Lip Lifting: Unveiling Dental Beauty

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Abstract

The focus for the achievement of complete success in the esthetic zone has traditionally been on addressing deficiencies of intraoral hard and soft tissue. Often, these deficiencies are accompanied by esthetic concerns regarding the lips that are routinely neglected by the dental team. A predictable plastic surgery technique – the lip lift – has been used for decades to enhance lip esthetics by shortening the senile upper lip to achieve a more youthful appearance. Over the years, this technique has been refined and used in many different ways, allowing its routine incorporation into full facial esthetic planning. Through restoration of the upper lip to its optimal position, the artistry of the dentist and dental technician can truly be appreciated in the rejuvenated smile. By the introduction of this minimally invasive surgical technique to the dental community, patients stand to benefit from a comprehensive orofacial approach to anterior dental esthetic planning.

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Ideals of beauty

Female fashion models epitomize society's idea of youth and attractiveness.[1] The pages of fashion and popular culture magazines are filled with close-up facial images that highlight the mouths of beautiful women. These models usually have similar facial esthetic traits, especially regarding the display of the anterior teeth in relation to the upper lip.

The concept of increased incisal display to project a youthful appearance is nothing new to traditional prosthodontics and esthetic dentistry alike. More recent publications[2] have elaborated on incisal display, lip shape[3] and volume, and gender differences,[4] yet there has been no proposed dental treatment modality to manipulate the extraoral soft tissue to meet these esthetic values when they do not exist naturally. The parameters that we as dentists have been trained to address are unfortunately determined by structures that change as a consequence of the natural aging process. Specifically, the muscles and skin of the upper lip become lax, creating a curtain that slowly but inevitably hides the carefully calculated and meticulously executed anterior dental restorations.[5]

Beauty and the lips

It is often stated that beauty is in the eye of the beholder, even though the scientific community has reported certain characteristics that exemplify female beauty.[6-9] While beauty has been shown to be dependent on the observer, background (experience), social status, and education,[6] several authors have found that childlike features mixed with mature attributes such as large eyes, prominent cheekbones, voluminous lips, thin eyebrows, and small noses and chins, are seen to be beautiful in women.[10] From the dentist's perspective, studies on facial esthetics have focused heavily on tooth size, tooth shape and shade, smile composition, and incisal display.[11-17] What is missing from the dental perspective is the acknowledgment of how the lips age over time. It is known that a broad smile is considered to be feminine and expressive; that full lips convey youth, health, and attractiveness; and that thin lips convey the opposite.[6] Indeed, Sforza et al showed that not only is the mouth a major determinant of overall facial esthetics, but the lips specifically are very important to facial beauty.[18]

Common characteristics of the lower facial third that are shared by high fashion models and attractive young women include an "inverted upper lip;" a wide mouth; voluminous lips;[18] slightly protruding, well-formed, slightly inclined anterior teeth;[19] and, above all, a large amount of incisal display at rest. This increased incisal display directly results from the combined ideal proportions of the factors previously enumerated in this article. Specifically, Al-Habahbeh et al have identified four factors that determine incisal display at rest, and have assigned these determinants the acronym LARS (lip length, age, race, and sex).[4] At rest, individuals with long upper lips show more mandibular teeth, while those with short upper lips display more of their maxillary incisors.[4] Similarly, less of the maxillary incisors are visible at rest as people age, and an increasing amount of the mandibular anterior teeth begins

to show.[20] In fact, the average 30-year-old female displays 3.0 to 3.5 mm of the maxillary incisors; at 50 years of age, she displays 1.0 to 1.5 mm; and by the age of 70, the lip is likely to be covering the teeth entirely.[21] Connor et al showed that African Americans display less incisal tooth structure at vertical dimension at rest (VDR) than Caucasians. Further, females show double the height of teeth at VDR compared to males.[4]

By understanding how the perioral region ages over time, the dental practitioner is a crucial member of the full facial beauty team; striving to give the patient not only young-looking teeth, but also a youthful smile and balanced face.

Change the teeth, the lip, or both?

Regarding denture fabrication, traditional prosthodontics recommends arranging artificial dentition so that 2 mm of the maxillary central incisors are displayed at rest, with the other anterior teeth positioned esthetically from this baseline.[22] These same ideals are used as a basis for treatment planning restorations of the natural teeth. Even though this approach may seem to give the patient a more youthful appearance, the reality is that it changes the lower facial proportions in an unnatural way for patients with a senile upper lip. Why are we, as clinicians, designing one of the most important aspects of the face based on a structure (the upper lip) that changes constantly with age?

Of the four LARS determinants, aging is experienced by all individuals, regardless of their starting lip length, race, and sex.[23] The loss of elasticity of the upper lip, combined with the loss of volume of the anterior teeth due to acid erosion and age-related wear, leads to less of the maxillary teeth and more of the mandibular teeth being exposed.[24] For the denture patient, this aging scenario necessitates fabrication of an unnaturally long anterior denture flange to compensate for reduced maxillary height and a "drooping" upper lip. In a patient receiving a treatment plan for anterior veneers, the reduced natural tooth volume and aged lip would steer the dentist to elongate the restorations in order to achieve the classic 2 mm of incisal display, leaving the patient with a dolichocephalic appearance and an altered occlusal scheme. Often patients with a senile upper lip will present to the dentist for more tooth display but to the plastic surgeon for more vermillion border display. Most plastic surgeons will add a hyaluronic acid filler, which will give more "pink lip" show but will add volume to the lip, making it droop even more and, therefore, lengthen the philtrum, leaving the patient looking old and unnatural. It is for this reason that many clinicians with different specialties should educate each other and work as a team. Clinicians who work independently are not able to achieve optimal facial esthetic results.

The lip lift

To overcome the above-mentioned effects of aging and still provide a naturally esthetic dental restoration and youthful lip, is it possible to change the position of the lip during the initial treat-

ment planning process to bring the lip to its ideal youthful position? Surprisingly, the answer has been yes for nearly three decades, yet few dental professionals are aware that the option exists to reposition the lip, and few plastic surgeons feel the need to consult with dentists about this procedure. The lip lift, a procedure used to shorten the upper lip for men and women, involves removing tissue from just below the base of the nose in order to reposition the lip, resulting in a more youthful appearance by revealing more anterior tooth display at rest and creating the appearance of a more voluminous vermillion of the lip without lip filler (Figs 1 and 2). The procedure causes teeth at rest to show, but still allows the patient to have normal closing and touching of the lips. Although this procedure has been used with success for many years, one drawback is the potential formation of an external scar that tends to be more pronounced in younger patients (Fig 3).[25] In 2011, a new technique was described in the scientific literature[26] that leaves no scar and can be performed under local anesthetic at an affordable cost. The "no-scar lip-lift" involves a small incision inside the nose, followed by a suture being "passed through the orbicularis oris muscle at a level approximately one-half the distance from the columellalabial junction to the white roll of the upper lip."[26] This technique preserves normal function of the orbicularis oris muscle while allowing the surgeon to position the lip at the desired height. Although the no-scar lip lift is less invasive, in clinical practice most plastic surgeons prefer the predictability of the external excision-based technique for long-term results.

There are plenty of "non-filling" plastic surgery techniques used to improve the perioral region that have proven to be successful and should be included in more dental treatment plans and smile designs.[27]

Conclusion

Dentists have become well versed at using digital smile design[28], incorporating state-of-the-art materials, and involving the dental technician as a central member of the dental team in order to deliver more natural restorations. With today's esthetically minded patients getting their inspiration from top fashion magazines, esthetic dentists need to be aware of available techniques, even those that venture outside the scope of the profession. In order to fully plan, design, and create the ideal youthful smile, it is clear that the lip must be addressed. This means that plastic and oral maxillofacial surgeons ought to become part of the interdisciplinary orofacial esthetics team. Well-designed and well-proportioned dental restorations are critical to the delivery of a near ideal youthful smile. By incorporating a technique to lift the curtain that enrobes the anterior teeth, clinicians can now bring patients from just shy of their desired results toward a smile that encroaches on perfection.

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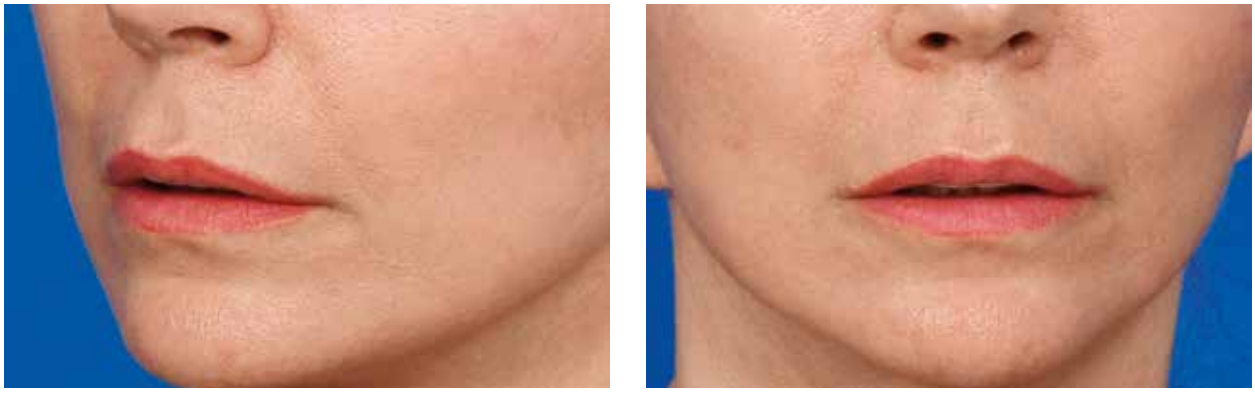

Fig 1 A 50-year-old patient presents wanting to show more tooth display at rest, reduce the length of her upper lip, and show more pink lip.

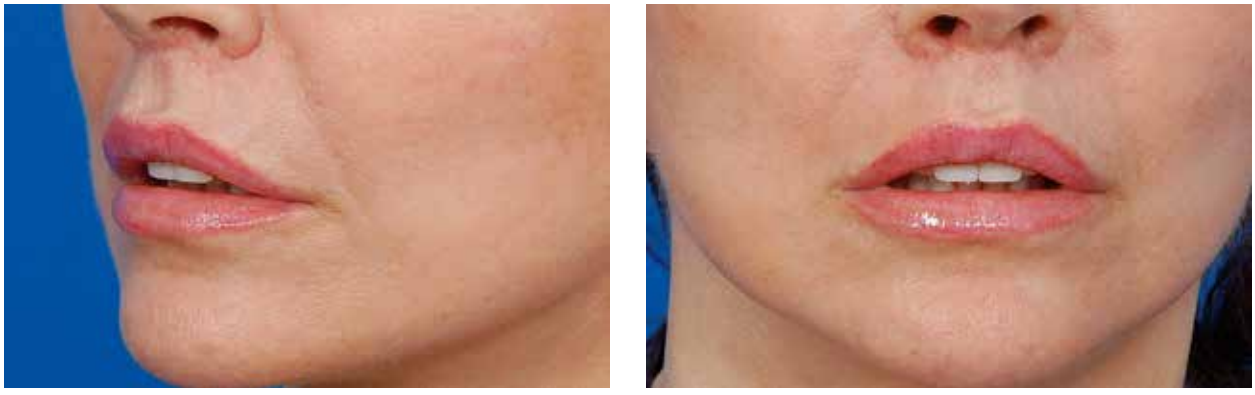

Fig 2 The 50-year-old patient 6 months after the external lip lift showing ideal tooth display at rest and a youthful inverted upper lip with increased visible vermillion.

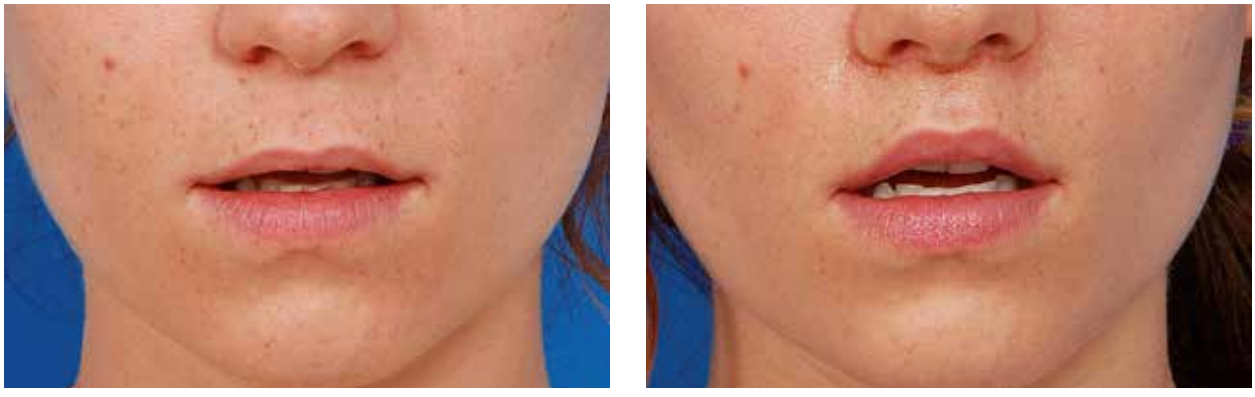

Fig 3 A 25-year-old patient with a senile upper lip pre-op **(left)** and 1 week post-op **(right)**. Notice the hidden incision line directly under the nose, which can sometimes be a problem for certain patients.

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