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A New Perspective to the Periorbital Aesthetics: Bella Eyes

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Abstract

Introduction The term beautiful eyes can be defined as youthful, brilliant, vivid, and attractive eyes. The anthropometric findings about beautiful eyes may differ according to gender or race. In order to form such a beautiful eye, a variety of surgical, nonsurgical, or combination methods for periorbital region rejuvenation have been proposed. The surgical methods include coronal/peritrichial, endoscopic, upper and lower eyelid, or transconjunctival incisional procedures. Neuromodulators, fillers, and laser treatments are some of the nonsurgical approaches. Regardless of the method, while treating this particular area, the aesthetic unit concept should always be taken into consideration.

Methods We attempted to combine an endoscopic dynamic canthopexy procedure with endoscopic temporal and brow lift, which we call "bella eyes" to achieve a more attractive look, especially in young people who desire a slanted eyelid. We aim to share our clinical experience from 35 patients and the technical details of the bella eyes procedure.

Results Patient satisfaction was high, and the endoscopic technique eliminated all of the minor deformities and provided excellent harmony through each subunit of the periocular area with minimal discomfort and well-hidden scars.

Conclusion We believe that this procedure is a good way to achieve a beautiful eye in young women.

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Keywords Periorbital rejuvenation · Bella eyes · Endoscopic brow lift · Endoscopic dynamic canthopexy · Slanted eyelid

Introduction

The term beautiful eyes can be defined as youthful, brilliant, vivid, and attractive eyes [1]. The anthropometric findings about beautiful eyes may differ according to gender or race. For example, sharp and acute eyes of male celebrities seem to be very attractive in Caucasian culture, whereas this is not generally accepted in the Asian aesthetic concept [2-8].

Periorbital aesthetics is a constantly changing field in facial aesthetic surgery. There are a variety of surgical, nonsurgical, or combination methods for periorbital region rejuvenation [9-16]. The surgical methods include coronal/peritrichial, endoscopic, upper and lower eyelid, or transconjunctival incisional procedures [17-21]. Neuromodulators, fillers, and laser treatments are some of the nonsurgical approaches [22-24]. Regardless of the method, while treating this particular area, the aesthetic unit concept should always be taken into consideration. Because modification of one zone affects other zones, the position of the brow, shape of the eyelids, and the lateral orbital region (temple) have to be rejuvenated harmoniously [25].

Younger people's desire to achieve a more youthful and attractive look pushed aesthetic surgeons to develop newer

techniques. Some of our patients who underwent endoscopic brow lift (rotation) and temporal lift were not satisfied with their expression or shape of their eyes and asked for a more slanted eyelid or almond-shaped eyes. We attempted to combine an endoscopic dynamic canthopexy procedure with endoscopic temporal and brow lift, which we call "bella eyes" to achieve a more attractive look, especially in young people.

In this manuscript, we aim to share our clinical experience from 35 patients and the technical details of the bella eyes procedure.

Surgical technique

All of our procedures were performed under general anesthesia by the senior author. Four vertical 1.5-cm-long incisions were placed right behind the hairline: two of them were 7 cm lateral to the midline (A) and the remaining were 12 cm lateral to the midline (B) to provide access to the frontal, temporal, infraorbital, and lateral canthal regions (Fig. 1). In either case, local anesthesia consisting 40 mL of 1% lidocaine plus epinephrine (diluted 1:100,000) was injected into the incision sites and the proposed dissection zones in the frontal, temporal, and periorbital areas.

The dissection began from point A, and 2 cm of subcutaneous dissection caudally was performed to expose an appropriate amount of fronto-galeal–periosteal composite tissue for fixation. The dissection was continued subperiosteally, caudal to the supraorbital rim with the aid of a curved bone elevator. Special care was taken to stay lateral to the supraorbital nerve while incising the periosteum on the supraorbital rim to avoid medial brow elevation. The procedure continued with point B, preparing an appropriate amount of superficial fascia initially for fixation and then immediately superficial to the deep temporal fascia caudally, taking care to leave all the fat tissue on the flap, especially just a few centimeters above the zygomatic arch. These two planes were joined releasing the conjoint tendon at the temporal crest. The dissection was extended laterally and downwards until the sentinel vein and the zygomaticotemporal and zygomaticofascial neurovascular bundles were exposed. The lateral border of the dissection was the sentinel vein. Medially, the lateral retinaculum was exposed, released by subperiosteal dissection from the inner aspect of the lateral orbital rim for the dynamic canthopexy procedure. Dissection was carried bluntly into the eyelid to a vertical line passing from the lateral limbus of the eye again and subperiosteally. Laterally, the endoscopic dissection over the zygomatic arch extends to the level of the masseter muscle (Fig. 2). The whole surgical dissection was carried out endoscopically with guidance of anatomical principles as defined by Cornette de Saint Cyr B1 et al. [26].

After dissection was completed on both sides, fixation of each component in this particular process is held simultaneously to check the symmetry. Our preference of fixation method for the paramedian of the brow/forehead is to create a monocortical bone tunnel and use a 2/0 ethibond suture. We believe that it is crucial to pass the suture from the middle one-third of the lateral retinaculum, providing the desired slanted eyelids. Fixation of the lateral retinaculum was performed with a 3/0 ethibond to the deep temporalis fascia (video 1). For the rejuvenation of the temporal area, the superficial temporal fascia was fixed to the deep temporalis fascia using a 3/0 ethibond suture.

Fig. 1 Preoperative planning of the incision sites. Point A is 7 cm away from the midline, and Point B is 12 cm away from the midline

Methods

The patients were selected from a retrospectively generated database of patients who underwent the above-described combined endoscopic intervention, all of which were performed by the senior author between 2018 and 2019. Young women in their second and third decades seeking a

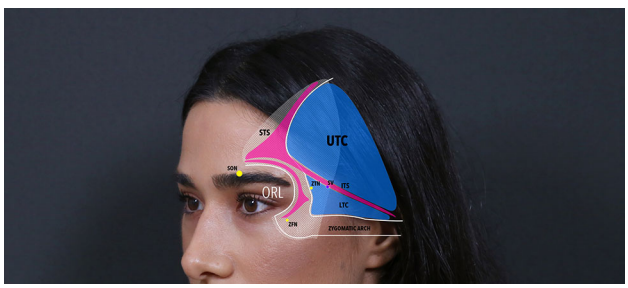

Fig. 2 Extention of the endoscopic dissection is illustrated as a white dotted zone in the picture. Abbreviations are listed below. *SON* supraorbital nerve, *ZFN* zyygomaticofacial nerve, *ZTN* zygomaticotemporal nerve, *SV* sentinel vein, *UTC* upper temporal compartment, *ITS* inferior temporal septum, *LTC* lower temporal compartment, *ORL* orbital retaining ligament

more slanted eyelid presenting minimal-to-moderate periorbital deformities such as sagging of the lower eyelids, brow ptosis, or tear trough deformities were selected to form a homogenous patient profile. Patients with at least 6 months of follow-up were included in the study. Some of the patients had other adjunct procedures such as endoscopic midface lift (two patients), cheek lift (seven patients), and fat grafting (two patients). Patients for whom we could not obtain proper photographic follow-up for at least 6 months were excluded. None of our patients had botulinum toxin injection for at least 5 months before the procedure.

Sixteen patients had minimal brow ptosis, six patients had minimal-to-moderate sagging in their lower eyelids, and 24 patients had a tear trough deformity. Two of the patients had a history of incisional canthopexy procedure before this operation.

All of the patients signed an informed consent form for the aforementioned procedures. The results were evaluated by the patients 6 months postoperatively using a side-by-side comparison of their preoperative and postoperative images, and they were asked to be objective and rate their results on a scale of 1 to 4, where 1 was poor, 2 was fair, 3 was satisfactory, and 4 was excellent.

Results

Thirty-five patients were included in the study. All of the patients were women. Patients were in their second and third decades of life (age range 23–38 years), with a mean follow-up time of 10 months (range 6–15 months). Among the patients, two of them were not satisfied with the result. One patient had a more slanted eyelid, and we revised the canthopexy procedure. The other patient had asymmetry in the slant of the eyes. However, the length of her lower eyelid was also asymmetric. Five patients rated the result as fair, eight patients reported a satisfactory result, and 20 reported an excellent result. Fourteen patients had conjunctival edema and 20 patients had minimal bruising on the lateral aspect of eyelids. Both of these complications resolved in 10 days. Most of our patients experienced temporary numbness in the temporal region, and it took 4–6 months to heal spontaneously. None of the patients had wound healing problems, hematoma, infection, or alopecia at the incision sites. Ten patients reported blurring, which resolved in 3 weeks.

All of the patients had an increase in their brow tilt and eyelid tilt, and this was maintained throughout the follow-up period. Sagging in the lower eyelids was treated in most of the patients. All patients also had their tear trough eliminated. There were two patients with scleral show that resulted from the previous operations, and these findings disappeared after our intervention. Pre- and postoperative views and a video are presented in some of our patients (Figs. 3, 4 and video 2).

Discussion

Attractive eyes are one of the most important features in facial beauty. There are several procedures to enhance and beautify the eyes that can be performed by aesthetic and plastic surgeons. Regardless of these methods, the key to the success of an aesthetically pleasing eye is the aesthetic unit principle, which restores harmony between overall facial structures [25].

The term “bella” relates to the Italian and Latin word for beautiful and the name Belle, which means beautiful in French. With this particular combination of endoscopic interventions, our attempt was to improve and/or relocate each of the periorbital aesthetic units as well as form an attractive expression. In this study, we suggest “bella eyes” as a descriptive term for periorbital rejuvenation procedures, consisting of an endoscopic brow lift, dynamic canthopexy, and temporal lifting.

Anatomical features of a beautiful eye may vary according to gender, age, ethnicity, and cultural perceptions. Despite the variety of anthropometric measures among humans, there are still some general principles that are common to aesthetically accepted eyes. A fuller brow with a slight elevation of the lateral brow has a more youthful appearance. In Caucasians, a definite lateral superiorly oriented slanting of the eyes accentuates the beauty of the eyes [1-8]. The endoscopic approach we applied for our patients provided successful aesthetic contouring of the periocular aesthetic unit with minimal scarring and a quick recovery time.

A novel concept on periorbital aesthetics has been explained by Gulbitti et al. [27]. Their morphometric clinical analysis leads to a concept called “the orbital oval balance.” According to this concept, the eye should be centered in an oval defined by the lid–cheek junction and the eyebrow to constitute an attractive appearance. A high lid–cheek junction with low eyebrow position can be found in a youthful face and is suggested to be essential for the perception of beauty. They also mentioned that the lid–cheek junction and brow should be equidistant to the pupil. We believe that the bella eyes procedure can be effective in restoring such a relationship between the lid–cheek junction and eyebrows with the aid of brow and temporal lifting. In our study, we also focused on downslanting of the lateral canthus which we think is very important to form an oval eye.

Numerous methods have been designed to change the position of the lateral canthus of the eye to form a slightly

Fig. 3 **a** A 27-year-old female desiring better looking eyes (left) underwent the bella eyes procedure. Seven months after the procedure, she was quiet happy with her palpebral fissure and brow position (right). **b** Tilt on canthal and brow areas is marked preoperatively(left) and postoperatively(right) on the patient depicted in Fig. 3a. Line A refers to the brow, and line B refers to the intercanthal axis

mongoloid slant [27-29]. Canthopexy procedures can be categorized as static or dynamic. Static canthopexy involves strengthening the suspension of the eyelid without altering the position of the lateral canthus. In dynamic canthopexy, the position of the lateral canthus is usually relocated a few millimeters superiorly. With this maneuver, all three components of the suspensory lateral canthal system (lateral retinaculum, middle lamella, and superficial anterior lamella) are treated [30]. The previous techniques described for this particular surgery were performed using palpebral skin, bicoronal incisions, and transconjunctival incisions [29-31]. This method is well accepted, especially in the young population who show minimal aging and who do not desire a scar around the eyes. Other open incisional methods to form a canthal tilt are not accepted, except for young applicants who are seeking slanted eyes. Endoscopic dynamic canthopexy should be considered in this population.

In 2012, Trussler and Byrd proposed endoscopic lifting for the management of lateral canthal and lower eyelid position [32]. The authors used additional sutures at the lateral canthus as an adjunct to endoscopic midface and brow lift in selected patients who presented with lower eyelid deformities. More recently, Bernardini et al. have

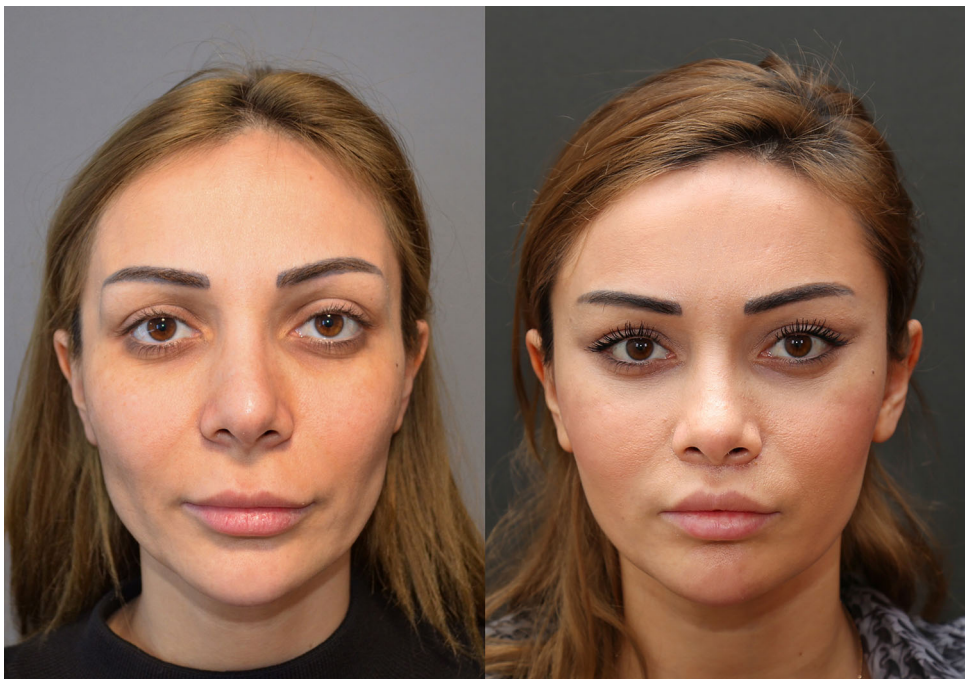

Fig. 4 This 30-year-old female presented with downslanting of the palpebral fissure. She thought she looked tired and unhappy (left). She received the bella eyes procedure. At the end of 8 months, she was very satisfied with the change in her expression (right)

described an endoscopic method for management of lateral canthal and lower eyelid position at the time that endoscopic face lifting is performed [33]. The patients were middle-aged, with a heterogenous descent of periocular aesthetic units that were treated using different ancillary rejuvenation methods. All of our patients were young women who only wanted to have an attractive eye, and a standard method of surgery was applied to all of them. Our primary intention is to suggest the bella eyes procedure as a new perspective among young patients to achieve attractive eyes and a vivid expression. Limitations of our study include a short postoperative evaluation period. Moreover, postoperative results could have been objectively assessed rather than using patients' subjective judgement.

Conclusions

We combined endoscopic brow lift and temporal lift with endoscopic dynamic canthopexy procedures in young women who desire to have beautiful eyes. We named this procedure "bella eyes." Since the initiation of our procedure, it has gained a lot of attention among young women. The recovery time is quite short. Patient satisfaction is high, and the endoscopic technique eliminates all of the minor deformities and provides excellent harmony through each subunit of the periocular area with minimal discomfort and well-hidden scars. We believe that this procedure is a good way to achieve a beautiful eye in young women.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflicts of interest to disclose.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent All patients signed an informed consent.

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