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Case Report

A case study on the management of palatally erupted mesiodens

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ABSTRACT

A supernumerary tooth is outlined as an additional tooth in distinction to traditional series of the dentition.Mesiodens may cause permanent incisor eruption to be delayed or ectopic, altering occlusion and appearance·As a result, it is essential for a health professional to diagnose mesiodens early in its development stage in order to provide optimal and minimal management. Interceptive therapies should be started as soon as possible after the clinical diagnosis of an irregular eruption pattern. Surgical removal of the mesiodens should be planned to avoid unfavourable outcomes.

1. Introduction

A supernumerary tooth is outlined as an additional tooth in distinction to the traditional series of the dentition.[1] Mesiodens is characterized as a supernumerary erupted or an unerupted tooth that has formed between two maxillary central incisors. Balk coined the word mesiodens in 1917 to explain the presence of an additional tooth between the two maxillary central incisors.[2] The etiology of the supernumerary teeth is still not known. It can be categorized based on their appearance, their location, and their form.[3] The most common type of supernumerary tooth as indicated by Alberti et al is mesiodens[4] occurring in 0.15% to 1.9% of the total population. The occurrence of mesiodens is not completely understood, although the proliferation of the dental lamina and genetics is involved. Mesiodens may cause permanent incisor eruption to be delayed or ectopic, altering occlusion and appearance. As a result, a health professional needs to diagnose a mesiodens early in its development stage to provide optimal and minimal management.[5] Boys are affected twice as much as girls (2:1). Mesiodens can be classified into three groups based on their morphology: conical, tuberculate, and supplementary.[6] S Mukhopadhyay et al.[7] found out that the conical shaped mesiodens is the most common supernumerary tooth found in the oral cavity followed by supplemental and tuberculate was the least type of supernumerary tooth found. They may erupt or, in some cases, remain dormant causing malocclusion.[8] The management of mesiodens is determined by the form and location of the anomaly. Inhibition or delay of eruption, displacement of the adjacent tooth, interference with orthodontic equipment, the occurrence of pathologic disease, or sudden eruption of the supernumerary tooth is all reasons for immediate removal of the mesiodens.[4] Early detection provides for the most effective care, reducing the degree of orthodontic treatment, surgery, and associated possible complications.[5]

2. Case Report

An 11 year old boy reported to the Department of Paediatric and Preventive dentistry of Sudha Rustagi College of Dental Sciences and Research, Faridabad with the chief complaint

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of an extra tooth in his upper front region. The patient's medical, dental, and family backgrounds were all non-contributory. No history of trauma, swelling, pus discharge, pain reported while examination. There was no sign of any other associated syndrome. Clinical, radiographical, and intraoral examination (Figures 1 and 2) revealed mixed dentition with diastema formation and the presence of mesiodens placed palatally between two permanent maxillary central incisors (i.e. 11-21). Treatment was planned to extract the mesiodens under local anaesthesia (Figure 3). Informed written consent was taken before the extraction from the parent. Antibiotics and anti-inflammatory was also prescribed after extraction. The patient was then recalled after 14 days of follow up, the wound healed without incident, and the patient had no postoperative complications (Figure 4).

Fig. 1:

Fig. 2:

Fig. 3:

Fig. 4:

3. Discussion

Most mesiodens are identified between the ages of 7 and 9 during the eruption of permanent central incisors. Mesiodens are most oftenly identified during a radiological evaluation of upper central incisors that are unerupted or axially rotated, or in cases with diastema.[7] Akhil Jose E J et al conducted a study in which he stated that in 78.1 percent of the cases, one mesiodens was found, and in 21.9 percent of the cases, two were found. The majority of mesiodens (55.2%) were located in a vertical position, followed by an inverted position (37.6%), and horizontal position (7%).[9] There are three competing hypotheses about the occurrence of mesiodens in the usual dentition. The first hypothesis suggests that the mesiodens is a phylogenetic recapitulation of our ancestors, the second hypothesis, the Dichotomy theory, the mesiodens is the product of unequal tooth buds breaking into two teeth. The third and most widely known hypothesis proposes dental lamina hyperactivity, in which remnants of the dental lamina are caused to turn into an additional tooth bud.[10] Interceptive therapies should be started as soon as possible

after a clinical diagnosis of an irregular eruption pattern. It has been proposed that a tooth that is more than six months late in erupting concerning its antimere should be radiographically examined.[11] Mesiodens may result in several complications, including interference with adjacent tooth eruption and positioning, delayed or non-eruption of maxillary incisors, root resorption, and the development of dentigerous cysts.[12]

However, in our present case, the mesiodens had already erupted palatally between two maxillary central incisors into the oral cavity, causing midline diastema, irritation, malalignment, rotation of adjacent teeth, and giving anaesthetic appearance to the child. Therefore, mesiodens was recommended for extraction due to these existing and potential complications.

Hogstrum and Andersson[13] reported a 2:1 ratio of sex distribution with males being more commonly affected. A study on Asian children also reported 6.5:1 male to female distribution.[14]

Before a definitive diagnosis and treatment plan can be developed, it is essential to not only enumerate, but also to classify the supernumerary teeth that are present, both clinically and radiographically. Malocclusions and dental anomalies such as delayed eruptions of permanent incisors, rotations of permanent incisors, and diastema can be avoided if a mesiodens is diagnosed and extracted early.[15] Where there is a chance of a spontaneous eruption without complications, extraction of mesiodens is not needed. Surgical removal of the mesiodens should be carried to avoid unfavourable outcomes.

4. Conclusion

Mesiodens are the most common supernumerary teeth in mixed dentition. A detailed history of the patient should be taken before any procedure for carrying out desirable treatment. Extraction is the treatment of choice in mixed dentition because it allows for some spontaneous alignment of neighbouring teeth and shortens orthodontic treatment time.

5. Conflicts of Interest

All contributing authors declare no conflicts of interest.

6. Source of Funding

None.

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