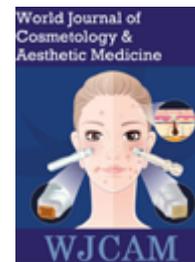


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New Technique for Reducing and Modeling Nasolabial Fat and Jowls: Lipoestructuración

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ABSTRACT

The aging process is characterized by ptosis of the fatty compartments of the face, loss of subcutaneous volume, weakening of the supporting structures of the face. In this process movement may occur, atrophy of the deep pads and hypertrophy of different superficial fat pads, for unknown causes, leaving the nasolabial fat prominent [3,4]. Currently, facial fat reduction can be performed by liposuction only in the submental and cervical regions [7]. Other minimally invasive treatments such as subcutaneous mesotherapy with deoxycholic acid or sodium deoxycholate associated with other active ingredients are being studied in aesthetic medicine to allow treatment of other areas of the face [2,4,6]. The development of new techniques is promising, such as the subcision of adipose tissue, already used in cellulite, is believed to allow the migration of fat cells in facial compartments to other compartments with lower volume, inducing an increase in adipose tissue in deficient compartments, and increases the stimulation of collagen evidenced in the treatment of acne scars [1,5]. As well as, the lack of standardization of mesotherapy techniques “chemical lipolysis” to reduce fat compartments. This prospective experimental clinical study was performed with 5 female patients. Clinical evidence was sought for the reduction of nasolabial fat compartments with modeling of facial fat and increase of self-esteem of patients with standardization of a new technique called lipostructure. Anthropometric measurements of the treated compartments and satisfaction research questionnaires of these patients will be used, as well as post-procedure follow-up to demonstrate the main adverse effects of this technique. The results found point to a mean reduction of 2.03% in the nasolabial fat of the patients studied ($p \leq 0.05$), demonstrating its efficacy. The patient evaluation form 30 days after the procedure showed that 80% of the patients were satisfied (40% well satisfied and 40% very satisfied), demonstrating its efficiency.

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Introduction

Facial rejuvenation procedures have become increasingly popular and there are several therapeutic options, such the mini surgical facelift and liposuction. Besides minimally invasive techniques: Botulinum toxin administration, fillers, subcision and mesotherapy [3].

It is now known that one of the causes of poor aesthetics is “facial squaring” promoted by aging caused by changes in the fat compartments of the face [3]. Wan *et al.* (2015) suggest that the differences between the superficial and deep fat compartments are not only anatomical, but also morphological and metabolic. The deep fat compartment, for example, has smaller adipocytes, which justifies its volumetric loss in a significantly higher quantity. In the nasolabial and jowl compartments, they suffer much more from a movement inferiority process than from volumetric loss [3,8]. Although the cause of this difference is still unclear, the deep fat compartments (periorbital, perioral, and buccal fat) tend to atrophy with age, and the superficial compartments (submental, nasolabial, double chin, and lateral malar region) are more prone to hypertrophy [4]. These

changes in the fat compartment of the face, loss of subcutaneous volume, weakening of the supporting structures of the face, with movement and atrophy of the deep pads associated with hypertrophy of different superficial fat pads for unknown causes, leaving nasolabial fat prominent collaborating with unaesthetics [3,4]. Currently, the most used and effective treatment is the reduction of facial fat by liposuction, still limited to the submental and cervical regions [7]. In addition, other minimally invasive procedures for fat compartments in facial aging are being studied, such as mesotherapy with deoxycholic acid or sodium deoxycholate and the association with other active ingredients that have proven effective for the double chin, infraorbital, submental and submental fat regions cervical [2,4,6].

Thus, with the appearance of new techniques to replace traditional ones, which can be non-invasive or minimally invasive, the possibility of new studies and standardization of new techniques opens up [7]. With this, the development of new techniques is promising, such as the subcision of adipose tissue, already used in cellulite, it is believed that in the facial compartments it allows the migration of fat cells to other compartments with less volume, inducing an increase in tissue. deficient compartments and increases the stimulation of collagen evidenced in the treatment of acne scars, which makes it possible to treat other regions of the face, contributing to the improvement of the facial contour and rejuvenating [1,5]. Existing studies to date report

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the lack of standardization of “chemical lipolysis” mesotherapy techniques to reduce the double chin compartment [1,5].

However, there is no study to date on new techniques on the treatment of nasolabial fat. Thus, it was necessary to develop an intermediate technique between mesotherapy and liposuction. Therefore, this study will demonstrate the development and standardization of the liposculpture technique and its efficacy in reducing nasolabial fat (upper, medial and lower nasolabial), its adverse effects and patient satisfaction. As such, this research has as its objective the standardization of the lipostructuring technique for the reduction of compartments of nasolabial fat and jowls through a prospective clinical experiment in 5 female patients.

Methodology

This is a pioneering experimental clinical prospective study. Five female patients aged between 30 and 60 years were selected, without any type of disease, without the use of any medication or supplement (except contraceptives) with aesthetic concerns related to increased cheekbones or bulldog (nasolabial fat). After the clinical anamnesis evaluation by a professional specialized in aesthetic medicine, according to clinical criteria, treatment was presented using the lipostructuring technique. The clinical information was recorded using the Free and Informed Consent Form (FCI) and the subsequent Guidelines for the procedure.

Anthropometric measurements before and after the procedure, an adipometer was used. The measurement was made in the upper nasolabial, middle nasolabial, and lower regions (jowls) (Image 15). These anthropometric data were recorded by photography. Patients returned on day 30 after the procedure to take anthropometric measurements and complete the patient satisfaction assessment questionnaire.

Protocol of the Technical Procedure of Lipostructuring

- a) Frontal photographs will be taken, diagonal of the face;
- b) Anthropometric measurements of the regions specified in the study were taken;
- c) Marks were made (Image 1);
- d) Antisepsis was made with 99% Alcohol and 0.2% Alcoholic Chlorhexidine;
- e) Local anesthesia was performed with 3% lidocaine;
- f) The Del Nero cannula was used, 17G 100 mm duckbill (Brand: TAB, Lot: 11/217) (Image 2), 100 mm long by thickness and duckbill tip for subcision connected to the syringe. 10 milliliters with the mixture;
- g) The mixture to be used will be with the following active ingredients (liposomal deoxycholic acid, caffeine, trisilinol, pentoxifylline, lidocaine, qsp.) 10 ml bottle (Brand: VICTALAB, Lot: 000299) (Image 3);
- h) The pertuito (tissue incision) was made with a 19G needle (pink) until reaching the subcutaneous cellular tissue) in the lower part of the nasolabial fat (jowls) (Image 4);
- i) The upper, middle and lower nasolabial adipose tissue was macerated by fan-shaped subcutaneous subcision with a Del Nero cannula together with pressure on the tissue in the direction of the infraorbital and zygomatic regions (Image 4).
- j) At the end of the approximately 20 subcisions (Image 4), fan-shaped retroinjections of 3 milliliters were performed in the right nasolabial compartments and the same volume in the left compartment.
- k) An immediate modeling massage was performed, just after finishing the procedure;
- l) A compression bandage will be applied to the holes and massage of the site for lipomodulation.
- m) After the procedure, the patients were followed up for 15 days and the adverse effects found were recorded.

Images:

Image 1: Location to take measurements for anthropometry.



Source: author

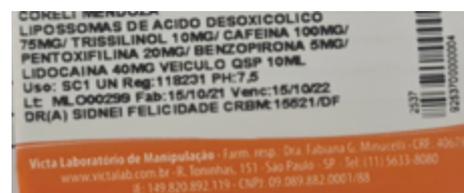
Description: Left Upper Nasolabial (NSI) (1), Left Middle Nasolabial (LNM) (2), Left Lower Nasolabial (NII) (3) Measurement.

Image 2: Del Nero cannula.



Source: author

Image 3: Mixture used.



Source: author

Image 4: Marking of the directions of the fan and location of the pertuito.



Source: author

Description: Pertuito (1), Fan with the De Nero cannula in the subcutaneous layer (2).

Image 5: Images of the patients before and after 30 days of the lipostructuring procedure..



Statistical analysis

The statistical analysis of the evaluation of the distribution of the fatty compartments was by means of the comparison of the means obtained by anthropometry of the left upper nasolabial (NSI), left middle nasolabial (NMI), left lower nasolabial (NII) regions, right upper nasolabial (NSD), right middle nasolabial (NMD), and right lower nasolabial (NID). A general average of the measures was taken and analyzes were carried out by the T-STUDANT methods for studies paired with the PSPP program (Version 3, 29 June 200, GNU GENERAL PUBLIC LICENSE). The data related to the post-procedure patient satisfaction questionnaire were tested using the parametric CHI-SQUARE test of the PSPP program (Version 3, June 29, 200, GNU GENERAL PUBLIC LICENSE). All statistical data were considered significant $p \leq 0.05$.

Results

The patients in the study have a mean age of 47 years (34-58). An average reduction in nasolabial adipose tissue and adipose jowls of 2.03 mm was found among the patients, showing a statistically significant correlation and difference $p \leq 0.05$ (Tables 1 and 2).

Pair	Antes & Depois	N	Correlation	Sig.
Pair 1	Antes & Depois	5	,885	,046

Table 1: Result of the correlation between before and after 30 days of lipostructuring treatment.

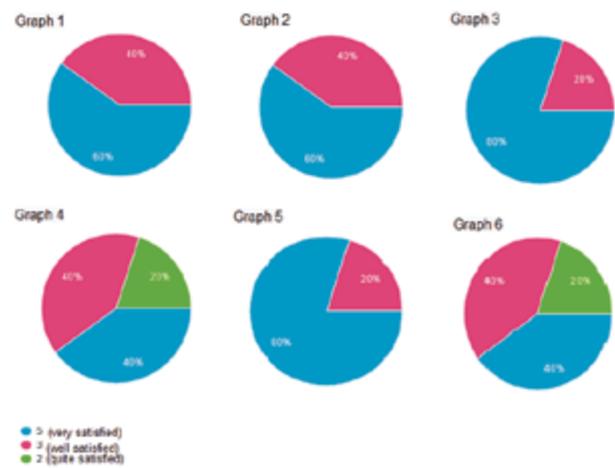
Pair	Antes-Depois	Mean	Std. Deviation	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference		
							Lower	Upper	
1	Antes-Depois	2.03	1.65	,47	,73	3.31	-.33	1	,012

Table 2: Result of the difference between before and after 30 days of lipostructuring treatment.

The study of the form of evaluation of satisfaction with the lipostructuring procedure was determined in categorical variables such as Satisfaction (Patient satisfaction with the procedure), Self-esteem (If the procedure increased self-esteem), Modeling (If an improvement was observed in the distribution, i.e., filler in other regions), nasolabial (a decrease in lip fat was observed after the procedure), jowls (a decrease in jowls fat was observed after the procedure), and skin (a decrease in jowls fat was observed after the procedure). an improvement in the appearance of the skin after the procedure). For each variable, the patients responded: 1 (totally dissatisfied), 2 (quite satisfied), 3 (well satisfied), 4 (totally satisfied), 5 (very satisfied).

It was observed, 30 days after the lipostructuring procedure, that 60% (well satisfied) of the patients perceived modeling or filling of some region of the face (Graph 1), 80% (well satisfied) perceived a decrease in the nasolabial fat pad (Graphs 3), 60% (very satisfied) perceived a decrease in jowls (Graph 2), 80% (40% well satisfied and 40% very satisfied) perceived an improvement in the appearance of the skin (Graph 4) 80% (well satisfied) were very satisfied with self-esteem (Graph 5) and 80% (40% very satisfied and 40% well satisfied) with the level of general satisfaction (Graph 6).

Graphs of patient satisfaction assessment results:



LEGENDS:

Graph 1. Assessment of modeling or filling in any region of the face 30 days after the lipostructuring procedure.

Graph 2. Evaluation of jowls fat reduction 30 days after the lipostructuring procedure.

Graph 3. Evaluation of the decrease in nasolabial fat 30 days after the lipostructuring procedure.

Graph 4. Assessment of skin improvement 30 days after the lipostructuring procedure.

Graph 5. Assessment of self-esteem 30 days after the lipostructuring procedure.

Graph 6. Evaluation of the level of general satisfaction and the 30 days of the lipostructuring procedure.

However, the results obtained from the form 30 days after the lipostructuring procedure were not statistically significant (Table 3).

Testes estatísticos

	Chi-square	df	Asymp. Sig.
AUTOESTIMA	1,80	1	,180
SATISFACCIÓN	,40	2	,819
NASOLABIAL	1,80	1	,180
JOWLS	,20	1	,655
MODELACIÓN	,20	1	,655
PIEL	,40	2	,819

Table 3: Statistical analysis using the CHI-SQUARE test of the results obtained from the questionnaire 30 days after the lipostructuring procedure.

Dicussion

Lipostructuring in its clinical use to reduce the nasolabial fat compartments and jowls showed in the 5 female patients studied an average decrease of 2.03 mm per patient in the nasolabial fat compartments and right and left jowls of the face, which implies that it was reduced an approximate average of 1.01 mm per side of the face. These results were statistically significant ($p \leq 0.05$) consistent with what was expected from the use of deoxycholic acid in previous studies, emphasizing its efficiency.

In clinical practice, it is apparent that some patient-specific compartments had an increase in thickness rather than a decrease. It is believed that it was due to the increase in collagen by subcutaneous subcision related to the administration of trisilinol and activation of atrophic fat, but needs further study.

The images of the patients before and after 30 days of the lipostructuring procedure (Image 5), showed an improvement in the visual aspect of the skin, as well as a slimming effect on the lower third and center of the face, providing an appearance of facial rejuvenation consistent with

the result of the research questionnaire on skin improvement 30 days after the lipostructuring procedure, which showed 80% (40% very satisfied and 40% well satisfied) of satisfaction of the treated patients (Graph 6).

Some patients, after lipostructuring, required other procedures, which shows that this technique is an adjunct to procedures with suture threads, since it allows the reduction of the gravitational weight of the cheeks, possibly allowing better results with skin support threads.

Despite the study evaluation of patient satisfaction is not statistically significant, possibly due to the low number of patients in the study. It was found that 80% (40% very satisfied and 40% well satisfied) of the patients were satisfied (Graph 6), which shows that this technique was effective, since it met the expectations of the majority of the patients.

In addition, a minimum average of 2.4 and 3.6 was observed between the questions applied by the patient satisfaction survey form after 30 days of the lipostructuring procedure. This shows that most of the answers were between 2 and 3, where 2 means reasonably satisfied and 3 means quite satisfied.

The follow-up of the patients throughout the recovery period made it possible to demonstrate any type of intercurrent, as well as adverse effects expected in the literature, such as: edema, pain, hematoma, nodules, hyperemia and fluid retention. No pharmacological interventions were necessary after the lipostructuring procedures.

Conclusions

This pilot study provided the standardization of the lipostructuring technique applied to the nasolabial and jowls fat compartments for use in aesthetic medicine. Lipostructuring was statistically significant for the reduction of nasolabial and jowls fat compartments, demonstrating its efficiency. This technique provided 80% patient satisfaction, being a great choice for places where liposuction or fine needle mesotherapy cannot be performed, due to its versatility and effectiveness. Likewise, a visual improvement of the facial contour and freshness of the skin was evidenced in the images before and after 30 days, compatible with the 80% satisfaction of improvement of the skin responded in the form applied to the study patients, promoting its effectiveness. The improvement in flaccidity was also evident by palpation and skin pinching, but measurable and statistical tests were not performed, needing future study. No complications were observed. The adverse effects found were edema, hematoma, hyperemia, pain, local nodulation and fluid retention up to 15 days after the procedure, providing its safety. Therefore, this technique is now standardized and validated with a recommendation for use at the clinical discretion of professionals working in aesthetic medicine who require training. In addition, complementary studies with a larger number of patients are needed.

Limitations

- The main limitation of this study in the development of the lipostructuring technique is the low number of patients studied.
- Technical limitations imply the need to use support threads to complement the improvement of facial rejuvenation and contour, as well as fillers, biostimulators and botulinum toxin.
- Taking into account that in some cases, the images before and after the lipostructuring procedure showed a thinning of the lower third with a decrease in the nasolabial and jowls fatty compartments, but a visual effect provides an accentuation of the fall of the nasolabial tissue and the jowls, that according to clinical criteria, to promote facial rejuvenation, it was necessary to carry out another type of intervention.
- The use of this technique is limited to patients who need the use of skin support threads, who present increased nasolabial fat compartments and jowls that can contribute gravitationally to the loss of the effect of the threads, as well as patients with faces who want to improve facial contour.
- If this technique is used in patients without clinical criteria, it can further accentuate the ptosis of facial tissue, due to the decrease in the gravitational weight exerted by the cheeks.

- The use of this technique is limited to professionals who have completed a practical theoretical training course after the date of this publication.

Ethical Consideration:

All patients included in the study were submitted to an Informed Consent Form (TCLE) and authorization to use the image.

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