ORIGINAL ARTICLES

Low-Level Laser-Assisted Liposuction: A 2004 Clinical Study of its Effectiveness for Enhancing Ease of Liposuction Procedures and Facilitating the Recovery Process for Patients Undergoing Thigh, Hip, and Stomach Contouring

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Introduction: *The purpose of this IRB approved, multicenter, partially double-blind study was to determine the effectiveness of low-level laser-assisted liposuction in decreasing the patients' degree of postoperative discomfort, reducing swelling, enhancing wound healing at surgical entry points, decreasing the use of recovery medications for pain management, facilitating fat extraction for the surgeon, enhancing the emulsification of extracted fat, and decreasing surgical time spent to obtain optimal results.*

Materials and Methods: *The Erchonia EML, 635-nm, 14-mW dual-diode low-level laser was used to irradiate the target tissue for 12 minutes after infiltration of tumescent fluid.*

Results: *Of the 36 test-group patients who received laser treatment, 75% met their major success criteria compared with 32% of the 34 placebo-group patients who received "fake" treatment. Success criteria were defined as at least a 30% difference between groups. Forty-three percent more of the test subjects than placebo subjects met success criteria, exceeding the target by 13%.*

Discussion: *The Erchonia EML Laser is an effective device for assisting liposuction procedures with low-level laser therapy. It significantly enhances the ease of performing liposuction procedures; reduces the time in surgery; enhances the ease of facilitating fat extraction; enhances the emulsification of extracted fat; facilitates the recovery process; decreases the patients' degree of postoperative discomfort, decreases swelling; and decreases the use of recovery medications for pain management for patients undergoing body contouring in the areas of the thighs, hips, and stomach.*

Received for publication July 12, 2004.

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The Erchonia EML Laser (Erchonia Medical Inc, Mesa, Ariz) was designed to administer low-level laser therapy (LLLT). It had been hypothesized that LLLT may reduce pain and promote nerve regeneration through anti-inflammatory and immune-enhancement properties of the therapy. Previous research, including 2 unpublished studies by R. Amy, S. Shanks, and K. Slattery, indicated LLLT to be a potentially safe and effective means of reducing pain.[1–8] This clinical study was designed to evaluate the potential of the Erchonia EML Laser in offering a novel means of delivering LLLT to reduce pain and enhance healing after liposuction.

Neira et al[9] and Neira[10] first documented with scanning electron microscopy (SEM) and magnetic resonance imaging that the Erchonia EML Laser could emulsify fat and accelerate wound healing after liposuction procedures. At the AACS 20th Annual Scientific Meeting in Florida on January 2004, Lim et al[11] repeated Neira's work and presented their results on 75 consecutive patients with the Erchonia EML Laser. Clinical observations included less pain and discomfort, less swelling and bruising, and surgical extraction of fat made easier, with quality of fat more liquid and emulsified. Lim et al[11] compared