

Surgical and Orthodontic Management of a Case of MesiodensToure Kadidia^{1*}, Ouedraogo Youssouf², Niang Amsalla³, Haidara Maliki¹, Togo Abdoul Karim⁴, Kane Aboubacar ST^{4,5}¹Department of Orthodontics, University Hospital Odontostomatology of Bamako (Mali)²University Hospital Center of Ouagadougou (Burkina Faso)³Department of Pediatric Odontology, University Hospital Odontostomatology of Bamako (Mali)⁴Odontology Research Group, gro-mali (Mali)⁵Department of Odontology Military Hospital Bamako IHB (Mali)***Corresponding author**

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Abstract: The term mesiodens refers to an often conoidal supernumerary tooth located between or just behind the maxillary central incisors. This clinical case illustrates the diagnosis and orthodontic management of a patient with two mesiodens. The interrogation revealed a real social malaise related to the disruption of the smile. No other pathology has been reported. Clinical and radiological examinations revealed maxillary pro-alveolina associated with the presence of two mesiodens in the maxillary incisor region. The patient is in perfect class I molar and canine. Orthodontic treatment in the maxillary maxillary multibague was established after extraction of supernumerary teeth. We achieved our treatment goals and responded to the patient's aesthetic demand. The goal of orthodontic treatment is to make patients smile again as this clinical case demonstrates.

Keywords: Mesiodens, Supernumerary teeth, Surgery, Orthodontics.

INTRODUCTION

The term mesiodens refers to an often conoidal supernumerary tooth located between the maxillary central incisors or just behind them [1-4]. In 80% of cases, the mesiodens has a median situation between the two upper central incisors. Its frequency varies between 0.15% and 1.9% [16]. It is twice as common among males as females [1, 6, 12, 16]. Its shape may be conical, tuberculate or molariform [1, 5, 6, 7].

Conical mesiodens are usually located on the palatal side between the upper central incisors, and tend to displace permanent central incisors in eruption. They are usually single but may appear in groups and may be unilateral or affect both sides of the dental arch and often remain included without erupting [7]. The diagnosis of mesiodens is clinical and radiological because only 25% of all mesiodens erupt spontaneously in the oral cavity [7].

The presence of mesiodens can disrupt the alignment of the maxillary incisors (inclusions, rotations, and version). Mesiodens can also delay or prevent the eruption of central incisors in 26% to 52% of cases [7, 8]. When it erupts on the arch, its median position between the central incisors causes a real aesthetic prejudice most often motivating the consultation in orthodontics. A disturbance of the occlusal functions is also observed. The treatment will then consist in correcting the aesthetic deficit while restoring the disturbed functions. There will be two types of management of mesiodens that have evolved

on the arcade: therapeutic abstention or continued extraction, in some cases orthodontic treatment [7, 9].

In both cases, the aim is to eliminate the disturbances caused by the presence of the supernumerary tooth. The objective of this clinical case is to show the interest of the surgical and orthodontic management of a patient presenting two mesiodens.

OBSERVATIONS**Presentation**

Our clinical case is a young student, aged 17 on the day of the consultation, residing in the district of Bamako. He had come to orthodontic consultation for a purely aesthetic reason. The interrogation revealed a real social malaise related to the disruption of the smile. The patient's mom reported that her son was still hiding his smile from his hand because of the bad position of his teeth. He was also mocked by his comrades. We also noted a phonation problem related to the spacing of anterior teeth. It is therefore a very introverted young boy that we saw at this first consultation. No other pathology has been reported (Fig1).



Fig-1: Smiling patient

The exo-oral clinical examination showed a facial protrusion. Endo-oral examination revealed deformation of the maxillary arch in the anterior sector with maxillary proalveolina associated with the presence of two conical mesiodens in the maxillary incisor region. The presence of these supernumerary teeth between the two power stations caused a 12 mm interincishable diastema. The mandibular arch of normal shape presents no major anomaly.

Examination of the occlusion in the sagittal direction shows an increased overhang, the patient being in perfect class I molar and canine. Occlusion in the transverse and vertical direction is normal (Fig 2, 3).

The radiological examination confirmed the clinical examination by showing two mesiodens between the two maxillary central incisors (Fig4).



Fig-2: Front view and profile



Fig-3: Occlusal view showing the two mesiodens between teeth n ° 11 and n ° 12.



Fig-4: Panoramic radiograph

The diagnosis of maxillary proalveolina related to the presence of two mesiodens was made. Our therapeutic objectives are aimed at correcting aesthetic damage while restoring disturbed occlusal functions.

Supported

In our case, the importance of aesthetic damage, functional disruption and the age of the patient were indicative of the extraction of mesiodens followed by orthodontic treatment (Fig 5).



Fig-5: View of the maxillary after extraction of mesiodens

The extractions were performed before the installation of the multibague device in the maxilla; the mandibular arch was not banded at the request of the patient and his mother. The objective of this treatment was the correction of the maxillary proalveolia, the closure of the interincisive disteme and the restoration of disturbed occlusal functions. The treatment lasted 10

months. At the end of the multi-band treatment a bonded bonding of the 13 to the 23 was put in place.

RESULTS

The objective was achieved at the esthetic request of the patient ie, the supernumerary teeth were extracted, the space between the two incisors was closed, the patient found the smile (Fig 6,7,8).



Fig-6: End of treatment

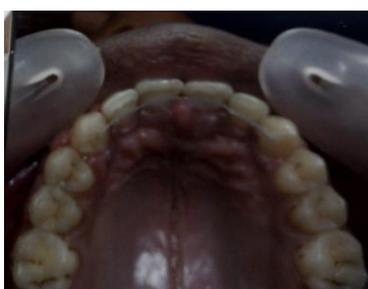


Fig-7: Attention glued 13-23



Fig-8: Smile before and after treatment

DISCUSSION

Several studies have been devoted to mesiodens [1, 4, 7, 8, 10, 11] and their management. Most of these therapies report the extraction of mesiodens with or without orthodontic treatment. Thus, surgical extraction of the supernumerary tooth and orthodontic traction of the central incisor included by the closed eruption technique were performed in a 10-year-old patient with a permanent right upper central incisor affected due to supernumerary tooth. After 12 months, the permanent right upper central incisor was correctly positioned on the dental arch. Multidisciplinary treatment has enabled functional and esthetic rehabilitation, thus reducing the psychological impact of the patient caused by the absence of anterior tooth or in a bad position [11].

Therapeutic management of the included teeth has been associated with the orthodontic treatment of a Class II, Division 1 malocclusion in a boy with 2 supernumerary teeth (mesiodens). A sequential approach to surgical extraction of supernumerary teeth with two stages of surgical exposure and orthodontic traction of the included teeth resulted in correct incisor positioning. Close monitoring and multidisciplinary cooperation during the different phases of treatment led to a successful esthetic outcome, with good periodontal health and functional occlusion [12]. Supernumerary teeth caused both functional impairment (malocclusion) and esthetic impairment (inter incisor diastema) in an 8-year-old boy with two mesiodens, both of which affected his quality of life. Surgical extraction of supernumerary teeth and orthodontic follow-up has been proposed, in accordance with the treatment established in the literature. This treatment gives satisfactory results both aesthetically and functionally [13]. Records of 63 children referred for extraction of a supernumerary tooth in Bristol and 96 children in Westmead were examined, for a total of 215 supernumerary teeth. Differences in the treatment provided to these patients were found not only between the two centers, but also within the same center. There did not seem to be a standardized way to see these

patients and, therefore, no standardized treatment regimen. Contacts with all dental schools in the United Kingdom indicated that there was no formal treatment protocol for the treatment of children with supernumerary teeth. In addition, a permanent incisor associated with a conical supernumerary tooth was twice as likely to spontaneously erupt as one associated with a supernumerary form of tuberculosis. The location of the supernumerary tooth also influenced the likelihood of a spontaneous eruption of the associated permanent incisor [14].

CONCLUSION

Mesiodens is a supernumerary tooth more common in permanent dentition than in temporary dentition. It is mostly located in the incisor area of the maxilla. It has a great variety of forms and can manifest itself in different ways. The radiological examination is a capital contribution to the establishment of a diagnosis then to the therapeutic decision-making which can be the therapeutic abstention or the extraction followed, in some cases, of an orthodontic treatment. The aesthetic effect of this number anomaly related to its position in the anterior incisor sector most often directs the therapeutic choice towards extraction followed by orthodontic treatment. The goal of orthodontic treatment is to make patients smile again as this clinical case demonstrates.

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