APPENDIX

(with permission)

Endovenous therapies of lower extremity varicosities: A meta-analysis

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Background

Minimally invasive techniques such as endovenous laser therapy, radiofrequency ablation, and ultrasound guided foam sclerotherapy are widely used in the treatment of lower extremity varicosities. These therapies have not yet been compared with surgical ligation and stripping in large randomized clinical trials.

Methods

A systematic review of Medline, Cochrane Library, and Cinahl was performed to identify studies on the effectiveness of the four therapies up to February 2007. All clinical studies (open, noncomparative, and randomized clinical trials) that used ultrasound examination as an outcome measure were included. Because observational and randomized clinical trial data were included, both the Meta-analysis of Observational Studies in Epidemiology (MOOSE) and Quality of Reporting Of Meta-analyses (QUOROUM) guidelines were consulted. A random effects meta-analysis was performed, and subgroup analysis and meta-regression were done to explore sources of between study variation.

Results

Of the 119 retrieved studies, 64 (53.8%) were eligible and assessed 12,320 limbs. Average follow-up was 32.2 months. After 3 years, the estimated pooled success rates (with 95% confidence intervals [CI]) for stripping, foam sclerotherapy, radiofrequency ablation, and laser therapy were about 78% (70%-84%), 77% (69%-84%), 84% (75%-90%), and 94% (87%-98%), respectively. After adjusting for follow-up, foam therapy and radiofrequency ablation were as effective as surgical stripping (adjusted odds ratio [AOR], 0.12 [95% CI, -0.61 to 0.85] and 0.43 [95% CI, -0.19 to 1.04], respectively). Endovenous laser therapy was significantly more effective compared with stripping (AOR, 1.13; 95% CI, 0.40-1.87), foam therapy (AOR, 1.02; 95% CI, 0.28-1.75), and radiofrequency ablation (AOR, 0.71; 95% CI, 0.15-1.27).

Conclusions

In the absence of large, comparative randomized clinical trials, the minimally invasive techniques appear to be at least as effective as surgery in the treatment of lower extremity varicose veins. (J. Vasc. Surg. 2009; 49:230-9).