1,320-nm and 810-nm Lasers Compared in Saphenous Vein Tx

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LAKE BUENA VISTA, FLA. — Endovenous saphenous-vein obliteration with a 1,320-nm laser produces results comparable to those of radiofrequency, the preferred method, and better than those of 810-nm laser treatment, Girish Munavalli, M.D., said at the annual meeting of the American Society for Laser Medicine and Surgery.

Treatment with an 810-nm-diode laser uses that wavelength’s hemoglobin specificity to essentially boil blood and transfer the heat to the vein wall, shrinking it. Radiofrequency (RF) treatment works by heating the vein wall to contract collagen. The 1,320-nm laser uses the water specificity of that wavelength to heat water and collagen in the vein wall to cause contraction, said Dr. Munavalli, a dermatologic surgeon affiliated with Johns Hopkins University, Baltimore.

In this retrospective study, 36 patients were treated with the 810-nm EVLT system (Diomed Inc.), 98 were treated with the 1,320-nm CTEV system (CoolTouch Inc.), and 224 were treated with RF using fast pullback at 90° C. The Closure Plus catheter (VNUS Medical Technologies Inc.) was used to facilitate closure in RF procedures. Endovenous occlusion was performed with single puncture under Duplex-guided tumescent anesthesia.

The 810-nm-laser procedure was performed using manual pullback; the 1,320-nm-laser procedure was performed using automatic pullback (1 mm/sec); and the RF procedure was guided by temperature feedback from the embedded thermocouple feedback loop. CoolTouch, Diomed, and VNUS provided discounted use of equipment for the study. Lead author Robert A. Weiss, M.D., receives consulting fees from CoolTouch and VNUS.

All treatments were evaluated using Duplex ultrasound at 1 day, 6 weeks, and 6 months post-treatment.

Using the 810-nm laser, “we saw thickened vein walls on Duplex ultrasound,” said Dr. Munavalli, also of the University of Maryland, Baltimore. With RF, “we frequently saw a double wall within the vein.” With the 1,320-nm laser, “we actually observed complete retraction of the vein wall and disappearance of the lumen.” At 1-year follow-up, occlusion rates were 86%, 98%, and 92% for the 810 nm laser, 1,320-nm laser, and RF procedures, respectively. At 2 years, the rates were 82%, 96%, and 90%.

We observed complete retraction of the vein wall and disappearance of the lumen.

DR. MUNAVALLI

The 810-nm Diomed EVLT system burns holes into an ex-vivo segment of vein in the absence of blood.

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Discussion

Jennifer C. Cather, MD and Richard G.B. Langley, MD, FRCP

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