al. The effect of short saphenous vein stripping in patients with deep venous reflux. *Ann Vasc Dis.* 2013;6(3):612-6.
19. Recek C. Calf pump activity influencing venous hemodynamics in the lower extremity. *Int J Angiol.* 2013 Mar;22(1):23-30.

EVIDENCE BASED STATEMENT

Domain 4; Statement 2

TEXT FOR INCLUSION IN THE DOCUMENT

DOMAIN 04, Statement 02, TOPIC: “[Superficial venous insufficiency role in deep venous disease](#)”

Great and small saphenous system reflux suppression demonstrated to be safe and potentially effective also in eventually coexisting deep venous reflux management.

[Jibiki M, Inoue Y, Terasaki H, et al. The effect of short saphenous vein stripping in patients with deep venous reflux. *Ann Vasc Dis.* 2013;6(3):612-6].

A recent analysis reported successful deep reflux suppression in about a third of patients, particularly in case of segmental rather than axial deep drainage compromise.

[Puggioni A, Lurie F, Kistner RL, Eklof B. How often is deep venous reflux eliminated after saphenous vein ablation? *J Vasc Surg.* 2003 Sep;38(3):517-21].

Popliteal or femoral reflux velocities lower than 10 cm/sec have been found to be associated with a more pronounced improvement in both the venous filling index and the venous clinical severity score following superficial venous reflux treatment.

[Marston WA, Brabham VW, Mendes R, et al. The importance of deep venous reflux velocity as a determinant of outcome in patients with combined superficial and deep venous reflux treated with endovenous saphenous ablation. *J Vasc Surg.* 2008 Aug;48(2):400-5].

It must be noted that cases affected by deep venous reflux presented a significant rate of complications following superficial venous ablation in a dedicated publication, therefore proper patient selection must be performed before indicating the treatment.

***[Brown CS, Osborne NH, Kim GY, et al. Effect of concomitant deep venous reflux on truncal endovenous ablation outcomes in the Vascular Quality Initiative. *J Vasc Surg Venous Lymphat Disord.* 2021 Mar;9(2):361-368.e3].**

Preliminary evidence suggests that superficial venous reflux ablation is safe also in case of concurrent deep venous obstruction, eventually combined with resolution of the same drainage impediment. Nevertheless, additional investigations are needed to confirm safety and efficacy of superficial venous reflux suppression in relieving signs and symptoms associated with the deep venous obstruction.

[Benfor B, Peden EK. A systematic review of management of superficial venous reflux in the setting of deep venous obstruction. *J Vasc Surg Venous Lymphat Disord.* 2022 Jan 20:S2213-333X(22)00003-8].

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Domain 4; Statement 2

STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 04, Statement 02

“Patients with superficial venous insufficiency and deep venous reflux might be candidate for superficial venous treatment, yet an expert evaluation of the specific case is needed .”

SELECTED REFERENCES

1. Jibiki M, Inoue Y, Terasaki H, et al. The effect of short saphenous vein stripping in patients with deep venous reflux. Ann Vasc Dis. 2013;6(3):612-6.
2. Puggioni A, Lurie F, Kistner RL, Eklof B. How often is deep venous reflux eliminated after saphenous vein ablation? J Vasc Surg. 2003 Sep;38(3):517-21.
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identified LITERATURE BIAS

Heterogeneity in the study populations.
Long follow up assessment.

SUGGESTED NEXT LINES OF RESEARCH

Deep venous treatment timing after/before superficial venous reflux suppression
Potential mechanisms for the development of venous insufficiency and CVD due to hypoxia and apoptosis of the vein wall