

Subcutaneous Lateral Brow Lift, an Option with Local Anesthesia

Levantamiento de Cejas Lateral con Acceso Subcutáneo, una Opción con Anestesia Local

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SUMMARY: The aim of this article is to present a case series of subcutaneous lateral brow lifts with local anesthesia. The case series includes 9 subjects operated on between 2014 and 2016, with an average age of 57 years and with no limitations on ethnic group or gender. The surgery was done bilaterally entirely under local anesthesia. After a minimum follow-up of 3 months, no major complications were observed, only partial suture dehiscence at two surgical sites that did not require surgical management of the zone. Good results were established, being fast, economical and with low morbidity. It is concluded that the subcutaneous brow lift with local anesthesia can be applied with a low rate of complications and good results.

KEY WORDS: brow lift, facial rejuvenation, facial esthetic surgery

INTRODUCTION

Lateral and superior ptosis of supraorbital soft tissues are common phenomena of aging, and dermatochalasis is also characteristic of the zone. In these conditions, the lateral third of the eyebrow presents a significant reduction, accentuating ptosis of the superior eyelid, where soft tissue laxity becomes difficult to manage with nonsurgical techniques and the loss of symmetry becomes more common (Dhaliwal, 2016)

The lateral brow lift is a useful complement to eyelid surgery and enables rejuvenation of the periorbital region. To do this, a wide variety of techniques has been described aimed at lifting the brows, including the coronal brow lift, endoscopic brow lift and forehead lift, among others, obtaining good results (Griffin & Owsley, 2004).

There are many indications and clinical findings that determine the surgical technique, including the surgeon's preferences, brow contour desired, degree of ptosis of tissues, skin

quality and type, eyebrow symmetry, hair position, etc. Costs, recovery time and the patient's preferences also affect the choice (Chi, 2016).

Therefore, the subcutaneous lateral brow lift can be an alternative in cases of moderate ptosis accompanying blepharoplasty. The aim of this study is to assess a case series where the lateral brow lift was done using subcutaneous accesses and local anesthesia.

MATERIAL AND METHOD

An analysis was performed on a series of 5 cases operated on in private practice by the same surgeon between 2014 and 2016. This study fully respected the Helsinki Declaration. The patients agreed voluntarily by signing an informed consent specially designed for this study.

Subjects of both sexes between 45 and 65 years of age were included, who had no systemic diseases, with no limitation on ethnic group and with the bilateral dermatochalasis. Subjects were excluded who had undergone other facial procedures that could alter results of the brow lift technique, such as the presence of face lift surgeries or the use of fillers or botulinum toxin in areas near the site of interest.

Surgical Technique. Site marking was done with the patient in a sitting position, facing a mirror. In the first stage the patient was asked to raise their eyebrows and then manual traction was applied upwards and sideways, locating the highest lateral position of the brow above the medial position; this identifies the amount of tissue needed to be removed and the final position in the suture stage. The marking was done at the same level as where the frontotemporal hairline begins.

The surgery was done exclusively under local anesthesia, using a slight oral sedation of 7.5 mg midazolam 1 h before the surgery. The work area was infiltrated with local anesthesia: lidocaine 2% and epinephrine 1:100,000. For each work area 8 ml of solution were applied, using up to 3 ml in each zone to reinforce the anesthesia intraoperatively.

After asepsis, antisepsis and the placement of drapes, a 45° angle beveled incision was made as far as the subcutaneous plane approximately 4 to 5 cm in length; the dissection then began with fine pointed scissors and then scissors with a rounded point; the skin flap was deepened with an extensor retractor. After reaching the necessary traction zone for the proposed lift, position and stabilization sutures were placed until the excessive skin tissue was removed. Slight and moderate traction movements were executed to fix with final sutures: vicryl 4-0 interrupted sutures on the subcutaneous plane and 5-0 Prolene sutures in a running stitch on the cutaneous plane. In cases of asymmetry, the best way to achieve symmetry was defined as using different traction on the two sides. No drainage system was installed and the incision was covered by a topical antibiotic.

The postoperative stage consisted of sessions of regional lymphatic drainage and the

scheduled use of nonsteroidal anti-inflammatories. Ice was also used for the first 48 h; the skin suture was removed between 6 and 9 days after the surgery.

RESULTS

The 5 subjects included were operated on with no alterations to the sequence indicated; there were 4 female and 1 male subjects with an age average of 57 years (range from 49 to 64 years). The surgery was bilateral in every case and follow-up was 3 to 14 months. The superior eyelid surgery was performed at the same time in 6 subjects, while two received the lateral brow lift exclusively.

The surgical time for each procedure was from 25 to 38 minutes. No excessive bleeding or intraoperative alteration was observed; the repositioning and suturing were carried out with no complications, although in the postoperative stage in two of the 18 surgical sites minor wound dehiscences were observed, likely due to greater traction. Symmetry, however, was achieved in every patient.

In the postoperative stage, no patient complained about pain, bleeding or excessive swelling of the area. Infections were not observed and subjectively there was satisfaction with the esthetic results.

DISCUSSION

Usually, the anatomical frontal and brow area characterizes aging by the sagging it exhibits, so that the periorbital rejuvenation produced by eyelid surgery alone does not offer options to improve the lateral and superior area of the frontal area of the brow. In this sense, it seems that the position of the brow is more relevant than other factors in the effect of frontal and periorbital rejuvenation (Knoll *et al.*, 2008).

Although scales to analyze the results in brow and eyelid surgery have been designed, there has been no relevant information

published with high levels of evidence; on the contrary, the evidence levels are very limited and the case series are the most frequently used (Teng & Christophel, 2015); nevertheless, the level of results and the impact reported by the patient are relevant aspects in such surgeries.

According to our results, the lateral brow lift with beveled incisions at the hairline can be carried out under local anesthesia without complications, obtaining fast and satisfactory results. Niamtu (2008) reported that the use of the minimal incision and subcutaneous brow lift techniques could optimize the surgery since there would be advantages such as not needing specialized instruments, working with simple dissections, the absence of nerve damage in the frontal area, development of limited tension on brow suspension, control of the brow position, absence of bone fixations and low learning curve.

The combination of superior eyelid surgery with dissection as far as the supraorbital rim in order to then access the sub-periosteal plane and lift the brow are widely used techniques (Carniol & Baker, 2006); however, there are limitations to the full control over the brow position considering that the most esthetic position in women is with the lateral third of the brow 8 mm above the medial third. Early reports on sub-periosteal dissections of the same zone have shown efficiency, considering that the scar could already be immersed within the scalp, hiding it with greater facility; local anesthesia use, however, could be limited and the results of postoperative swelling could be greater (Gasperoni *et al.*, 1993).

The technique used in this case series proposes the option of fast, efficient results and at low cost due to the absence of hospitalization and conditions linked to the use of general anesthesia. It has been confirmed that with this lateral access technique there is a smaller but more comfortable dissection and with a lower level of nerve damage (Bidros *et al.* 2010; Taban, 2016). For the patient, the reduction in costs and anxiety is significant, so that techniques like these are not so frequently rejected because of the increased benefits they offer.

Hamamoto *et al.* (2013) conducted a study to identify vectors associated with the best brow position, and found no vector with significant relevance in the final brow position; they also reported that lifting the frontal zone and eyebrows usually with coronal dissections or endoscopic techniques generates a greater volume of tissue transport, meaning that cases of greater complexity can be undertaken with those techniques. The subcutaneous lateral technique is reserved as a selective movement of the lateral brow zone, permitting rapid visualization of the results (Bridos *et al.*)

Bridos *et al.* published a series of 28 patients with an average follow-up time of 10 months; they indicated good and excellent scarring outcomes, emphasizing the efficiency in the results; two patients needed a new operation to improve the brow position and another required a scar revision. Taban described the technique in 45 patients, reporting good results; there was no need for scar revision and only one patient needed a new operation to improve the position; the author emphasizes the simplification options that enable the technique and the low costs associated with it.

In the present series scar or brow position complications were not observed; there was only one suture dehiscence in the immediate postoperative stage that did not require subsequent surgical management. In this sense, a low prevalence of complications in the brow lift has been reported, with alterations in the final position, nerve damage, complications in the scar and alopecia being possibilities (Cuzalina & Bedi, 2016). In fact, in open techniques with skin flaps, alopecia and nerve alterations are the main complications (3.5% and 2% according to the technique) (Byun *et al.*, 2013); by the characteristics of the technique presented in this article, however, they are rare.

On the basis of this limited case series, it is possible to conclude that the technique described contributes to the improvement of the periorbital region, with low morbidity, low cost and high efficiency. Its use must be restricted to the improvement of the lateral brow zone with or without the implementation of eyelid surgery.

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RESUMEN: El objetivo de este artículo es presentar una serie de casos operados para levantamiento lateral de cejas, con disección subcutánea y con uso de anestesia local. Se diseñó un estudio de serie de casos, incluyendo 9 sujetos operados entre el año 2014 y 2016, con una edad promedio de 57 años y sin restricción de etnia o sexo. Se realizó la cirugía totalmente bajo anestesia local de forma bilateral. Después de un seguimiento mínimo de 3 meses, no se observaron complicaciones mayores, presentado solo dehiscencia parcial de sutura en dos sitios quirúrgico que no requirieron manejo quirúrgico de la zona; se establecieron buenos resultados, siendo ellos rápidos, de baja morbilidad y de bajo costo. Se concluye que la técnica de levantamiento de cejas con disección subcutánea y anestesia local puede ser aplicado con bajo índice de complicaciones y buenos resultados.

PALABRAS CLAVE: levantamiento de cejas, rejuvenecimiento facial, cirugía estética facial

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