

A Combined Program of Small-volume Liposuction, Endermologie, and Nutrition: A Logical Alternative

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***Background:** Over the past year, both the media and the professional literature have given significant attention to the inherent risks of large-volume liposuction procedures.*

***Objective:** A practice plan is presented that addresses the majority of concerns regarding the risks involved with large-volume liposuction procedures. An alternative approach that is safe and affordable and provides consistent results is described.*

***Methods:** Patients are first screened for nutritional and exercise patterns. The concept of a dietary program combined with exercise and repeated small-volume liposuction, with Endermologie following each procedure, is presented. Budgetary issues are reviewed. Liposuction procedures are performed in a traditional office setting through use of superficial syringe suctioning, local anesthesia, and infiltration solution. The maximum volume of total aspirate removed per procedure is arbitrarily set at 1500 mL. Endermologie is provided by an aesthetician postoperatively at 3 weeks and for at least 3 visits.*

***Results:** This alternative approach was used in 45 cases in 1997. There were no significant complications except for one small seroma, which required a single aspiration. All but two patients reported a high degree of satisfaction.*

***Conclusions:** A program incorporating complete medical evaluation, nutrition, exercise, small-volume liposuction, and Endermologie can be a sound alternative to large-volume procedures.*

Liposuction has become the most commonly performed aesthetic surgical procedure in the United States for patients between 35 and 50 years of age.¹ This procedure has gone through a continuous process of refinement that has included changes in cannula design and various infiltration techniques, as well as deep to superficial procedures and conventional to ultrasonic procedures.

As with many other evolving treatments, liposuction has expanded to include more aggressive approaches. This is evident in the increasing volumes that have been successfully aspirated under tumescent, and now ultrasonic, techniques. Frederick Grazer, MD,² recently described how "physicians have begun competitively pushing the envelope regarding the amount of fluid injected and dose of lidocaine." Along with the "pushed envelope," complications, including death, have occurred with an alarming frequency. The very factors that drive the surgeon to perform suctioning procedures in an office set-

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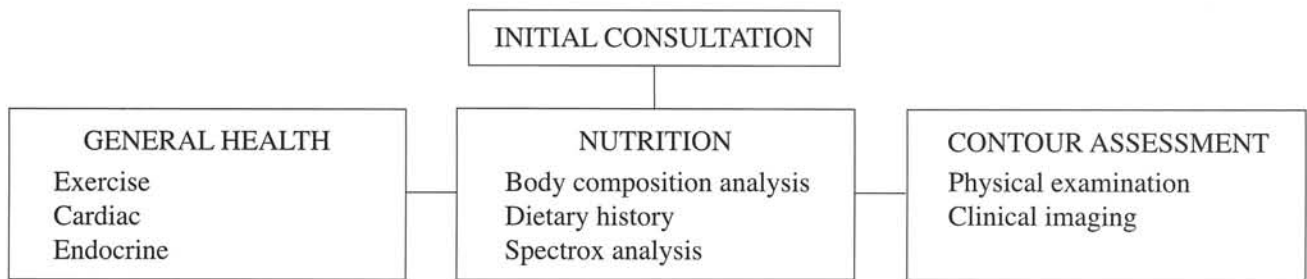


Figure 1. Initial consultation plan.

ting—lower cost and greater convenience for the patient—may in some instances compromise overall safety and results. In 1995, I developed a program of small-volume liposuction, Endermologie (LPG Endermologie USA, Fort Lauderdale, FL), and nutritional counseling that addresses many of these issues.

Methods

The program consists of repetitive small-volume liposuction procedures that are performed in the office, Endermologie treatments carried out in conjunction with each procedure, and continual monitoring of the patient's nutritional and exercise status. The patient agrees on entering this program to attempt to achieve the body-contouring goals over a period of time.

The initial consultation consists of a general medical evaluation with a significant focus on nutritional behavior, exercise patterns, and endocrine factors. The patient's nutritional regimen is reviewed and evaluated for effectiveness. If the patient is in a well-established program, the evaluation continues; if not, the patient is referred to one of several nutritionists in the area. When appropriate, hormonal assays and Spectrox (SpectroCell Laboratories, Inc., Houston, TX) analyses are obtained. Weight and body composition analysis, performed through use of the Tanita body composition scale (Tanita Corporation of America, Inc., Arlington Heights, IL) and digital photographic analysis, are recorded at the time of consultation (Figure 1). After these data are obtained, careful prioritization of body-contouring goals is established with the aid of computer imaging (Figure 2). Computerized photography allows the patient to designate treatment "zones" to be addressed according to the order of the patient's priorities. The patient's evaluation is reviewed and placed in a treatment algorithm, and a tentative treatment schedule and budget are set (Figure 3).

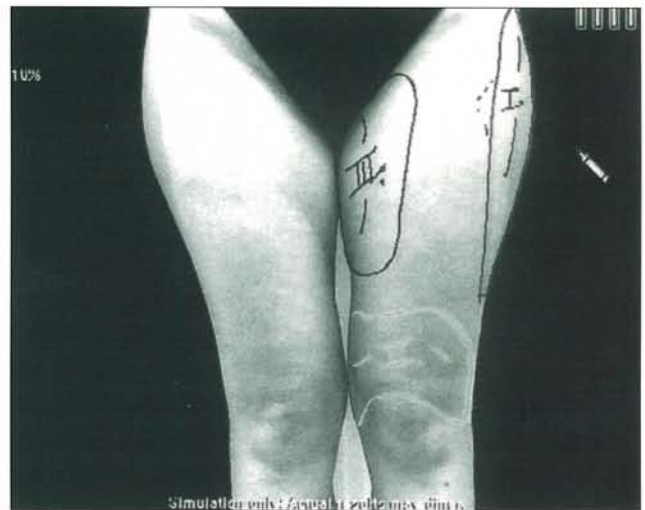


Figure 2. Contouring prioritization with computer imaging.

The patient then undergoes the first session of small-volume liposuction performed in the office. The patient is given routine preoperative instructions. Diazepam 5 mg, cefuroxime 250 mg, and arnica montana are given 30 minutes before the procedure. The skin is prepped with povidone-iodine 10% solution, and entry incisions are injected with a solution of 0.25% bupivacaine with epinephrine. The subcutaneous area is then infiltrated with a standard solution consisting of 1 L of Ringer's lactate and 50 mL of lidocaine with 1:200,000 epinephrine in anticipation of the use of a superwet technique.^{3,4} The maximum amount of infiltrate is 1500 mL. Superficial syringe suctioning is usually performed with a 2- or 3-mm Mercedes tip cannula (Byron, Tucson, AZ). A maximum of 1500 mL of total aspirate is removed.

Patients find the level of discomfort during this procedure to be tolerable. Small amounts of local anesthetic are injected directly, if necessary, and the patient is reassured

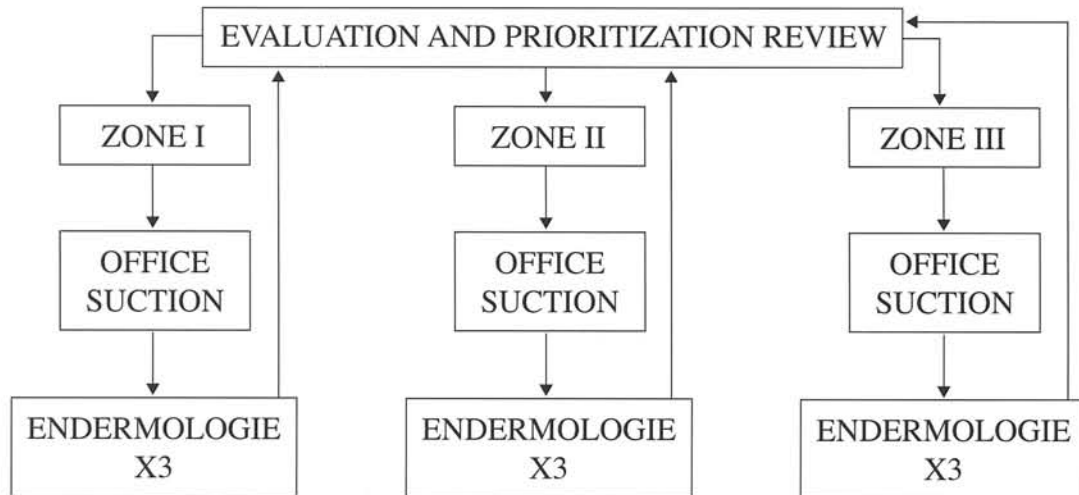


Figure 3. Treatment plan.

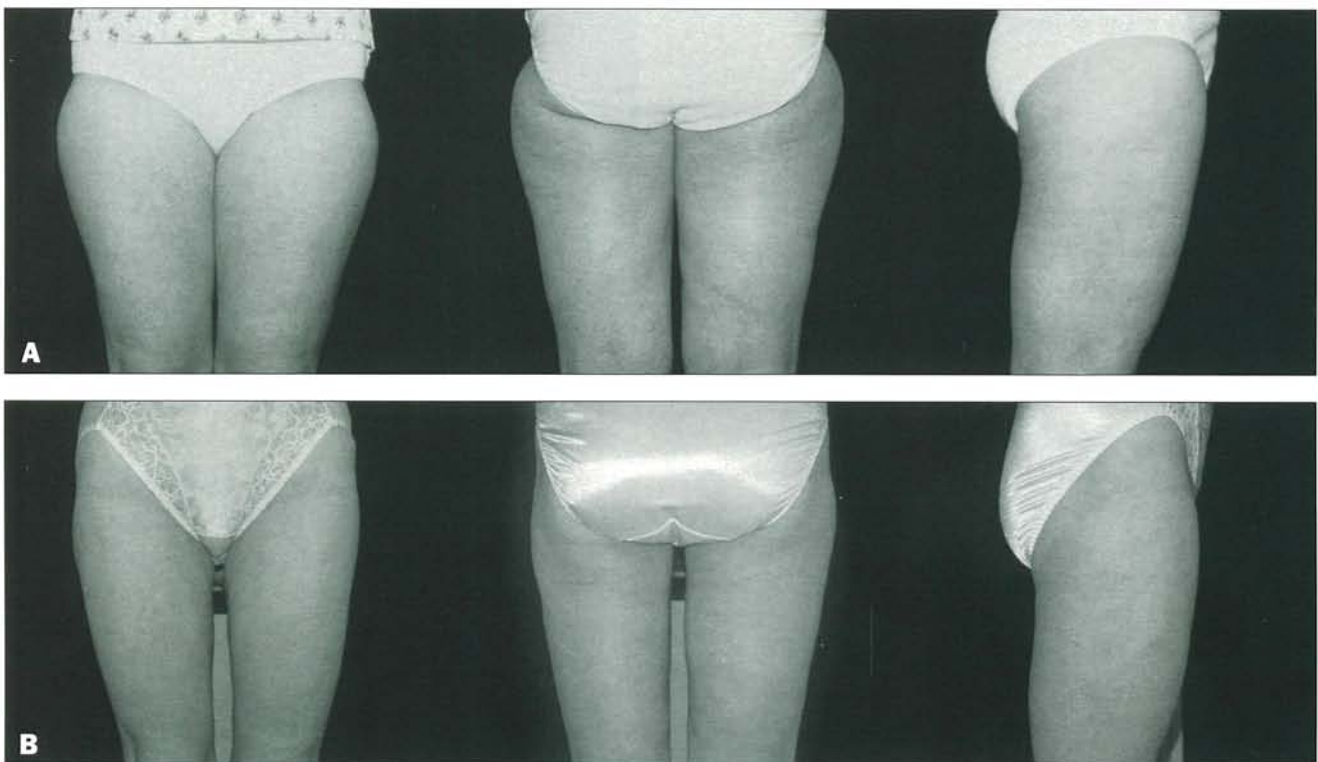


Figure 4. A, Preoperative views of a 50-year-old with systemic lupus erythematosus. B, Postoperative results after 2 sessions over 8 months.

that the procedure will be of short duration. At the completion of the procedure, a compression garment is routinely applied. The patient is allowed to change the garment in 24 hours and can return to work within 48 hours and to full activity in 1 week. The patient is seen weekly and must wear compression for 3 weeks. At 3 weeks, the patient begins a series of at least 3

Endermologie treatments, which are limited to the area involved in the liposuction. The first 3 treatments are included with the lipectomy fee.

This sequence of nutritional surveillance, small-volume liposuction, and Endermologie is repeated at 3- to 4-month intervals until the patient meets the goal that was

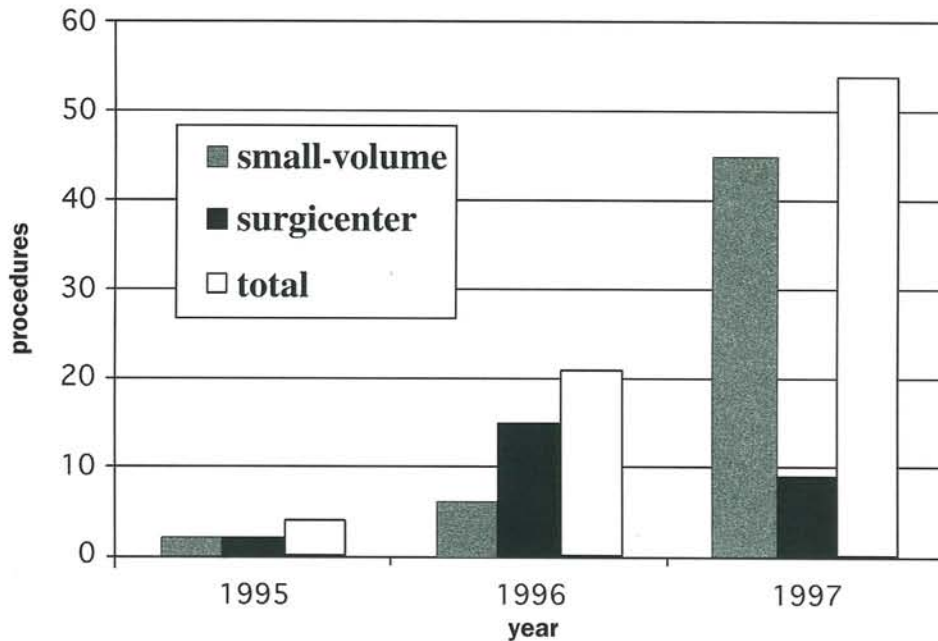


Figure 5. Frequency of author's liposuction procedures from 1995 to 1997.

set. Interim evaluations of compliance with exercise and diet, including body composition analysis, are encouraged and are provided at no additional charge.

Results

From March 1995 through December 1997, a total of 51 procedures in 24 patients were completed with this approach. Five patients had 3 procedures each, 17 patients had 2 procedures each, and 2 patients had 1 procedure each. Patients ranged from 20 to 57 years of age (Figures 4 and 5). Patients reported that concerns about safety and cost motivated them to elect this approach.

Patients were interviewed 2 months after the completion of the program and were questioned about the success or failure of their treatment. All but 2 patients reported satisfaction with the program, based on fulfillment of their initial treatment goals. When questioned, patients reported that the safety of the approach, the ability to participate in the prioritization process with computer imaging, and the attentiveness of the staff to their progress—as demonstrated by repeated body composition analyses—were significant factors in their success. Both of the patients who considered themselves “treatment failures” had gained weight and were noncompliant with the original dietary and exercise programs; this was clearly documented by the repeated body composition analyses. The objective demonstration of these param-

eters seemed to deter patient dissatisfaction with the practice. Postoperative complications included 1 small seroma, which responded to a single aspiration, and 2 minor contour deformities of the abdomen.

Discussion

This approach provides a total body-contouring program that is both safe and affordable and provides consistent results, without the necessity of “pushing the envelope” to achieve the patient’s body-contouring goals.

On January 26, 1998, plastic surgeons were urged by the American Society of Plastic and Reconstructive Surgeons to “exercise caution in lipoplasty procedures.”⁵ Blood loss, hypovolemia, infection, thrombosis, fat emboli, intra-abdominal injury, skin necrosis, and pulmonary edema are all well-known potential complications of suction lipectomy. The potential for lidocaine toxicity was clearly described by Grazer² in 1997. He described the problem as “multifactorial”; obesity, endocrine abnormalities, smoking, drug interactions, and lidocaine doses above 55 mg/kg all are factors. It is obvious that limiting the volumes of infiltrate and aspirate minimizes the risks related to local anesthetic level, volume shifts, and hypothermia.

It has been established that lidocaine doses greater than 7 mg/kg are safe; however, doses greater than this were

unnecessary in this series of patients. Trott⁶ and others have shown that intravenous crystalloid is unnecessary when small-volume (<4 L) liposuction is performed through use of the superwet technique. In addition, both short-term and long-term analgesia requirements are reduced in small-volume liposuction patients. Adding further to patient safety is the initial evaluation that ensures the patient will be treated in a comprehensive and medically sound manner.

Endermologie has been used in my practice for 4 years, initially for body contouring, treatment of cellulite, and postoperative liposuction care in my skin-care center. During the first year, it became clear that the results of "nonsurgical" body contouring were quite limited and did not meet the expectations of either the patient or the physician. My staff and I believed, however, that Endermologie might be somewhat effective in the treatment of cellulite and that it improved the postoperative result of liposuction and diminished the need for revision. These observations are consistent with reports showing redistribution of fat in autologous grafting procedures and localized changes in perfusion and lymphatic flow but no obvious relocation of fat.⁷ The limited results from Endermologie alone led many of the patients to request surgery. It therefore made more sense to offer them small-volume liposuction and Endermologie in a structured "package" that would be more likely to achieve predictable results. In my opinion, postoperative Endermologie treatments maximized the result and offered the additional advantage of keeping the patient in communication with the practice and focused on long-term goals.

The program is affordable. Small-volume procedures can be easily carried out with oral sedation and local anesthesia in a simple office setting, eliminating the general anesthesia and facility fees. The average total fee savings to the patient is \$1200, which compares favorably with the cost of one procedure performed with anesthesia in a surgicenter. One approach is to divide the total fee for a "complete" large-volume procedure by the number of anticipated small-volume procedures. The repetitive nature of the program allows the patient to budget the number and frequency of the procedures according to his or her economic limitations. I charge a per-session fee that includes the procedure and 3 Endermologie treatments.

A significant benefit for the patient is the absence of downtime from work. Patients are usually scheduled for lipectomy on a Thursday or Friday and are able to return

to work (wearing a compression garment) on Monday. In my opinion, larger-volume liposuction requires significantly more total recovery time than that required for multiple small-volume procedures.

This approach, which involves procedures done in an office setting, has benefits for the surgeon as well. It may be scheduled to accommodate a busy schedule. Small-volume procedures are not time-consuming; working on a single area with the patient under local anesthesia eliminates general anesthesia, multiple preps, and position changes. Because the procedure uses both syringe infusion and aspiration, the costs in equipment and supplies are significantly reduced. In his lectures to residents entering practice, Gustavo Colon, MD, makes the point that technology alone does not bring patients (written communication, 1997). There is no benefit to investing in high-cost, high-tech machines if patient demand does not justify the expenditure. The small-volume approach to liposuction allows the surgeon to establish a practice in body contouring with minimal economic and clinical risk and then to proceed with more aggressive approaches when they are appropriate.

As with all procedure plans, the goal should be to maximize results. Planned repetitive treatments allow minor revisions to be performed at a later procedure sitting and are easy to accomplish. This advantage may be especially valuable for the surgeon who is still in the learning curve. In my experience, postoperative Endermologie helps to improve the final outcome. Finally, long-term contact with the practice and continual monitoring help patients to be more attentive to lifestyle issues. The staff is able to provide a positive, supportive atmosphere.

In a highly competitive practice environment, one must design treatment plans that meet patient needs and budgets. In addition, patient response to media coverage must be addressed, especially when it comes to safety issues. An effective treatment plan that answers all these concerns is beneficial to the aesthetic surgical practice.

Conclusion

Patient interest in body contouring is steadily expanding. Procedures—and the technology needed to perform them—are constantly being refined. It seems obvious that the reported increase in complications of lipoplasty, with associated morbidity and death, may be a direct result of "pushing the envelope." The program suggested here, which includes a complete medical evaluation, a support-

ive environment for maintenance of a nutritional and exercise regimen, and small-volume liposuction procedures, avoids nearly all the risks of large-volume procedures. I do not suggest that large-volume procedures are not indicated for some patients in properly controlled environments. However, the program of repetitive, small-volume procedures with Endermologie and lifestyle counseling meets many of the goals for safe, affordable, and consistently effective body contouring treatment that can be performed in the office. ■

The author would like to recognize Dr Terry Seidel, a previous resident and friend, who suggested this concept 3 years before his untimely death.

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