The role of compression after endovenous ablation of varicose veins

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ABSTRACT

Objective: The aim of this review was to identify the evidence regarding the optimal duration of compression therapy after endovenous ablation of varicose veins.

Methods: Electronic databases were searched for studies assessing the use of compression after endovenous ablation in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. The primary outcomes for this study were pain score and complications. Secondary outcomes were time to full recovery, quality of life score, leg circumference, bruising score, and compliance rates.

Results: Following strict inclusion and exclusion criteria, five studies were included in our review, including a total of 734 patients. The short-duration compression therapy ranged from 4 hours to 2 days, whereas the longer duration ranged from 3 to 15 days. A single study showed a better outcome in terms of complications with a short compression therapy. A single study showed a benefit to pain and quality of life with extended compression therapy, whereas the others did not. There was no significant difference in terms of bruising, recovery time, and leg swelling.

Conclusions: Our review showed that there is no evidence for the extended use of compression after endovenous ablation of varicose veins. (J Vasc Surg: Venous and Lym Dis 2018;■:1-5.)

Keywords: Compression; Venous disease; Endovenous laser therapy; Endovenous ablation; Radiofrequency ablation

Varicose veins are a common problem worldwide. However the prevalence of varicose veins is higher in developed countries. These are associated with reduced quality of life (QOL), deteriorating over time as some patients progress to development of ulcerations.[1-3] The literature and recent guidelines recommend endovenous ablation, which includes endovenous laser therapy and radiofrequency ablation, as the "gold standard" of therapy.[4] It is common practice to advise patients to wear compression stockings or bandages after treatment, with the intention of reducing pain, swelling, and bruising. A recently published survey showed considerable variation in the type and duration of compression employed, with no consensus as to best practice.[5] Many patients complain about wearing compression stockings because of discomfort, potentially leading to low compliance. The aim of this review was to identify the evidence regarding the optimal duration of compression after endovenous ablation of saphenous reflux.

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METHODS

Search methodology for identification of relevant studies. Searches of PubMed, MEDLINE, and Embase were performed using search terms including endovenous ablation, radiofrequency ablation, endovenous laser therapy, compression bandage, and stockings to identify articles dealing primarily with the use of compression after endovenous ablation of varicose veins. In addition, the references cited in selected articles were reviewed for any further relevant available studies.

We included only randomized controlled trials comparing different durations of the compression regimen after endovenous ablation. We excluded abstracts, case reports, review articles, and editorials without original data. Articles that assessed compression stockings in non-endovenous ablation procedures were excluded. The systematic review was performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement.[6] Therefore, all included studies were assessed for inclusion on the basis of their topic, type of study, method, number of patients included, and availability of their original results.

Primary and secondary outcomes. All studies that met the set criteria were thoroughly reviewed and assessed for methodologic quality. The reviewers independently extracted data using a standardized table. This was done in duplicate to increase accuracy. If there was any difference in the extracted data, we resolved it by consensus. Data extracted included primary and secondary outcome as well as year of publication, number of patients included, and duration of follow-up. The

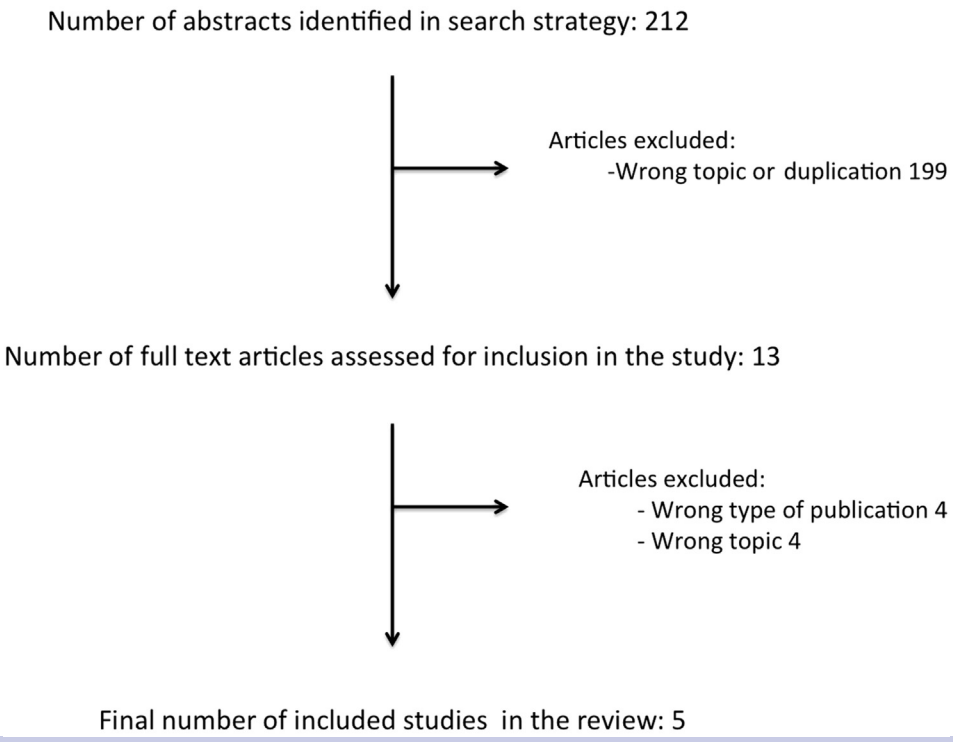

Fig. Flow sheet of results of search strategy with inclusion and exclusions following searches and screening.

primary outcomes for this study were pain score and complications. Secondary outcomes were time to full recovery, QOL score, leg circumference, bruising score, and compliance rates. Both primary and secondary outcomes were compared at the end of the long-duration compression period.

RESULTS

There were 212 articles and abstracts identified using our search strategy. After screening of the contents of the abstract, 13 full-text articles underwent assessment for eligibility and quality inspection of methodology. Following the assessment, five articles were found to be eligible for the review (Fig). All five randomized controlled trials excluded any adjuvant therapy to varicose veins, such as phlebectomies or sclerotherapy. The methodologic quality of the trials was generally good, with minimal risk of bias (Table I).

Compression regimen and compliance. We included five studies with a total of 734 patients. They all compared short- vs long-duration compression therapy after endovenous ablation (Table II). The short-duration compression therapy ranged from 4 hours to 2 days, whereas the longer duration ranged from 3 to 15 days. Some authors used bandages for the first 24 hours followed by stockings, whereas others used stockings straight away.

Compliance with stockings was mentioned in three randomized controlled trials. None of them managed to have full compliance in the long-duration compression groups, with a dropout rate of 6% to 13%.

Pain and bruising scores. Post-treatment pain scales were used in all five studies (Table III). Bakker et al reported less pain at 1 week in patients having ongoing compression compared with pain in those with only 2 days of compression. All the other studies did not find any significant difference in pain score at the end of the long-duration compression period.

Two studies reported on bruising scores, and both found no significant difference between short- and long-duration groups. Ayo et al used a bruising scale of 0 to 5 (0, no bruising; 5, severe), whereas Ye et al used a scale based on anatomic extent of bruising (1, limited to surgical sites; 2, involving lower third of calf; 3, involving more than lower third of calf).

QOL and time to full recovery. Four studies specifically looked into QOL scores (Table III). Bakker et al found significant differences at 1 week in the domains of physical function and vitality (36-Item Short Form Health Survey), with those in compression for only 2 days reporting worse QOL. All the other domains of the 36-Item Short Form Health Survey assessed did not show any difference. The four other papers did not show any QOL difference between short and long duration of compression.

Three studies measured recovery time. Krasznai et al did not detect any difference in time to full recovery after endovenous ablation in those who had short- or