

Delayed Eruption of Maxillary First Permanent Molars: Case Report

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Received: August 26, 2019; **Published:** September 26, 2018

Abstract

Unusual pattern of development and eruption of teeth can cause a disturbance in the developing occlusion and mastication. Abnormality related to permanent molar are not quite common. In this article, delayed in the eruption of the upper first permanent molar is reported in an 11 years old patient. Causes and managements of delayed eruption was discussed.

Keywords: *Delayed Eruption; Permanent Molar*

Introduction

Teeth Development and eruption is a physiological well-organized process [1]. Some alteration may occur during that process leading to different anomalies either in shape or number or in the eruption sequence or timing [2]. The teeth that are commonly affected were well reported [2,3]. But abnormalities related to permanent molars especially first and second molars is extremely rare [4].

Delayed or failure of eruption can be due to different genetic or acquired medical conditions [5,6]. But in some cases, it can be associated with no systemic conditions or genetic factors and the etiology remains unexplained [7]. If the tooth is late in its eruption by at least 1 year from its average time of eruption, it is diagnosed as delayed eruption [8]. In this article, delayed in the eruption of the upper first permanent molar is reported.

Case Presentation

An 11 -years-old female patient visited the dental clinic at REU complaining of pain when eating in the lower left quadrant. Medical history was clear from any systemic diseases, and no previous dental history reported. Clinical examination revealed multiple carious primary teeth, causing her the chief complain. Upon examination of the rest of the dentition, it has been found that the first permanent molar in the maxilla did not erupt. The soft tissue over the ridge distal to the deciduous second molar was slightly pale in color. Radiographic examination showed that only the crown of the upper first permanent molar is formed, no root development at all yet and the tooth follicle of the second permanent molar is completely absent. The lower arch is having a normal pattern of eruption of first permanent molar according to the patient age. In addition, the upper lateral incisors in both quadrants are also delayed in their eruption, which show a clear discrepancy in the eruption pattern between the maxilla and the mandible. The development of the teeth in the maxillary arch is far away from the normal timing of eruption, which is normal and clear in the mandibular arch.

The chief complain of the patient was treated with extraction of teeth that cannot be restorable and multiple filling to treat the different caries. Close monitoring of the development of first permanent molars of the maxilla as well as the lateral incisors is recommended.



Figure 1: Panoramic x-ray taken showing delayed eruption of maxillary first molar (11 years old and 5 months).

Discussion

Delay in the development and eruption of the permanent molars can cause a disturbance in the developing occlusion and mastication [9,10].

It was reported that delay in the eruption of permanent first, second or both the molars are commonly associated with other anomalies such as hypodontia or congenitally missing teeth [11,12]. In the present case, there are no congenitally missing teeth, but upper central incisors look a little bit smaller than usual.

The dental age of the unerupted maxillary first permanent molar is approximately about 5 - 6 years exhibiting a lag of about 4 - 5 years. The lack of the initial evidence of calcification of the second permanent molar indicates a clear delay in the eruption time in the maxilla. Rasmussen [11] went to the extent of renaming such molars that erupt late as '9-year molar' and '15-year molar' for the first and second permanent molars respectively and its presence is also associated with lack of several other teeth. But in the present case, there is no evidence of congenitally missing teeth.

Futatsuki, *et al.* [13] discussed similar cases of delayed eruption of first molars and noted that in some cases it was associated with congenital absence of several teeth. Interesting was the association made between the missing second permanent molar and delayed eruption of the first permanent molar. But in our case, all the second premolars are present.

Treatment for the failure of eruption of permanent molars depends on several factors. Different options for the treatment of delayed eruption include observation, surgical exposure and luxation or removal of any interference and lastly extraction. The most important factor to take in consideration before deciding on the treatment is the patient's age. When the roots of the unerupted tooth have completely formed the chances of successful treatment decrease [14]. The usual treatment with a favorable prognosis is exposure and luxation. Molars luxated prior to root completion erupted spontaneously and continued their normal root development [15].

Palma, *et al.* [9] have proposed a treatment protocol for the management of patients with delayed eruption based on the type of abnormality and age (Table 1).

<p>1. Dental Anomalies Macrodontia, supernumerary teeth, delay of eruption, rotations, ectopia, agenesis, microdontia Alterations of neighboring and opposing teeth: ectopia, extrusion, impaction, inclination</p>
<p>2. Associated Local Pathology Local pathology (cysts, tumors) Posterior dento-alveolar discrepancy</p>
<p>3. Characteristics of the Unerupted Molar Stage of root formation Degree of non-eruption Inclination axis Root anatomy (normal/dilacerated)</p>
<p>4. Treatment Option Observation, exposure, luxation, extraction</p>
<p>5. Evolution Success, failure</p>

Table 1: Record of the patient’s oral condition.

Conclusion

It should be clear that the late erupting first permanent molar is closely monitored and carefully evaluated by studying the crown-root development and comparing it with the normal. It is very important to avoid any kind of surgical or orthodontic intervention to bring the teeth to the mucosal surface when they are still immature for an eruption.

Conflict of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

This article does not contain any studies with human participations or animals performed by any of the authors.

Informed Consent

Additional informed consent was obtained from all individual participants from whom identifying information is included in this article.

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Volume 2 Issue 7 October 2019

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