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SCRIPTA MANENT EDIZIONI

Lipolaser with SLIM-LIPO technique for lower face and neck mini-invasive remodelling and lifting

Franco Vercesi [1], Matteo Benedet [1], Flavia Guatteo [1], Vincenzo Argenzio [2], Nicola Roberto Pepe [3]

[1] Plastic Surgeon, Milan, Italy;
[2] Plastic Surgeon, Università Federico II, Naples, Italy;
[3] Plastic Surgeon, Rome, Italy.

Lipolaser with SLIM-LIPO technique for lower face and neck mini-invasive remodelling and lifting

Authors present their experience during the last four years on 72 patients treated with lipolaser technique at the level of face and neck. The procedure was the SLIM-Lipo with Palomar Aspire and was performed under local anesthesia on an outpatient basis. Results obtained have been fat removal and skin tightening with a true lifting effect without major complications.

KEY WORDS: *laser, liposuction, lipolaser.*

Introduction

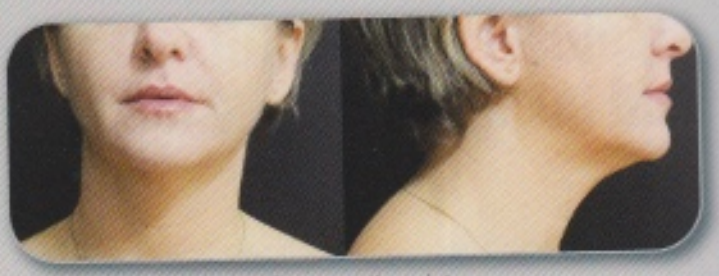
Due to ageing the facial form changes from a triangular aspect defined by the cheekbones and the chin to a more squared shape for the sagging of the jawls and the mandibular border [5, 6, 13].
This phenomenon has different causes, from the changes occuring to the bones to the redistribution and displacement downwards of soft tissues, fat and skin.
The same occurs at the neck level where submental fat changes the contour of the submental angle and the relaxed skin enhance the sagging appearence.
The loose of fat in the middle third of the face can be treated with lipostructure and in some case we can achieve a vertical traction of the lower third due to the restoration of volume but is difficult to tighten the overling skin.
The excedence of fat can be corrected with traditional liposuction.
For the skin relaxation of lower third of the face and of the neck traditionaly we have to use surgical techniques of lifting with more scars and downtime.
In the actual society we always have less time to spend for us and the need of a faster and faster recovery time is mandatory so on we where looking for a technique able to correct as much as possible these defects in a shorte time and with minmal disturb and sequaele for the patients. An help arrived from our experience with hundred of cases of lipolaser with SLIM procedure done all around the body where mini-invasivity of fat removal associated to skin contraction was evident and 3 years ago we thought to use it also in lower face and neck [1, 4, 7, 16, 18, 19, 20, 24, 26].

Assumptions, materials and methods

SLIM-Lipolaser minimises postoperative tissue injury and oedema, enables complete treatment of accumulated sagging fat in the face and submental area, the controlled heating tightens the overlieng skin improving the shape of the face. In these cases there was no need for lipostructure and surgical lifting procedures.
Lipolaser is generally recognized as a safe procedure with less trauma respect traditional liposuction, less oedema, less pain and less ecchymosis that leads to a greater compliance and satisfaction of the patients.
The procedures have been effectuated with the Aspire-dual-emission laser (*SLIM-Lipo, Palomar*). Emission is in a continous way at 924 nm and 975 nm simultaneously or separately; the 924 nm wavelength is more selective for adipocytes destruction where the 975 nm heats the connective tissue and leads to skin retraction. Laser energy is given through a 1.5 mm diameter elastic fibre of different lengths. The cone shape of the tip reduces mechanical resistence when passing through fibrous tissue and allows a good distribution of the energy. Continous emission has a limit of 20W for each wavelength [29, 30].
The initial heat generates an alteration of the sodium-potassium balance in the cell membrane, augmenting the permeability from extracellular to intracellular space with increasing adipocytes volume. Increasing the powers adipocytes are crashed and collagen fibres and smaller vessels coagulate. The lipases released after rupture of the membrane liquefy the adipose tissue, facilitating less traumatic aspiration. This coagulation of smaller vessels contributes to the reducing of postoperative trauma [10-12, 14, 15, 21].

The shape and the flexibility of the small fibre enables a smoother penetration of soft tissues, reaching also distant areas with less forced movements and a more uniform and precise distribution of energy resulting in a more regular aspiration of fat.
Continous emission and selectivity for lipids reduces temperature peaks of the dermis and as conseguence there is no burning of the dermo-epidermal junction and a low incidence of skin injuries with shorter recovery time.
Traditional liposuction removes both fat and large amounts of blood and serum and requires bigger cannulae. Moreover the sweeping movements are more forced and consequently skin surface irregularity and lymphatic vessel ropture are common, explaining the persistence of oedema in this area with the risk of hyperpigmentation due to abundant bleeding [2, 9, 23, 27, 28].
Studies of other *Authors* (*Levi et al.*) showed damage of the epidermal surface at temperature above 46° observing histologically discreet bleeding, coagulation of collagen fibres and adipocytes injury in the first day after surgery. Adipocytes remain surrounded by histiocytes that is a marker of lipolysis 1 month after surgery. Collagen deposits can be observed in subdermal fat 1 week after surgery and are more intense at 1 month. 72 patients have been treated during the last 4 years, 4 males and 68 females, mean age 52,7 years (range from 47 to 58). In the first 13 patients we treated only the nek but in the rest neck and face were treated at the same time.

Figure 1.



1a. Preoperative picture.

1b. Swelling effect of the local anaesthesia enhance the importance of a good preoperative marking.

1c. Immediately after operation.

1d. Well definition of the neck and submental area with a good mandibular definition 2 months after operation.

Procedure

Preoperative markings of face and neck have been done with utmost accuracy to avoid lesion of facial nerve (four cases of transient stupor with remission in maximum 2 weeks).
Anesthesia has been performed by infusion of 500 cc of saline plus 200 mg of lidocaine and 1mg epinephrine creating a mild swelling of the regions to be operated [22, 32, 33] (Figure 1).
After this procedure, well tolerated by the patients, there was a waiting time of 30 minutes to permit a complete and uniform diffusion of anesthetic fluid.
With a 18G needle three perforations of the skin have performed, one under the chin and two on the opposite sides under the ear lobes. Laser lipolysis with tha Aspire laser (*SlimLipo Palomar*) has been practiced at a subdermal depth into the adiposity and the laser tip has been gently and continously moved in a fan shape. At

Figure 2. Preoperative (left) and 3 months postoperative (right).

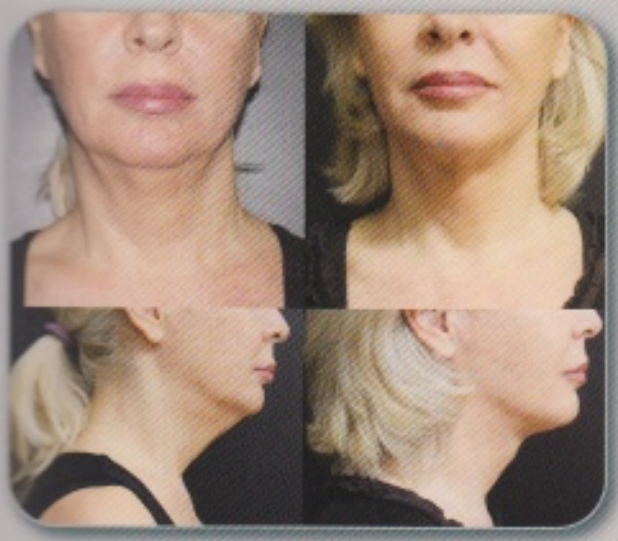


Figure 3. Preoperative (left side) and postoperative (right side) results after one month.

Figure 4. Preoperative (left above), 3 days after operation (right above), 2 months postoperative (left below) and 4 months postoperative (right below). The patient didn't loose weight and the results were obtained only with surgery performed. You can see the impressive potential of contraction and skin tightening durin the time after operation.

Figure 5. Same patient, frontal view. Preop (left above), 3 days postop (right above), 2 months postop (left below) and 4 months postop (right below).

the level of the lower third of the face total power administered was 1,5 KJ each side, in the submental area 2-3 KJ and 2,5-3 KJ for each side of the remaining neck areas for a total ranging from 8 to 12 KJ.
Aspiration has been perfomed with a suction device and a small cannula, both round and flattened tipped. The mean aspiration was 100 cc.
After the operation a compressive dressing has been positioned for 2 days and a compressive elastic girdle has been manteined during the night for 2 to 3 weeks.
We prescribed a pain reliever for the first day and an oral antibiotic therapy for 5 days. Normal activity has been reprised after 3 days.

Results and discussion

In the first cases where we threated only the neck we observed an improvement of the submandibular and submental shape but the global effect was not what we expected becouse lower face and neck act as a single unit if we want a thorough contraction and tightening of the skin. This result has been achived in all patients treated in the more complete and extensive way we used in all the remaining cases (Figure 2).
A good reduction of local adiposity has been obtained in all the patients and no touch-up procedure has been necessary.
As already said only complication we observed was a transient facial dynamic asymmetry and some induration that resolved with a soft massage.
The tightening effect on the skin was evident from the third week after surgery and improved till the fourth-fifth month with results in all cases considered satisfying for the patients and in some case comparable with a lifting technique (Figure 3).
Generally we can say that the technique is safe in well experted hands becouse the learning curve is quite long.
The procedure and the postoperative care is well tolerated by the patients if well explained before.
In our experience we didn't observed major complications as skin burn or facial nerve lesions and neither asymmetries of

any kind [3, 8]. The tightening effect we achived is much more than with liposuction conventional procedure and less invasive with practically no downtime becouse laser-assisted lipolysis casuses irreversible damage to adipocytes that can gently been removed with aspiration sparing septa and tissue structures with less bleeding and risk of seroma. Skin regularity and firmness was good in all the areas treated (Figures 4, 5). We believe that this technique could be improved with ancillary procedures like fat transplantation or traction threads with opponent cones.

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