

Addition of surgical correction to compression therapy reduced recurrences in chronic venous leg ulceration

Gohel MS, Barwell JR, Taylor M, et al. Long term results of compression therapy alone versus compression plus surgery in chronic venous ulceration (ESCHAR): randomised controlled trial. *BMJ*. 2007;335:83.

Clinical impact ratings: GIM/FP/GP ★★★★★☆ Hematol/Thrombo ★★★★★☆

QUESTION

In patients with chronic venous leg ulceration, is surgical correction plus compression better than compression alone for increasing ulcer healing and reducing recurrence?

METHODS

Design: Randomized controlled trial (ESCHAR [Effect of Surgery and Compression on Healing And Recurrence]).

Allocation: Unclear.*

Blinding: Unblinded.*

Follow-up period: 3 years for ulcer healing; 4 years for ulcer recurrence.

Setting: Specialist nurse-led leg ulcer clinics in 3 vascular centers in southwestern England, United Kingdom.

Patients: 500 patients (mean age 73 y, 58% women) with an open ($n = 341$) or recently (≤ 6 mo) healed ($n = 159$) ulceration between knee and malleoli of > 4 weeks' duration; an ankle-brachial pressure index ≥ 0.85 ; and superficial deep venous reflux on duplex scanning. Exclusion criteria were inability to perform duplex scanning or to have compression or surgical therapy, deep venous occlusion, and malignant ulceration.

Intervention: Surgery plus compression therapy ($n = 242$) or compression therapy alone

($n = 258$). Patients with reflux at the saphenofemoral junction or long saphenous vein had saphenofemoral junction disconnection, stripping of the long saphenous vein to below the knee, and calf varicosity avulsions. Patients with reflux in the short saphenous vein had saphenopopliteal junction disconnection and calf varicosity avulsions. Compression therapy consisted of weekly multilayered compression bandaging (Smith and Nephew, Hull, England, UK), which aimed for 40 mm Hg at the ankle and graduated to 17 to 20 mm Hg at the upper calf for those with open ulcers. Patients with healed ulcers had daytime class 2 elastic stockings (Medi, Hereford, England, UK).

Outcomes: Ulcer healing (complete re-epithelialization of the leg) and recurrence (any breakdown of epithelium between knee and malleoli after healing occurrence).

Patient follow-up: 89% (intention-to-treat analysis).

MAIN RESULTS

At 3 years, groups did not differ for healing rates (93% in the surgery-plus-compression group and 89% in the compression-alone group, $P = 0.74$). At 4 years, ulcer recurrence rates were lower in the compression-plus-surgery group than in the compression-alone group (Table).

CONCLUSION

In patients with chronic venous ulceration, adding surgery to compression therapy did not increase ulcer healing but did reduce recurrence.

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*See Glossary.

Surgery plus compression vs compression therapy alone for chronic venous leg ulceration†

Outcome at 4 years	Surgery + compression	Compression	RRR (95% CI)	NNT (CI)
Ulcer recurrence	31%	56%	62% (35 to 73)	3 (3 to 5)

†Abbreviations defined in Glossary. RRR, NNT, and CI calculated from data in article.

COMMENTARY

The increasing frequency and financial burden associated with venous leg ulcers negatively affect quality of life (1-3). Additionally, once a person develops a venous leg ulcer, the likelihood of recurrence is estimated to be as high as 7 in 10 (3, 4). The mainstay of treatment has been compression therapy, with multilayer wraps supplanting single-layer dressings as the method of choice. After healing, compression stockings are the most common choice, but adherence to a regimen of compression hosiery is often poor. This is probably because elderly patients with limited joint mobility have difficulty donning the tight garments (5). Recent studies suggested that surgical intervention addressing the superficial venous system (stripping and varicosity avulsion) might be a promising way forward in addressing the cause of the problem and thereby reducing recurrence (6); Gohel and colleagues provide further evidence to support this contention.

Although the groups did not differ substantially for healing rates in this trial, the compression-alone group had twice the number of recurrences, and the compression-plus-surgery group had a slightly less impressive (but still substantial) increase in the number of ulcer-free days at up to 3 years after healing.

The authors point out, and rightly so, that this study has real-life confounders, such as failure to turn up for procedures and likely problems with adherence to preventive care regimens (the latter issue was

not measured as well as one might expect). Nonetheless, the intention-to-treat analysis, relatively long follow-up, and large sample size make this a compelling case for a combined approach to successfully healing these wounds and keeping them healed.

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References

- Weingarten MS. State-of-the-art treatment of chronic venous disease. *Clin Infect Dis*. 2001;32:949-54.
- Robson MC, Cooper DM, Aslam R, et al. Guidelines for the treatment of venous ulcers. *Wound Repair Regen*. 2006;14:649-62.
- Grey JE, Harding KG, Enoch S. Venous and arterial leg ulcers. *BMJ*. 2006;332:347-50.
- Simon DA, Dix FP, McCollum CN. Management of venous leg ulcers. *BMJ*. 2004;328:1358-62.
- Nelson EA, Harper DR, Prescott RJ, et al. Prevention of recurrence of venous ulceration: randomized controlled trial of class 2 and class 3 elastic compression. *J Vasc Surg*. 2006;44:803-8.
- Barwell JR, Davies CE, Deacon J, et al. Comparison of surgery and compression with compression alone in chronic venous ulceration (ESCHAR study): randomised controlled trial. *Lancet*. 2004;363:1854-9.