

Faculdade Sete Lagoas – FACSETE

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DESTRAVAMENTO DE INCISIVO CENTRAL SUPERIOR IMPACTADO: relato de caso

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Abstract

The occurrence of supernumerary teeth is a phenomenon that may result in the impaction of the maxillary central incisors. Such phenomenon requires a complex dental treatment, which may involve surgical, orthodontic and aesthetic procedures among others. The treatment planning is a delicate and imperative process for the evolution of the case to reach the expected results. The gain of space for the permanent impacted tooth to move to its natural position is a major obstacle to be considered. The present work describes the case of an 8 years old patient with a supernumerary tooth in the anterior maxillary vestibular region, right deciduous central incisor tooth, impacted right permanent central incisor and loss of space in the region of the right central incisor; treatment planning and the choice of procedures to achieve the expected results; supporting scientific literature; the technics used during the treatment; and the results.

Keywords: Dental impactation; Supernumerary teeth; Obtaining space.

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Introduction

A tooth that is prevented from erupting into position is considered impacted. Impactation of permanent incises may derive from several reasons, such as the existence of supernumerary teeth. Supernumerary tooth is any dental element that is anomalous to the natural dentition [16-17]. According to Srivatsan and Aravindha Babu [11] in a study in 2007 and confirmed by Parolia et al. in 2011, quoted by Ferrazzano [15], the prevalence of supernumerary teeth varies from 0,3% to 0,8% . In 88,7% of the cases, the supernumerary teeth are located in the hard palate region [13] and 80% to 90% of the cases are maxillary, of which 50% are located in the anterior region. [14] The prevalence of dental impaction varies from 2,9% to 13,7%, excluding third molars and prevailing canines and second premolars [1-9]. Many cases, deciduous canines cause permanent canines to be impacted and, in some cases, deciduous teeth do not exfoliate due to the bad formation of permanent teeth [10].

In a research conducted by Ferrazzano in 2014 [15], the extraction of supernumerary tooth is considered the initial treatment to correct the impaction of the permanent tooth. The treatment executed by Ferrazzano [15] in a patient presenting impacted right maxillary central incisor tooth was the extraction of two supernumerary teeth in the anterior maxillary region, after the installation of a quad-helix to expand the upper arch.

This study aims to report the case of a patient with an impacted right maxillary central tooth caused by the presence of a supernumerary tooth in the anterior vestibular region, the procedures and the results obtained.

Diagnosis and Etiology

8 year-old patient, female, presenting molar relation Class II division 2 subdivision right, willing to solve the non-exfoliation of the right maxillary central incisor tooth. Clinical examination revealed the absence of some dental organs and the presence of deciduous right maxillary central incisor tooth. Panoramic radiographic analysis revealed the existence of supernumerary teeth and the impaction of tooth 11 caused by the root of the right maxillary lateral incisor.

Treatment objectives

The treatment objectives were identified as:

- 1- Maxillary expansion;
- 2- Removal of supernumerary tooth;
- 3- Obtaining space in the region of tooth 11;
- 4- Root torque in adjacent tooth to disimpact the impacted tooth;
- 5- Traction of right maxillary central incisor;
- 6- Alignment and levelling;
- 7- Retention.

Procedures

Treatment options were introduced to the patient, who cooperated and followed all the instructions.

First, exodontia was performed in the supernumerary teeth and disjunction in order to obtain space enough to proceed to the traction of the incisor. After obtaining space, a segmented arch with L-shaped loop constructed with 016x016 elgilloy wire was used to produce apical root torque in the right maxillary lateral incisor distally so that it disimpacts the impacted incisor.

A prosthetic tooth was installed intending to reduce social impact. However, after a few weeks using the segmented arch it was possible to notice some resistance from the impacted tooth caused by fibrosis in the region of tooth 11 due to the implementation of the prosthetic tooth. Therefore, it was necessary to proceed to the removal of the prosthetic tooth and perform an ulectomy.

A month later it was possible to verify the eruption of tooth 11, as expected. An eyelet was installed with a lastex band in order to foster the traction of tooth 11. 4 weeks later, tooth 11 was satisfactorily tracted.

Discussion

The diagnosis

A study conducted by Manuja N. et al., states the clinical and radiographic analysis are the best and most accessible ways to detect supernumerary teeth and the consequent conditions [22]. According to Manuja apud Huber K. L. et al. and Garvey M. T. et al., another method that can be used is the radiographic parallax principal, which consists in the combination of three periapical radiographies positioned in different angles [23]. In the case described in this paper a panoramic radiography and periodic periapical radiographies were used to follow up the evolution of the clinic case, although the parallax principal wasn't necessary.

The obtainment of space

After the diagnosis of the supernumerary tooth and the lack of space for the positioning of the permanent tooth, it is necessary to perform procedures to obtain space. Ferrazzano [15] recommends the usage of a quad-helix to expand the upper arch. This technique applies light force, therefore there is no risk of apical radicular resorption or periodontic diseases. Since the patient also needed a disjunction, we opted to use a Hirax, which solved two demands of the patients case.

The treatment of the supernumerary tooth

In the study conducted by Manuja et al. [22], the diagnosis of the supernumerary tooth has to evolve into one out of two possibilities:

- Tooth extraction must be performed as long as there is no social impact to the patient or deformation of the position of the permanent tooth in the arch;
- Preservation of the supernumerary tooth to avoid crowding of the adjacent teeth, loss of eruptive force, midline deviation or loss of space.

In some cases prosthetic teeth can be used to minimize the social impact for the patient, as observed in the case of Guimarães and Oliveira, in which a prosthetic tooth was implemented in the Hawley appliance in the place of the premature exfoliated tooth. [25] In cases of premature avulsion, in between stages 5 and 6 of Nolla, may incur in fibrosis, delaying the eruption of the permanent teeth. [25]

We opted for the extraction of the deciduous tooth and the supernumerary tooth in this case. A prosthetic tooth was installed to enhance social interactions of the patient, but it caused a fibrosis in the incisor area.

Although an ulectomy had been used to revert the fibrosis that causes a delay on the eruption of the impacted tooth, its result was not satisfactory. Therefore, the result obtained diverged from the scientific literature.

Traction of the impacted tooth

The usage of a segmented arch with L-shaped loop for adjacent teeth root torque to obtain space is indicated in the book *Ortodontia: Terapia Bioprogressiva* [24].

The result obtained by using the segmented arch with L-shaped loop in tooth 12 was the distal root torque of the right maxillary central incisor tooth, creating space for the complete eruption of tooth 11.

Radiographic image of the desimpacted right maxillary central incisor.



Segmented arch with L-shaped loop and prosthetic tooth.



Conclusion

The results obtained in this case report show the best option to desimpact the central incisor was the usage of the segmented arch with L-shaped loop created by Professor Paulo Thomé e Vasconcelos. In this case, the central problem consisted not only in the lack of space, but also the impaction of the central maxillary incisor. The force of the segmented arch with L-shaped loop was ideal to solve the problem without side effects.

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