The role of orthodontics as an auxiliary tool to lip augmentation *

O papel da Ortodontia como auxiliar na estética labial

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Abstract: In recent years, facial esthetics excellence has become a major focus in health professional offices and for the public worldwide. Among the main concerns of the patients is lip augmentation, since it has been associated with beauty and youth. This procedure has been increasingly performed and studied by dermatologists and plastic surgeons. Although good outcomes for lip augmentation have been achieved with different techniques, literature shows several complications and collateral effects. This paper demonstrates, through two clinical cases, how Orthodontics may be an excellent tool to assist in lip augmentation, highlighting the need for an interdisciplinary approach to enhance a more effective strategy to achieve facial esthetics goals.
Keywords: Dermatology; Esthetics; Lip; Lip products; Orthodontics

Resumo: A busca pela excelência na estética facial tem sido uma realidade nos consultórios dos profissionais de saúde. Dentre os aspectos procurados pelos pacientes, destaca-se o aumento do contorno dos lábios, cada vez mais realizado e pesquisado por dermatologistas e cirurgiões-plásticos. Embora bons resultados sejam alcançados com os mais diversos procedimentos para preenchimento labial, a literatura mostra diversas complicações e efeitos colaterais. Este artigo demonstra, por meio de 2 casos clínicos, como a Ortodontia pode representar uma excelente ferramenta para auxiliar no aumento do contorno dos lábios, tornando a abordagem multidisciplinar uma estratégia mais efetiva na conquista de bons resultados clínicos.
Palavras-chave: Dermatologia; Estética; Lábio; Ortodontia; Produtos para lábios

INTRODUCTION

The demand of adult patients for esthetic treatments is currently very high. Many times inspired by the beautiful smiles and plump lips of artists in the media, patients are increasingly interested in repairs that involve the smile and lip contour. While Orthodontics plays a fundamental role in the first aspect, Dermatology and Plastic Surgery stand out in the second.

The literature lists different techniques for lip filling, describing advantages and complications inherent to each procedure and material utilized, explaining the unpredictability of some of the results obtained. [1-7] However, in some clinical situations, the reason for lack of vermilion lip area exposure may be in inadequate teeth position, making orthodontic treatment a viable alternative as a lip filling aid.

Therefore, the objective of this article is to illustrate, by means of reports on two clinical cases, how Orthodontics may represent an excellent tool to aid the dermatologist in lip contour augmentation, making the interdisciplinary approach a more effective strategy to achieve good clinical outcomes.

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CASE REPORT

Usually anterior teeth (incisors) are positioned so as to offer balance between lips and tongue. Physiologically, the external surface of the lower anterior teeth should lightly touch the internal face of the upper teeth, providing a good functional and esthetic relationship between them. In figure 1, a side view shows a good example of a harmonious face, with adequate positioning of upper and lower teeth and, consequently, of the lips.

When there is inadequate positioning of incisors, mainly the lower ones, the lips may present several situations that are quite unfavorable from the esthetic viewpoint. Figure 2, for example, demonstrates a backward positioning of the lower incisors, easily visible by the increased distance between the external face of lower teeth and the internal face of upper teeth. Consequently, the lower lip tends to get caught between the incisors, generating an important lack of support and diminution of the vermilion part of the lip.

Figure 3 illustrates the first clinical case, a 38-year old male patient with important loss of lip support, secondary to incorrect positioning of incisors. Orthodontic planning consisted of utilization of a fixed prosthesis glued to the dental surfaces and stainless steel orthodontic arches to promote dental movement. During treatment, the teeth were aligned and leveled, the horizontal relationship of incisors was corrected by means of forward movement, mainly of the lower teeth, correcting mastication and dental occlusion. In addition, after 2 years and 1 month of treatment, the positive esthetic impact can be noticed in the positioning of lips, especially the lower lip, with clear increase in contour and volume. By means of radiographic superposition, a valuable resource to evaluate alterations provided by orthodontic treatments, the impact of correct dental positioning on lip contour can be observed.

The second clinical case, a 37-year old male patient, demonstrates the direct association of dental problems and lack of lip vermilion exposure, similar to the previous case. As illustrated in figures 1 and 2, due to increased distance between lower and upper incisors, there is a diminution of lower lip vermilion exposure, creating a quite unfavorable esthetic and functional condition. Orthodontic planning was similar to the previous case where orthodontic prostheses were used, although only on the lower arch. During treatment, the inadequate positioning of lower incisors was corrected by means of teeth advancement techniques. After 1 year and 11 months of treatment, occlusion was corrected and lip esthetic impact was rather favorable, with ample acquisition of lip surface, making his facial esthetics rejuvenated and attractive (Figure 4).

DISCUSSION

Some studies show that lip volume is related to beauty and youthfulness and that the current beauty standard for the "new century" reveals a trend for fuller, anteriorly positioned lips. [8-11] Therefore, these esthetic procedures have been increasingly sought by patients and consequently studied and researched by professionals of different areas.

News techniques and materials for lip filling have been introduced to the medical community and their patients at surprising speed. There are many techniques and products available in the market and they may basically be divided into temporary, semi-definitive and definitive filling agents, implants, neurotoxins, lasers and micropigmentation. [2]

Filling agents are the most popular and as a result their application techniques are the most widely utilized for lip augmentation. [2] Such products present advantages and disadvantages and, if on the one hand, temporary agents do not last long, on the other

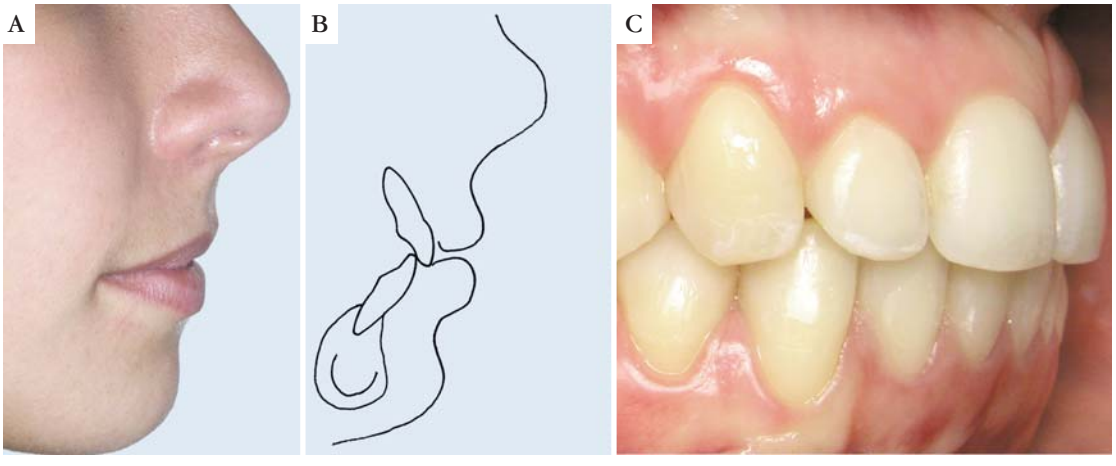

Figure 1: A. Integumentary contour of a balanced face; **B.** Cephalometric tracing of mandibular symphysis, anterior teeth and integumentary tissue; **C.** Normal biting relationship of anterior teeth

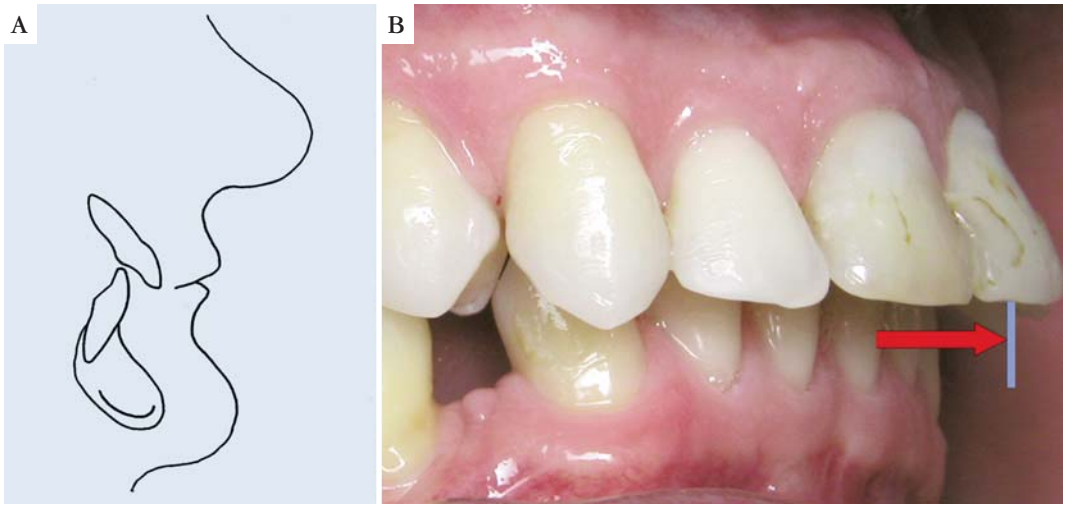

Figure 2: A. Cephalometric tracing of mandibular symphysis, integumentary tissue and an abnormal biting relationship of anterior teeth; **B.** Increased dental overjet

hand, they have fewer side effects. The semi-definitive and definitive products obtain more lasting or even permanent results, although with many adverse effects. As lips are complex anatomic structures, it is advisable for patients to be initially subjected to reversible procedures (with temporary materials) for posterior option or not for permanent products. [2]

Most of the studies that investigate the efficacy of these products use the degree of satisfaction of patients as the studied variable and, in this context, promising results have been demonstrated. [12-13] It is not possible, however, to disregard the adverse effects inherent to each of the techniques developed, such as inflammatory processes, foreign body reactions and nodule formation. [6,7]

Besides these factors, the need for preparation of a detailed diagnosis is pointed out, investigating not only labial aspects, but also dental characteristics. Some etiological factors of lip support loss and occurrence of thin lips, for instance (similar to skin aging causes) are already known to dermatologists: genetics, age, ethnic characteristics, sun exposure, smoking and gravity. [2,14] In addition, faulty dental positioning has a strong impact on lip esthetics. Both clinical cases presented demonstrate classical examples of these problems and how the orthodontic treatment modifies dental position, resulting in optimal lip contour, showing that the teeth play a role of fundamental importance in lip support. [15,16]

In order to obtain these results, it was necessary to use fixed orthodontic prostheses glued to the dental surfaces. By means of sequential and programmed change of stainless steel orthodontic arches, it was possible to move the teeth in a biological and consistent manner.

For decades, many patients have been unwill-

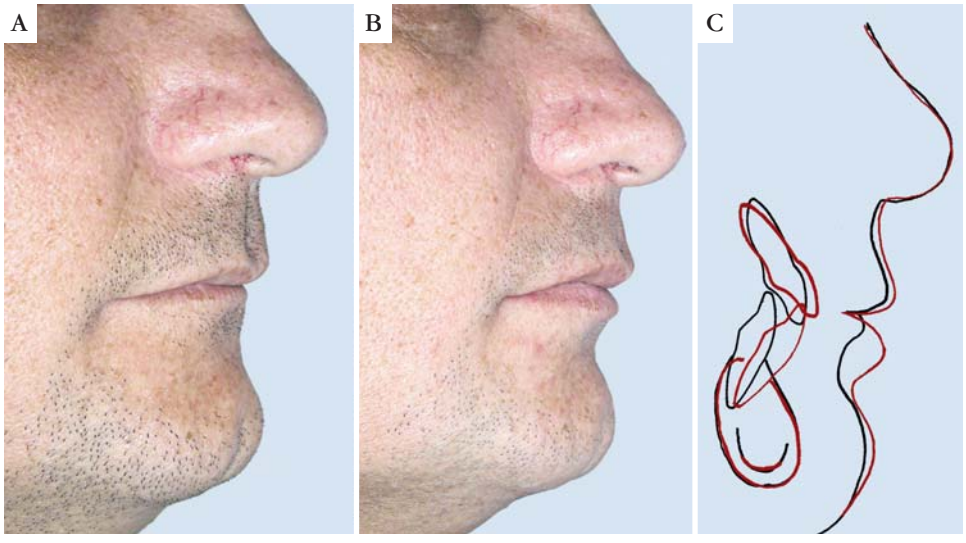

Figure 3: A. Facial contour before orthodontic treatment; **B.** after orthodontic treatment; **C.** cephalometric superposition in black (before treatment) and in red (after the treatment)

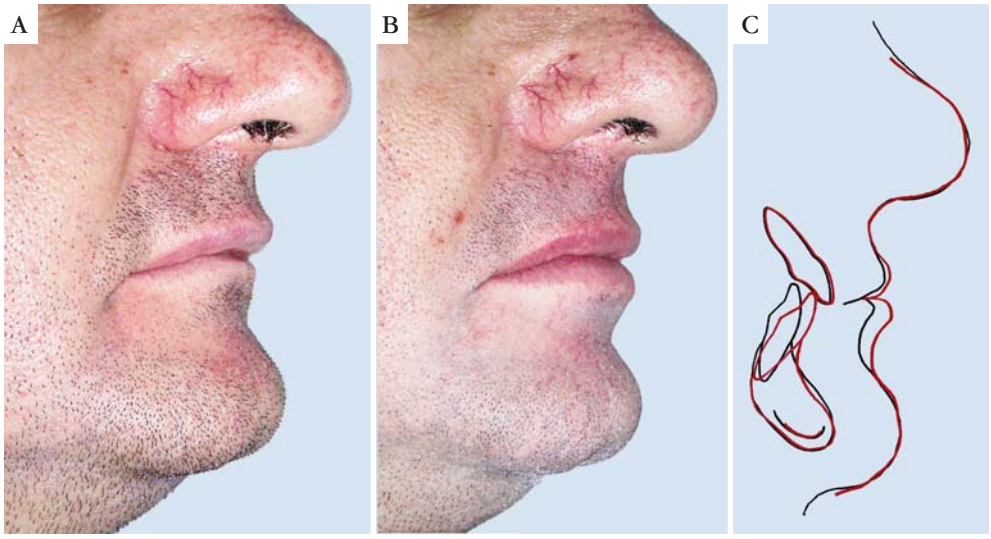

Figure 4: A. Facial contour before orthodontic treatment; **B.** after orthodontic treatment; **C.** cephalometric superposition in black (before treatment) and in red (after the treatment)

ing to undergo orthodontic treatment due to the unesthetic aspect of some of the fixed prostheses, mainly the metallic ones. At present, with technological evolution of biomaterials, orthodontic devices have evolved into smaller and more attractive pieces (made of porcelain and sapphire), as well as invisible devices (metallic parts glued on the tongue side of teeth or removable plaques made of transparent materials). This means more comfort, discretion and esthetics for the patients.

While material evolution has provided such benefits, biological limitations still demand a significant total time to obtain results in orthodontic treatments. Both clinical cases presented had a mean duration of 2 years, a fact that sometimes discourages some patients from choosing this therapeutic option. From another point of view, dermatological fillings present as a marked benefit the most immediate result, which can be achieved in an interval from a few days to 12 weeks, in cases without complications. [2,12,13]

Besides the "time" aspect, which should be carefully evaluated, durability of the therapy used should be considered, since when temporary lip filling compounds are chosen, the procedure will have limited duration and will need to be repeated to maintain the desired result. In contrast, increased lip volume by means of orthodontic treatment lasts longer and is regarded as permanent in several clinical situations.

It should be highlighted that increased lip contour is not the primary objective of Orthodontics, but rather the correction of dental positioning, masticatory function and smile esthetics. Moreover, when the occlusion is corrected, better lip positioning is promoted, thus aiding future lip filling techniques. Finally, as it deals with orthodontic dental movement, no kind of side effect or adverse reaction will occur on the lips, making it an optimal clinical alternative.

Another aspect that may be compared between Orthodontics and lip filling techniques is the predictability of the outcome. In both, the certainty of excellent results is unknown; however, when an adequate global diagnosis is made (including dental analysis), it is possible to foresee the outcome in a consistent manner. The analysis of the clinical cases described corroborates this idea and highlights the importance of selecting the best technique according to the individual problem of each patient. What if, in the presented cases, instead of the orthodontic treatment a lip filling technique had been used? Would the outcome be better, worse or similar? There is no answer to this question, but it can be assured that in a global scope, the chosen treatment provided good facial and dental esthetics allied to good masticatory function. Furthermore, in the cases studied, the simple use of filling agents would probably achieve poor results, of very low duration and high cost, that is, without correcting the primary cause of the problem (bad dental positioning). Investing in lip filling techniques would be a waste of resources.

The main point is that there is no best procedure or the perfect technique to perform lip augmentation. The ideal alternative is coordinated action by several specialties (medical and dental) in diagnosis and planning to optimize the esthetic outcome and diminish adverse side effects as much as possible. ❑

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