

Endermologie® (the LPG® technique) and cellulite: my clinical practice

B Kinney, Los Angeles, USA

Endermologie® was originally developed by Louis Paul Guitay in the 1980's for his personal use to aid massage in the physiotherapy of scar contracture. Introduced into widespread use in France in 1986 and in the US in 1996, their use was initially met with some skepticism due to a lack of supportive clinical trials by practicing physicians. Daver¹ and Cumin² in France reported early success with the use of the device in 1991 and 1996 respectively before its use in the US after 1996 by Ersek,^{3,4} Fodor^{5,6} and others, including myself.^{7,8} In the US, the original emphasis was on the reduction of fat by its effects on fat metabolism in addition to the reduction of cellulite seen by clinicians. At that time, other proposed but unsubstantiated mechanisms included increased lymphatic and blood flow. After a series of research verifying these claims¹⁰⁻¹⁶ initial skepticism gave way to general acceptance by a significant portion of plastic surgeons in the US. Over 11 000 machines are in use worldwide and 1 000 machines in the US since FDA clearance for marketing in April 1998. This is possibly a greater number than made by all other companies combined. There are very few studies in the literature on the use of other machines.

Benefits have been stated as an alternative to liposuction, a pre- and post-operative adjunctive therapy to lipoplasty and as an interoperative aid to dispersing the tumescent wetting solution. In 1997 my clinic completed two clinical trials with blinded observers of unilateral treatment of 10 patients, each on one side of the body from the axilla to the calf with the new, untested Luxar-ESC Silhouette device for two treatments a week for 8 weeks. We were able to determine by examination which side served as a control and which side had been treated in 10/10 patients in both trials and measurements confirmed a reduction in circumference of the treated extremity compared to the control. Later that year we obtained an LPG ES1 device that has two active, rolling heads, bi-directional movement, a feedback pressure control mechanism and a number of other technological improvements over the ESC device. We now have almost 4 years experience in hundreds of patients. We have employed four technicians in the clinic; one slightly preferred using the Silhouette device while three strongly preferred the Endermologie device and two refused to use the Silhouette device.

Over 2 years ago we discontinued using the Silhouette device. Only a few patients preferred its firmer, single-roller, treatment mechanism that lacks a feedback pressure sensor, but many patients experienced pain and developed significant bruising after treatment. Early post-operative treatment was not possible and the lack of a small treatment head eliminated facial therapy. If one machine was presented as the 'best' treatment there was general acceptance by the patient. However, in side-by-side comparisons of Endermologie and Silhouette devices without prejudicial comments, over 75% of the patients choose the LPG technique for their therapy.

In the first 100 patients treated with Endermologie who did not present for body contouring by liposuction 50 were highly satisfied, 30 were somewhat satisfied and 20 were dissatisfied. Five to 10 percent of these patients may choose to undergo liposuction after the treatment, even if they are satisfied. All patients are highly motivated initially and experience increased redness and a sense of relaxation after treatment and most report increased thirst. About 20% of the patients see results within 2–3 treatments, usually due to early edema; about – see results by 10–12 treatments and the rest later in the course of 2 weekly treatments for 8 weeks. Patients who do not experience results within 5–7 treatments (~ 30%) become impatient and are given extra education about the phenomenon of late response.

We offer postoperative treatment to all patients and about 30% enter a series of twice weekly treatments for 4–6 weeks starting 2 weeks postoperatively. Treatments are begun at level 1–2 in the surgical sites and as tolerated in other areas. It is our subjective assessment that the irregularities of edema, induration and contours are improved by the treatments, but no blinded, unilateral trials have been conducted to date in the postoperative setting. Almost 100% of these patients consider the treatment beneficial. We offer preoperative treatment to all patients, but few choose to wait for eight weeks of therapy before undergoing liposuction. The few that do, are either not suitable candidates for immediate liposuction due to overweight (generally >25 lbs), or prefer to try something less drastic to avoid surgery. We cannot find a clear advantage to preoperative therapy, however, we have no blinded clinical trials to report.

In our experience the Endermologie technique is highly operator dependent and successful in over 80% of patients as an alternative to and after liposuction. Excellent technique and psychological motivation by the therapist improves the results and active participation and cooperation by the patient is essential.

References

1. Daver J. A new instrument for the treatment of cellulite. *Med Au Fem* 1991; 39: 25.
2. Cumin MJ. The utilization of LPG technique during liposuction (185 cases studied). *J Esth Med Surg* 1996; 23: 91.
3. Ersek RA, Mann GE, Salisbury S, Salisbury AV. Noninvasive mechanical body contouring: a preliminary clinical outcome study. *Aesth Plast Surg* 1997; 21: 61–7.
4. Chang P, Wiseman J, Jacoby T, Salisbury AV, Ersek RA. Noninvasive body contouring (Endermologie) a one-year clinical outcome study update. *Aesth Plast Surg* 1998; 22: 145–53.
5. Fodor PB. Endermologie (LPG): does it work? *Aesth Plast Surg* 1997; 21: 68.
6. Fodor PB. Endermologie® and endermologie®-assisted lipoplasty update. *Aesth Surg J* 1998; 18.
7. Kinney BM. PSEF Devices and techniques committee, safety and efficacy reports: endermologie. *J Plast Reconstr Surg* 1997; 7: 1903.
8. Kinney BM. Discussion of a comparative trial of aminophylline cream and endermologie. *Plas Recon Surg* 1999; 104.
9. Adcock A, Paulsen S, Davis S, Nanney L, Shack RB.

Pearls from meetings

- Continuing medical education – analysis of the cutaneous and systemic effects of endermologie® in the porcine model. *Aesth Surg J* 1998; 18: 414.
10. McDaniel DH, Lord J, Ash K, Newman J, Zukowski M. Body contouring: a preliminary report on the use of the silhouette device for treating cellulite. *Aesth Surg J* 1998; 18: 22.
 11. Watson J, Fodor PB, Cutiffe B, Sayah D, Shaw W. Physiological effects of endermologie®. A preliminary report. *Aesth Surg J* 1999; 19: 27.
 12. Sasaki MD, York Robin CT, Romero N. Silhouette treatment for cellulite and body contouring presentation at the new horizons in cosmetic surgery – a paradigm. *Analysis* January 30, 1999.
 13. LaTrenta GS. Endermologie versus liposuction with external ultrasound assist. *Aesth Surg J* 1999; 19: 452.
 14. Dabb RW. A combined program of nutrition endermologie and small volume liposuction; a logical alternative. *Aesth Surg J* 1999; 19: 388.
 15. Strasser E. Is endermologie risk free? *Aesth Surg J* 1999; 19: 304.