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NEÜ YAYINEVİ

Lip Lift With Dermal Suspension Flap Technique: Effect on Patient Satisfaction and Scar Appearance

Dermal Suspansiyon Flebi ile Dudak Kaldırma: Hasta Memnuniyeti ve Skar Görünümü Üzerine Etkisi

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Öz

Amaç: Bu çalışma klasik boğa boynuzu eksizyon paternli dudak kaldırma ameliyat tekniği ile (grup I), aynı paterndeki insizyonla üst dudakta hazırlanan dermal flep kullanılarak gerçekleştirilen dudak süspansiyonu tekniğinin (grup II) , dudak kaldırma ameliyatlarındaki hasta memnuniyeti ve skar görünümüne etkisini karşılaştırmak amacıyla yapılmıştır.
Hastalar ve Yöntem: Yazar tarafından 2016-2023 yılları arasında ameliyat edilen 48-66 yaş arası 28 kadın hasta iki grupta incelendi. Birinci gruba klasik boğa boynuzu eksizyon paternli dudak kaldırma tekniği ile ameliyat edilen 14 hasta, ikinci gruba aynı paterndeki insizyonla üst dudakta hazırlanan dermal flep kullanılarak dudak süspansiyonu tekniği ile ameliyat edilen 14 hasta dahil edildi. Tüm hastalar lokal anestezi altında ameliyat edildi. Altı ay takip edilen her iki guruptaki hastalara 6. ayın sonunda global estetik iyileştirme ölçeği kullanılarak genel estetik sonuçtan memnuniyet düzeyleri soruldu. Ayrıca bir değerlendirici cerrah, Vancouver skar ölçeğini kullanarak ameliyat sonrası oluşan skarı skorladı. Tüm sonuçlar istatistiksel olarak değerlendirildi.
Bulgular: Genel hasta memnuniyeti grup 2'de grup 1'e göre klinik olarak anlamlı olarak daha yüksekti ve grup 2'de grup 1'e göre skar klinik olarak anlamlı olarak daha az bulundu ancak istatistiksel olarak anlamlı fark yoktu (p>0,05).
Sonuç: Hastalarımızda hem genel estetik açıdan hasta memnuniyetinin daha yüksek, hem de skar görünümünün daha az olması nedeniyle, dermal suspansiyon flebi tekniği kullanılarak yapılan dudak kaldırma ameliyatlarının klasik eksizyon yöntemine değerli bir alternatif olarak katkı sağlayabileceği kanaatine varılmıştır.

Anahtar Kelimeler: Flep, cerrahi, dudak, kaldırma

Abstract

Aim: This study was designed to compare the effect of the classical bull horn excision pattern lip lift technique (group I) and the lip suspension technique (group II) which was performed using a dermal flap prepared on the upper lip with the same pattern incision, on patient satisfaction and scar appearance in lip lift surgeries.
Patients and Methods: Twenty-eight female patients aged 48-66 years, operated by the author between 2016 and 2023, were analyzed in two groups. The first group included 14 patients who were operated on with the classical bull horn excision pattern lip lift technique, and the second group included 14 patients who were operated with the lip suspension technique using a dermal flap prepared on the upper lip with the same pattern incision. All patients were operated under local anesthesia. At the end of the 6th month, the patients in both groups, who were followed up for 6 months, were asked about their satisfaction with the overall aesthetic result using the global aesthetic improvement scale. In addition, an evaluator surgeon scored the postoperative scar using the Vancouver scar scale. All results were evaluated statistically.
Results: Overall patient satisfaction was clinically significantly higher in group 2 when compared with group 1 and the scar was found to be clinically significantly less in group 2 when compared with group 1, even though there is no statistical significance (p>0.05).
Conclusion: It has been concluded that lip lift surgeries performed using the dermal suspension flap technique can contribute as a valuable alternative to the classical excision method, due to both higher overall aesthetic patient satisfaction and less scarring in our patients.

Keywords: Flap, Surgical, lip, lifting

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INTRODUCTION

As age progresses, the upper lip loses its youthful appearance, loses its volume and fullness, lengthens vertically, the visibility of the teeth decreases, the philtrum straightens, the vermillion becomes thinner, the cupid's bow disappears, the eversion of the lip decreas-es (1). As a result, the distance between the subnasale and the upper lip increases, and the nasolabial angle decreases (2,3).

Realizing that the upper lips look aged interestingly despite facelift surgeries, Dr. Aus-tin saw that the skin excisions from the vermillion border were far from satisfying the pa-tients due to scarring to solve the problem, and he first defined the lip-lift procedure in 1986 with 83 cases where he made skin excision from the base of the nose in the form of a wavy ellipse (4). This central lip lift was introduced as an upper lip lift, Austin-type lip lift, or sub-nasal lip lift in 1980s (5-10).

Despite all this, although a large number of major surgeries for facial rejuvenation are performed in elderly patients, the lip lift procedure is still adopted and applied by a limited number of surgeons, perhaps due to fear of scarring (9). Contrary to classical bull horn exci-sion pattern lip lift technique, the dermal suspension technique can cause less scarring. There are not enough studies in the literature on the effect of lip lift surgeries with dermal suspension on patient satisfaction and scar formation.

The aim of the study was to compare the effect of the classical bull horn excision pat-tern lip lift technique and the lip suspension technique which was performed using a dermal flap prepared on the upper lip with the same pattern incision, on patient satisfaction and scar appearance in lip lift surgeries.

PATIENTS AND METHODS

Patients admitted to our hospital between 2016 and 2023 years with the request of lip rejuvenation were included in this retrospective study. The patients who underwent surgery for lip rejuvenation and were min. 45 to max. 67 years old were included in the study. Pa-tients who previously underwent surgeries in the upper lip, who had permanent lip fillers and keloid history were excluded from the study. Patients were randomized based on their appli-cation dates. Patients were divided into two groups: (1) those operated with classical lip lift technique (group 1) and (2) those operated with a dermal suspension flap (group 2). Ethics committee approval was obtained (2023/4171), and both verbal and written informed con-sents were acquired from all the patients included.

Once the excision height is marked, the remaining reference vertical markings are drawing with several lines in order not to lose symmetry when closing the skin. In all pa-tients, between 4- and 10-mm excisions were made from subnasale to labiale superius, with the remaining lip length not less than 12 mm. The procedures in both groups were performed under local anesthesia with %2 lido-caine with Jetokain® Ampoule (2 mL ampoule, Adeka A.S., Turkey) containing about 20 mg of lidocaine HCl, 0.125 mg of epinephrine.

Patient demographics, complications, and clinical results were recorded. At the end of the 6th month, all patients were asked about their level of satisfaction of both overall aes-thetic results using global aesthetic improvement scale (GAIS) (Table 1). Also, an evaluator surgeon assessed postoperative scar, using the Vancouver scar scale (VSS) (Table 2). The VSS, which was designed by Sullivan et al. (10) in 1990, rated the scars according to four parameters: vascularity, pigmentation, pliability, and height (Figure 1c).

Surgical techniques;

Group I: Classic the bull's horn excision pattern for subnasal lip lift was used in all pa-tients. After standard deep dermal sutures with 5/0 pds , the incision is closed by interrupted vertical mattress sutures with 6/0 nylon to be removed 6 days later.

Group II: A dermal suspension flap is prepared on the upper lip after the bull's horn in-cision (Figure 1a). Dissection extended 10 mm under the dermal flap and

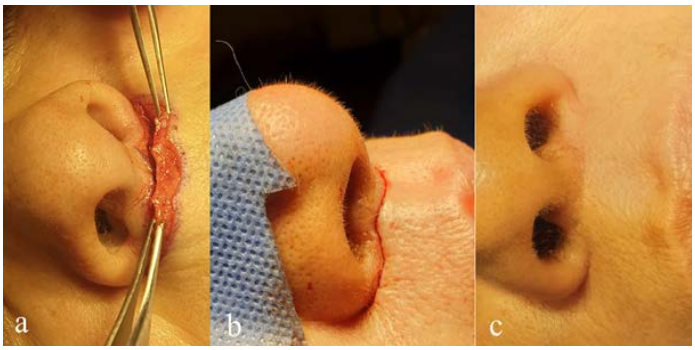

Figure 1. a) dermal suspension flap is prepared on the upper lip after the bull's horn incision, b) The dermal flap is sutured and suspended with multıple 5/0 pds sutures deep to fibrous tissues under the subnasal area that was previously dissected 4 mm c) Evaluator surgeon rated the scars according to four parameters: vascularity, pigmentation, pliability, and height

Table 1. Postoperative Patient's satisfaction measured by global aesthetic improvement scale (GAIS).

Postoperative Assessment	Group-I n (%)	Group-II n (%)	p-value*
Patient's satisfaction overall aesthetic improvement			0.584
Very much improved	6 (%42.9)	9 (%64.3)	0.449
Much improved	4 (%28.6)	3 (%21.4)	1.000
Improved	3 (%21.4)	2 (%14.3)	1.000
No change	1 (%7.1)	-	1.000
Worse	-	-	NA

* Chi-square test.

over the muscle layer, and 4 mm under the columella and subnasale. The dermal flap is sutured and suspended with multiple 5/0 pds sutures deep to fibrous tissues under the subnasal area that was previously dissected 4 mm (Figure 1b). While excising the dermal tissue more than 4 mm on the sides, the entire dermal flap in the middle, which falls under the columella, remains intact, in order to create volume on the nasal spine. After standard deep dermal su-tures with 5/0 pds , the incision is closed by interrupted vertical mattress sutures with 6/0 nylon to be removed 6 days later. All photographs were taken pre-operatively, on the 6th day before the suture removal, and at the 6th months postoperatively (Figure 2)

Patients were advised to use ophthalmic antibiotic ointment (bacitracin) for 2 weeks after the procedure to keep the wound constantly moist. All patients in the series were eval-uated clinically with a standard postoperative follow-up and by surgeon review of photo-graphs.

Statistical Analysis

Data analysis was performed using the Statistics Package for Social Science (SPSS 23.0-IBM, NY, USA). Characteristics of patients, as n (percent) or mean standard deviation (SD) and median (minimum-maximum) for categorical and continuous variables,

Table 2. The Vancouver scar scale postoperative assessment (by evaluator surgeon)

Variables	Score Value	Group-I n (%)	Score	Group-II n (%)	Score	p-value
Vascularity						0.351*
Normal	0	9 (%64.3)	0	12 (%85.7)	0	
Pink	1	4 (%28.6)	4	2 (%14.3)	2	
Red	2	1 (%7.1)	2	-	-	
Purple	3	-	-	-	-	
Pigmentation						0.596*
Normal	0	11 (%78.6)	0	13 (%92.9)	0	
Hypopigmentation	1	3 (%21.4)	3	1 (%7.1)	1	
Hyperpigmentation	2	-	-	-	-	
Pliability						0.472*
Normal	0	11 (%78.6)	0	13 (%92.9)	0	
Supple	1	2 (%14.3)	2	1 (%7.1)	1	
Yielding	2	1 (%7.1)	2	- -		
Firm	3	-	-	-	-	
Ropes	4	-	-	-	-	
Contracture	5	-	-	-	-	
Height (mm)						1.000*
Flat	0	13 (%92.9)	0	14 (%100)	0	
<2	1	1 (%7.1)	1	-	-	
2-5	2	-	-	-	-	
>5	3	-	-	-	-	
Total Score			14.0		4.0	
Score, Mean±SD			1.0±1.79		0.29±0.83	0.183**
Score, Median (Min-Max)			0 (0-6)		0 (0-3)	

* Chi-square test.
** Mann Whitney U-Test.

respectively, and were compared among treatment groups using chi-square or Mann-Whitney tests, as appropriate. The P value was set at <0.05 for statistical significance.

RESULTS

A total of 28 patients aged between 48-66 were included in the study. In group 1 where 14 patients were included, the mean age was 55, with a minimum of 49 and a maximum of 66 years, while in group 2, which included 14 patients, the mean age was 54, with a mini-mum of 48 and a maximum of 65 years. In both groups, average excision length was 7 mm.

9 of 14 patients (66%) stated very much improvement in the group 2 in which the dermal suspension flap was used, while 6 of 14 patients (%42.9) stated very much improve-ment with classical technique in Group 1 (Table 1) in postoperative assessment at 6th month. One patient (%7.1) in group 1 stated that there is no improvement after surgery. Likewise when the scar score performed by the evaluator surgeon was examined in 6th month, The Vancouver scar scale was 14 in group 1 and 4 in group 2, in Group 1, the values of the pa-tients ranged from 0 to 4, and the mean value was 1.0. In Group 2, the values ranged be-tween 0-2 and the mean value was 0.3 (Table 2).

According to these findings, overall patient satisfaction was clinically significantly higher in group 2 when compared with group 1 and the scar was found to be clinically sig-nificantly less in group 2 when compared with group 1, even though there is no statistical significance (p>0.05) between 2 groups in overall patient satisfaction and scar score, proba-bly due to limited number of patients in groups.

No significant complications were observed in patients in either group. One patient in group 1 required revision to obtain further lifting.

Figure 2. All photographs were taken a) pre-operatively , b) on the 6th day before the suture removal, c) and at the 6th months postoperatively

Figure 3. Before and 6 months after photos demonstrates providing volume on the nasal spine and under the base of the nose, which can improve the upper lip convexity that causes causes an aged, simian appearance, and increase the nasolabial angle as well as shortens the lip.

DISCUSSION

With the increase in the average life expectancy in the world and the more accessible aesthetic surgery opportunities against the effects of aging, the number of aesthetic facial surgeries are increasing. Due to the fact that the upper lips continue to look old despite facelift and other rejuvenation surgeries, lip lift surgeries are becoming more common (11). As age progresses, the upper lip loses its youthful appearance, loses its volume and fullness, lengthens vertically, the visibility of the teeth decreases, the philtrum straightens, the ver-million becomes thinner, the cupid's bow disappears, the eversion of the lip decreases. However, the concern of visible scarring and over exaggerated unnatural results still causes surgeons to approach this procedure with caution. With the technique we described in our study, we aimed to reduce the tension in the suture line by suspending the upper lip dermal flap under the subnasale and columella. Our technique is based on the classic bullhorn inci-sion with flap suspansion modification.

Located in the center of the face, philtrum is

related to important landmarks such as the philtrum, vertical facial proportion, upper tooth show. A short philtrum, prominent and symmetrical philtral columns and Cupid's bow has a significant impact on facial expressions (12,13). Although there are various lip lift surgical techniques successfully applied for this purpose, it is particularly important for patients to be informed in detail about the risk of scar formation before the operation, to draw and simulate the area to be excised in front of the mirror, in terms of postoperative patient satisfaction. This process is helpful to evaluate whether the patient's expectations are realistic or not. The most significant disadvantage of this procedure is skin scars, such as hypertrophic, atrophic, invaginated scarring or discol-ored scars (14-17). Therefore, even with a good surgical planning, minimizing scar for-mation is one of the most important goals in this surgery. That's our technique is based on the classic bullhorn incision modified with upper lip based dermal flap for suspension that is focused on reducing tension in the incision line.

In a study, it was claimed that there is a significant relationship between dermis thick-ness and hypertrophic scar (18). Although the thinnest skin on the face is in the eyelid (19,20), it was reported that upper lip dermis was measured thinner than nose region in the male and female patients (21). This data may explain the low scarring and high satisfaction rates in our patients.

It is observed that the nasolabial angle increases, with the increase in the volume on the nasal spine, which is one of the 4 application areas where the dermal filler is injected for the purpose of non-surgical rhinoplasty and contributes to the nasal tip elevation (22). Leav-ing the dermal flap in the upper lip using for suspension, can additionally provide volume on the nasal spine and under the base of the nose, which can improve the upper lip convexity that causes an aged, simian appearance, and increase the nasolabial angle (Figure 3).

Therefore, we can say that the fullness under the subnasale creates an aesthetic im-provement as important as shortening the lip. Some lip lifting techniques (23,24) rely on full thickness skin resection, muscle suspension, excision, or plication to reduce tension on the suture line on the contrary subdermal tissue and muscle resection is not performed in our technique, all tissues are used to create volume.

The main limitations of our study are retrospective design and the limited number of patients. Future investigations that include a large number of patients will contribute pre-cious data to the literature on lip rejuvenation.

CONCLUSION

It has been concluded that lip lift surgeries performed using the dermal suspension flap technique can contribute as a valuable alternative to the classical excision method, due to both higher overall aesthetic patient satisfaction and less scarring in our patients.

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