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Venous leg ulcers and prevalence of surgically correctable reflux disease in a national registry

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Abstract

Background: Chronic venous disorders are common, with varicose veins occurring in ~40% of the population. Venous leg ulcers affect 1% to 2% of the population, with the prevalence increasing $\leq 4\%$ for those aged >65 years. Both conditions are expensive and together are responsible for $\leq 2\%$ of the annual healthcare budget expenditure of Western societies. The ESCHAR (effect of surgery and compression on healing and recurrence) and EVRA (early venous reflux ablation) trials demonstrated that surgical correction of superficial venous reflux reduced ulcer recurrence, resulted in faster healing times (EVRA), and was proved cost-effective. Largescale data regarding patients with chronic venous leg ulcers presenting to venous centers with treatable superficial venous insufficiency has not been previously reported. Our study was designed to evaluate the percentage of patients with leg ulcers presenting to dedicated vein centers who were found to have surgically correctable superficial venous insufficiency.

Methods: The American Vein & Lymphatic Society Patient Reported Outcome Venous Registry began collecting data in 2014 and is one of two national registries focused on chronic venous disorders. The database was queried first for the presence of an ulcer using the CEAP (clinical, etiologic, anatomic, pathophysiologic) classification (C6 status). These de-identified data were further correlated by crossing the number of ulcers for the same limb using the revised venous clinical severity score (rVCSS). The demographics, index duplex ultrasound details, and rVCSS features for ulcer duration and compression use were analyzed. Once the presence of an ulcer had been validated by CEAP and rVCSS, the population was divided into groups according to the ultrasound-reported anatomic pathology (eg, normal, reflux, obstruction, reflux plus obstruction). The query was directed toward all patients seeking a venous evaluation at participating centers from January 2018 through January 2022.

Results: More than 270,000 unique patient records were reviewed. Of the 270,000 records, 163,027 (60%) had had duplex ultrasound scans available, for 1794 unique patients (1879 limbs), representing 1.1% with a leg wound. Of these patients, 55.4% were men and 44.6% were women. Group S included patients with isolated superficial pathology (n = 1291; 68.7%). Group M included patients with mixed superficial and deep pathology (n = 238; 12.7%). Group D included patients with isolated deep vein pathology (n = 58; 3.1%). Finally, group N included patients with leg wounds but no venous pathology (n = 292; 15.5%). The rVCSSs for groups S and M were significantly higher than those for group N. In group S, the dominant patterns involved the great saphenous vein (GSV) above the knee (54.8%), the small saphenous vein (30.7%), and the anterior accessory GSV (14.4%). The frequency of single, double, and triple axial vein reflux identified 1.45 vessels eligible for ablation treatment per limb. In group M, the dominant patterns involved the GSV above the knee (61.7%), the small saphenous vein (26.2%), and the anterior accessory GSV (12.1%), for 1.52 axial segments per limb. Of

the 84.4% of venous ulcer patients, duplex ultrasound analysis revealed that 97% of this large subset had had surgically correctable disease.

Conclusions: The American Vein & Lymphatic Society Patient Reported Outcome Venous Registry demonstrated that 85% of the leg wounds in the present study were venous in origin and 97% possessed surgically correctable disease. Our findings support early referral to dedicated vein centers with appropriate venous reflux management as a part of the multidisciplinary team caring for patients with venous leg ulcers.

Keywords: AVLS; PRO; Vein Registry; Venous leg ulcer; Wound care.

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