

d liposculpture

face, neck, arms and knees. This is another important advantage of this technique, due to the small diameter of the cannula—it can be used in all the parts of the body where a fat layer is present.

As laser-assisted liposculpture has been introduced and tested for several years, scientific papers have been published. Badin et al were surprised to observe very reduced flabby skin after laser lipolysis. They treated 245 patients in 12 months with no side effects. The only clinical problem was under-correction, because of insufficient delivered energy in their earliest cases.

Goldman et al used laser lipolysis on 1,734 patients in 28 months with similar results, with no important side effects, very low blood loss, low incidence of ecchymoses, and great comfort in the post-operative period. This is also our experience. There is practically no downtime, people are back to their routines in a few hours, and there are no restrictions on activities, except exposure to the

sun should be avoided for a month.

Laser lipolysis was demonstrated to be less traumatic than conventional liposuction methods. The primary reasons for this are the small 1mm diameter cannula and the effects of the laser-tissue interaction.

Dr Badin theorised that the laser-tissue interaction causes thermal damage of the cellular membrane through the liberation of heat and alteration of the Na+K+ "bomb," permitting migration of the water into the cells until they rupture. This is visible in the pathologic anatomy. In the pathology studies, we can also see the reduction in bleeding resulting from the coagulation of small vessels due to the laser and the lateral thermal effect.

Moreover, due to the laser-tissue interaction with the collagenous and subdermal bands, we can see the thermal effects, including the melting and the rupturing of the bands. This liberates the retracted skin and remodels the collagenous tis-

sue, with clinically evident skin retraction.

Clinically, this tissue interaction produces less swelling, yielding good contour, even in the early postoperative period. Ichikawa et al showed the capability of Nd:YAG laser system to transform the subcutaneous tissue in an oily lysate without any carbonisation. This is due to the particular pulse shape of the laser used in this technique (SmartLipo, Deka, Calenzano, Italy). The peak power and the duration of the pulses have been adapted for avoiding any risk of thermal damage, very important for limiting side effects: bruising, swelling and scars.

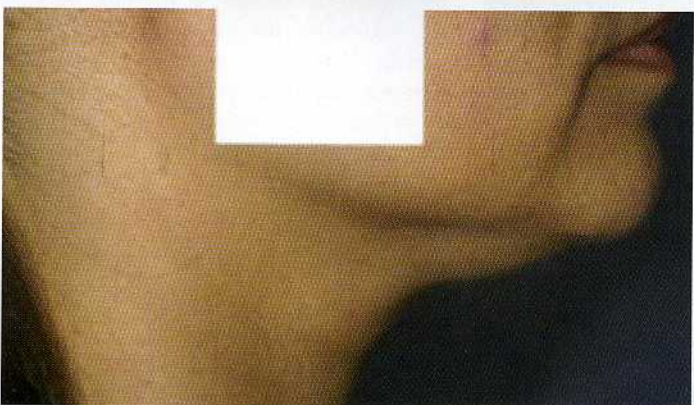
Advantages

Indications for this method of laser-assisted liposuction are areas with current, moderate or potential flaccidity. The main advantages of laser lipolysis are that it is the least invasive technique of liposculpture procedures, it is easy to learn, it requires less post-treatment care, results in minimal blood loss, leads to fast recovery times and provides better flatness of the superficial skin.

Laser lipolysis offers a method that addresses problems previously considered difficult or impossible to solve with conventional liposuction and also permits treatment of nearly any area of the face or body needing liposuction, a clear advantage over ultrasonic liposuction.

In our clinical experience it has proved to be less traumatic, with less bruising and swelling, and improved skin retraction, all demonstrated in pathology studies in the literature. ■

Dr Nicola Zerbinati is a dermatologist who practices in Italy



References

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- A. Goldman et al. "Laserlipolysis. Liposuction with Nd:YAG Laser"; *Rev Soc Bras Laser* 2:15, 2003
- K Ichikwa et al. "Histological Evaluation of the Pulsed Nd:YAG Laser for Laser Lipolysis"; *Lasers Surg Med* 36:43, 2005

Right top and below: before laser lipolysis on the side part of the legs and three months later after one session. Photos: Dr Nicola Zerbinati

Left top and below: before laser lipolysis on the neck and after three months, one session only. Photos: RG Geronemus, MD, Laser and Skin Surgery Center of New York