

Rare Case of Bilateral Gemination in Deciduous Teeth

Un Caso Infrecuente de Geminación Bilateral en Dientes Temporales

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SUMMARY: Gemination in bilateral mandibular primary teeth is a rare anomaly. This kind of anomaly features two crowns totally or partially separated, but only one root and one root canal. At intraoral clinical examination of children we found different anatomy of mandibular primary canines with two partially separated crowns. The radiographic exams showed geminated teeth. After 3-years of follow-up, the cone beam computed tomography showed the absence of the mandibular permanent lateral incisors and the aspect of normality of the permanent canines germs. Although the gemination in primary teeth itself is considered as a harmless anomaly, its presence could indicate the occurrence of some dental anomaly in the permanent dentition. To the best of our knowledge, this is the only case of bilateral mandibular geminated deciduous teeth after 3 years of follow-up. Therefore, we highlight the importance of the early diagnosis and follow-up of this anomaly until the eruption of the permanent dentition.

KEY WORDS: Dental germination; Bifid crown; Dental anomalies; Radiographic anatomy.

INTRODUCTION

The correct diagnosis is very important for the success of any treatment. The dental gemination occurs when two teeth try to develop from one single germ leading to a larger tooth. The segregation is usually incomplete and results in a larger tooth crown, which has a single root and a single root canal. The halves of the joined crown are commonly like a mirror of each other (Chipashvili *et al.*, 2011). In most cases it occurs in the primary unilateral maxillary lateral incisor, presenting a bifid crown with a groove that runs from the incisal margin to the cervical region (Chen *et al.*, 2010).

Other teeth can be involved, such as canines, premolars and molars, but less often. The permanent successor may erupt showing the same changes or even hypodontia (Marinelli *et al.*, 2011; Nik-Hussein & Abdul Majid, 1996). Therefore, follow-up is very important because the geminated teeth usually cause aesthetic and orthodontic problems, such as, diastema, crowding, or protrusion (Chipashvili *et al.*). The purpose of this article is to present an unusual case of bilateral gemination in primary dentition with implications in the permanent dentition.

CASE REPORT

A 5-year-and-6-month-old white female patient, was attended for dental treatment. Intraoral examination revealed the presence of joined crowns between mandibular primary canines and primary lateral incisors on both sides, diagnosed as gemination through periapical radiography (Fig. 1), which showed only one root and two separated pulp chambers related to each crown. The other oral and dental structures had a normal pattern obeying the chronology of eruption, therefore no immediate treatment was proposed, the patient's parents were only instructed to go back to the clinic on a regular basis for follow-ups, as only through the radiographic exams the permanent germs could not be appropriately visualized. Three years after the gemination diagnosis, at one of the regular visits, it was observed that, although it was the chronological time for the mandibular primary lateral teeth to exfoliate, they had not even presented mobility yet (Fig. 2). For the purpose of unveiling the reasons why this happened and to complete the diagnosis, cone beam computed tomography was chosen. Through the cone beam computed tomography it may be seen the absence of the two mandibular permanent lateral incisors germs (Fig. 3)

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and the aspect of normality in the structure of the permanent canines germs (Fig. 4). Regarding the diagnosis for the

mandibular permanent canines, it can only be completed when they erupt.



Fig. 1. Periapical radiographic exam of the 7.2-7.3 and 8.2-8.3, allowing geminated teeth diagnosis, year 2008.



Fig. 2. Clinical aspect of bilateral mandibular primary double teeth (crowns of 7.2-7.3 and 8.2-8.3), September 2011.



Fig. 3. Cone beam computed tomography showing absence of two germs of mandibular permanent lateral incisors, November 2011.



Fig. 4. Cone beam computed tomography showing aspect of normality of the germs of permanent canines, November 2011.

DISCUSSION

Double teeth (gemination and fusion) were found to be 75% of the cases of dental anomalies in the primary dentition, with 94% of fusion and only 6% of germination (Nik-Hussein & Abdul Majid). Gemination is an anomaly in size, shape and structure of teeth and it occurs commonly in incisors maxillary unilateral (Chipashvili *et al.*), but rarely in mandibular permanent central incisor (Beltrán *et al.*, 2013). In this case, however, a rare clinical case with bilateral anatomical changes was observed in mandibular canines, which is less common in literature.

The presence of a dental anomaly in the primary dentition represents a risk factor for the recurrence of some anomaly in the permanent dentition, so the follow-up is important (Marinelli *et al.*). Therefore, the orthodontic and aesthetic treatments planning during the follow-up is a very important step, especially when the occurrence is bilateral.

When gemination occurs, there is a high risk of hypodontia in the permanent dentition (Chen *et al.*; Marinelli *et al.*). These findings corroborate the presented clinical case. The treatment of geminated teeth or hypodontia generally requires a multidisciplinary approach,

including orthodontic correction. The main goal in comprehensive orthodontic treatment is to obtain optimal final occlusion, overbite and overjet.

Bolton analysis (Bolton, 1962), based on the ratios between the mesiodistal tooth diameter sums of the mandibular and the maxillary dentitions, remains the most recognized and widely used method for detecting interarch tooth size discrepancies. Clinically, the Bolton analysis has been used to determine the need for reduction of tooth size by interproximal stripping or the addition of tooth size by prosthetic restoration (Bolton).

In conclusion, although gemination in primary teeth is not severe, its presence might cause changes in the arch perimeter; it may indicate the occurrence in the permanent teeth. With conventional radiographic examination is not always possible to identify the absence of the permanent germ, in these cases we can choose cone beam computed tomography for diagnosis. Therefore, making early diagnosis and follow-up of the patient may result in the prevention of functional and aesthetic damages such as malocclusion.

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RESUMEN: La geminación dientes temporales mandibulares bilateralmente es una anomalía poco frecuente. Este tipo de anomalía presenta dos coronas total o parcialmente separadas, pero solo una raíz y un canal radicular. Al examen clínico intraoral de los niños encontramos la variación anatómica de los caninos temporales mandibulares con dos coronas parcialmente separadas. Los exámenes radiográficos mostraron los dientes geminados. Después de 3 años de seguimiento, la tomografía computarizada Cone-Beam mostró la agenesia de los incisivos laterales permanentes mandibulares y el aspecto de normalidad de los gérmenes de los caninos permanentes. Aunque la geminación en dientes primarios se considera como una anomalía no patológica, su presencia puede indicar la presencia de alguna anomalía dental en la dentición permanente. Según nuestro conocimiento, este es el único caso de dientes temporales geminados mandibulares bilateralmente tras 3 años de seguimiento. Se destaca la importancia del diagnóstico precoz y el seguimiento de esta anomalía hasta la erupción de la dentición permanente.

PALABRAS CLAVE: Geminación dental; Corona bífida; Anomalías dentales; Anatomía radiográfica.

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