

Venous leg ulcers: where does surgery fit in?

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Venous leg ulcers are painful, malodorous sores which impair quality of life and are difficult to treat [1]. They affect 1.7% of the elderly population in the UK at a cost to our National Health Service of around £ 600 million/year [2,3]. Compression is the key to treatment and can be delivered successfully in the community by trained leg ulcer nurses using four-layer bandaging (4LB) [4,5]. Venous ulcers are caused by high venous pressures sustained throughout the day due to venous disease, obesity or immobility associated with arthritis or old age itself. Superficial venous incompetence, the usual cause of varicose veins, can be detected in the vast majority of patients with venous ulcers and is a potentially correctible cause of venous hypertension [6]. The ESCHAR trial has been the only adequately designed study to evaluate superficial venous surgery in patients with leg ulcers. Most previous trials either ignored the role of compression therapy or compared surgery with compression which is pointless as both are effective treatments that should be complementary [6].

The ESCHAR trial clarifies the role of superficial venous surgery in patients willing to consider an operation [6]. The long-term results confirm no significant effect on initial ulcer healing in patients being treated by 4LB compression, but the frequency of recurrence, which otherwise occurs in a quarter of patients each year, is almost halved. This beneficial effect is most obvious in patients who have incompetence affecting only the superficial veins or those with "segmental" deep venous incompetence. The authors' use of "isolated superficial", "segmental deep" and "total deep" incompetence is unfortunate as most "segmental deep" incompetence is reversed blood flow within the common femoral or popliteal vein emptying into the incompetent long or short saphenous vein; valve failure is largely confined to the superficial veins [7].

That superficial venous surgery reduced ulcer recurrence in patients with "total deep" incompetence is perhaps surprising, but there is evidence that deep venous function is improved by ablating incompetent superficial veins [8]. This does not mean that all patients with combined superficial and deep incompetence would benefit from superficial surgery [7]. As duplex imaging describes the anatomy of venous disease,

but provides little information on venous function, a reliable assessment of venous function is required to guide whether surgery is indicated. We use ambulatory venous pressures (AVP) with a narrow tourniquet to obstruct the superficial veins, predicting the effect of surgery [7]. Surprisingly few surgeons use AVP measurements, the most reliable measure of venous function, presumably as they are reluctant to perform foot vein cannulation.

A history of deep vein thrombosis is surprisingly found in only 10% of leg ulcer patients and in just a third of those with deep venous incompetence [5]. The efficacy of 4LB in healing leg ulcers is not influenced by the underlying venous abnormality [9] and achieves complete ulcer healing in a mean of 7–8 weeks [5]. There is no evidence that superficial venous surgery accelerates healing in either the ESCHAR or a in a previous similar trial [6,10]. However, there is also no need to delay appropriate venous surgery in patients with healthy granulating leg ulcers with no evidence of infection.

Sadly, any suggestion that surgery is the solution to venous ulceration must be seen as excessive optimism! The ESCHAR study recruited from specialist hospital-based leg ulcer clinics. Those of us involved in community leg ulcer care for elderly people know that many such patients refuse to attend hospitals [5,11]. These are not patients likely to accept venous investigations or surgery. Even amongst the patients attending a hospital clinic that were screened for the ESCHAR trial, over a third refused randomisation with a further 20% refusing surgery despite consenting to the study [6]. Under half the patients we see in the community would attend for investigation; perhaps a third would consider venous surgery. Simple pinch skin grafting that can be done by leg ulcer nurses under local anaesthetic in community clinics is more widely accepted [12].

So what should be done for leg ulcer patients? Firstly, they should be referred to a specialist leg ulcer service able to apply 4LB for appropriate patients. Any such service should be able to identify arterial disease and involve a local vascular surgeon to manage this. Venous investigations are required in patients fit to consider surgery or, in the future, novel treatments such as microfoam sclerotherapy or endovenous laser. Referral to the Vascular Surgeon does not need to be delayed until the ulcer has healed, and nor should a history of deep vein thrombosis be a deterrent. Despite renewed enthusiasm for perforator surgery in the form of subfacial endoscopic perforator surgery, there remains little evidence that perforators are important in venous ulceration.

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Future research would be better focussed on identifying patients at risk of ulceration in order to prevent rather than treat. Superficial venous surgery and compression will almost certainly both have a role in ulcer prophylaxis.

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From the Editor

Synopsis: 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.

In this randomized controlled trial of 500 patients with leg ulcers it has been shown that compression therapy plus surgery compared to compression therapy alone had no effect on the probability of ulcer healing, but decreased the rate of ulcer recurrence at 4 years (RBI 85%, NNT 3).

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