LOWER INCISOR EXTRACTION AS A THERAPEUTIC OPTION IN DENTISTRY A CASE REPORT

LORENA DA SILVA **TAVARES**[1*], JULYANO VIEIRA DA **COSTA**[2], RICARDO GOBBI DE **OLIVEIRA**[3]

1. Dentistry Student, Faculty Inga; **2.** Dental Surgeon, Master of Dentistry, State University of Maringa and Faculty Inga; **3.** Dental Surgeon, PhD in Orthodontics, Faculty of Dentistry of Bauru (FOB) – USP; Adjunct Professor, of Dentistry, Faculty Inga.

***** Sincler Sambatt Avenue, Parque Itaipu, Maringá, Parana State, Brazil. ZIP CODE: 86.950-000.
luzzinhatavares@hotmail.com

Received: 08/21/2015. **Accepted:** 12/20/2015

ABSTRACT

Currently, several orthodontic treatment are proposals to resolve cases of patients with mandibular anterior crowding therefore. The objective of this work is to show a case well diagnosed and successful, and focus on the opinion of different authors on when and what individuals indicate the extraction of a lower incisor and the best time to perform the extractions, their effects on vertical control and facial profile of patients, its benefits. We concluded that the extraction of a lower incisor are not routine procedures, but there are great chances of clinical success when asked about accurate diagnosis and the correct time.

KEYWORDS: Extraction, incisive, orthodontics.

1. INTRODUCTION

Throughout time, several treatment options have been suggested as an option for the treatment of cases where the patient presents a severe lower anterior crowding. Among these the most used methods are: distal movement of posterior teeth, the arch expansion, vestibular projection of the incisors, and interproximal stripping premolar extraction. However, the extraction of a lower incisor can be a very effective treatment option in carefully selected cases. However, it needs careful planning of each case, including evaluating the potential for relapse to the chosen option[1,2.3].

The first case report with lower incisor extraction, as a treatment option, dating from 1904, which was published the treatment of a patient where an incisor had previously been removed and he decided to remove one second incisor as a treatment option[4,5].

The extraction of a lower incisor has the advantage of creating space in the area that is most prone to crowding. However, the treatment may affect the quality of previous dental relations. The excessive overjet and overbite can be induced by discrepancies in the anterior tooth mass caused by the removal of one lower incisor[6,7,8].

The best indication for this approach constitutes the malocclusion Class I, with the lower anterior crowding that approximates the dimensions of a lower incisor, with normal upper teeth, perfect intercuspation, crowding higher mild or nonexistent, balanced soft tissue profile, overjet and minimal or moderate overbite[3,9,10,11].

Orthodontic planning cases with less crowding should be taken into account some measurements as the discrepancy models, cephalometric and Spee curve, so that you know what the size of the required space and then good planning of the case[11,12,13].

Another assessment that deserves mention is the quantification of Bolton discrepancy, the Bolton analysis have an increased percentage and the origin of this value is the upper incisors with reduced mesiodistal diameter to the point of compromising the aesthetics, the chosen procedure is the anatomic restoration of these with restorative dentistry. However, if there is significant lower excess, two alternatives can be chosen: extraction of an incisor or inteproximal wear (stripping) of the incisors[14,15,16].

To define what will be extracted incisor, some aspects should be considered including: amount of space deficiency; Bolton discrepancy; relationship between the average top and bottom line, and periodontal health, indicating the extraction of the incisor that is outside the arc causing the discrepancy in most cases is the central incisor[6,12,7].

According to Valinoti (1994)[13], there is a strong relationship between crowding correction stability and intercanine away. It is believed that because of treatment with extraction of an incisor keep this distance or even reduce it, in anticipation of a future natural decrease, would bring greater stability to the final result[4,5,18].

Thus, the main advantage of the orthodontic treatment with extraction of an incisor presents a considerable reduction in the treatment time, since the tooth removed is close to the problem, in addition to mechanical simplicity, translated into little concern for anchoring and maintenance of intercanine and greater stability after

treatment[1,3,6].

This paper aims to present an alternative approach to orthodontic treatment of patients with lower anterior crowding. Through a case report in which it was found that the extraction of the lower central incisor has proven to be a viable alternative for treating this type of malocclusion class.

2. CASE REPORT

A patient with 9 years old, female, leukoderma, attended the dental clinic of the Faculty Inga, had the esthetic complaint as malposition of the lower teeth. Clinical examination and models there was a dental molar class I relationship, the normal overjet, deep overbite (Figure 1).

Figure 1. Initial extraoral facial Photography.

The discrepancy lower models indicate excess dental mass of less than 1.1 mm. Thus, we confirm that the extraction of the incisor is the alternative most appropriate in this case (Figure 2).

Figure 2. Initial intraoral facial photographs.

Considering the characteristic of the facial pattern, discrepancy models and positioning of the lower incisors in their bone bases, the treatment plan proposed as a viable alternative to the case, removal of tooth 41 was suggested, chosen by the smaller size, position (Figure 3).

Figure 3. Final front smile Photography; right side and left side.

The patient was followed for 5 years for evaluation of orthodontic treatment and verification of stability. The end result shows a Class I relationship of canines, upper midline coinciding with the middle of the lower central incisor, good alignment and leveling and no diastema (Figure 4 and 5).

Figure 4. Final panoramic radiograph.

Figure 5. Final photography; extraoral facial.

3. DISCUSSION

This report indicates that it is possible to obtain excellent and intercisal occlusal relationships in a case with three lower incisors. The Bolton tooth size analysis had limited diagnostic value in these two cases, which, both the one and the other showed moderate excesses in the lower incisors[4,6,7].

The results concluded shown in this article, be more than one option for a negotiation with a lower incisor missing may help in achieving high standards of workmanship[1,12,13].

The clinician does not have to accept the proportions of tooth size and extent of the arc as undesirable elements, which, for better or worse, must be computed on a treatment plan. These proportions can be commonly altered with a selective and judicious removal of interproximal enamel[4,16,18].

4. CONCLUSION

Based on the aspects evaluated, and in the literature evidenced by clinical cases presented here, we can conclude that extraction of a mandibular incisor is a very effective therapeutic approach for judiciously selected situations.

REFERENCES

[1]. Zachrisson BU. Iatrogenic damage in orthodontic treatment. J Clin orthod, Boulder. 1978; 12:112-13.

[2]. Bernstein L, Edward H. Angle versus Calvin S. Case: extraction versus nonextraction. Part I. Historical revisionism. Am J Orthod Dentofacial Orthop, St. Louis. 1992; 102(5):464-70.

[3]. Lima CMF, Lacet E, Marques CR. Extração de incisivo inferior: uma opção terapêutica. R Dental Press Ortodon Ortop Facial. Maringá. 2005; 10(4):47-59.

[4]. Riedel RA, Little RM, Buy T. D. Mandibular incisor extraction: post retention evaluation of stability and relapse.Angle orthod, Appleton. 1991; 62:103-16.

[5]. Pinto MR, Mottin LP, Derech CD'A, Araújo MTDES. Extração de incisivo inferior: uma opção de tratamento Mônica Tirre de Souza Araújo. R Dental Press Ortodon Ortop Facial. Maringá. 11(1):114-21.

[6]. Bahreman AA. Lower incisor extraction in orthodontic treatment. Am J Orthod, St. Louis. 1977; 72(5):560-7.

[7]. Bernstein L, Edward H. Angle versus Calvin S. Case: extraction versus nonextraction. Part I. Historical revisionism. Am J Orthod Dentofacial Orthop, St. Louis. 1992; 102(5):464-70.

[8]. Canut JA. Extração de incisivo inferior: indicações a avaliação a longo prazo. R Dental Press Ortodon Ortop facial, Maringá. 1997; 2(3):48-49.

[9]. Faeroving E, Zachrison BU. Effects of mandibular incisor extraction on anterior occlusion in adults with class III malocclusion and reduced overbite. Am J Orthod Dentofacial Orthop, St. Louis. 1999; 115, (2): 113-24.

[10]. Janson GRP, *et al*. A importância da individualização no planejamento ortodôntico. R Dental Press Ortodon Ortop fac, Maringá. 1998; 8(2):31-45.

[11]. Klein D. Incisivo central inferior: uma opção de extração. R Dental Press Ortodon Ortop Facial, Maringá. 1997; 2(6):42-43.

[12]. Kokich VO. Treatment of a class I malocclusion with a carious mandibular incisor and no Bolton discrepancy. Am J Orthod Dentofac Orthop, St. Louis. 2000; 118(1):107-13.

[13]. Lima RS. A administração dos espaços nos arcos dentários na planificação do tratamento ortodôntio. Ortodontia, São Paulo. 1999; 32(2): 95-106.

[14]. Mercadante MMN. Extrações Seriadas. In: Ferreira FV. Diagnóstico e planejamento clínico. 2. ed. São Paulo: Artes Médicas. 1998; 171-86.

[15]. Owen AH. Single lower incisor extraction. J Clin Orthod Boulder. 1993; 27(3):153-60.

[16]. Riedel RA, Little RM, Bui TD. Mandibular incisor extraction-postretention evaluation of stability and relapse. Angle Orthod Appleton. 1992; 62(2):103-16.

[17]. Sheridan JJ, Hastins J. Air-rotor stripping and lower incisor extraction treatment. J clin Orthod, Boulder. 1992; 26(1):18-22.

[18]. Valinoti JR. Mandibular incisor extraction therapy. Am J Orthod Dentofacial Orthop, St. Louis. 1994; 105(2):107-16.