

“The Tricky Extra”: Case report of a supplemental mesiodens

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ABSTRACT

Background: Supernumerary tooth is one of the most commonly encountered anomaly in dentistry. The most common variant is the mesiodens which is the supernumerary tooth located between the maxillary central incisors. Presented here is the unique case of a 7 year old boy with a mesiodens resembling an incisor in appearance, obstructing the complete eruption of the adjacent permanent central incisor. The usual concept of extracting the tooth which is most displaced in the arch in such “tricky” cases with supplemental tooth was deferred in this case.

Keywords: Mesiodens, Supplemental, Supernumerary, Orthodontic repositioning.

INTRODUCTION

Hyperdontia or supernumerary teeth refers to an increase in the normal number of teeth and occurs more frequently in the permanent dentition. Most hyperdontia occurs in the maxilla (10 times more frequent than mandible) and specifically the anterior region. Prevalence rate ranges from 0.3-0.8% in primary dentition and 0.1-3.8% in permanent dentition. Males are affected twice often as females.¹⁻³

The usual clinical presentations are that of normal eruption, impaction, inverted appearance or abnormal path of eruption.⁴ Complications associated with them include, crowding, diastema, delayed eruption, ectopic eruption, formation of primordial cyst, impaction, adjacent tooth root resorption or eruption into nasal floor.⁵ Although supernumerary teeth are thought to be related to disturbances in initiation and proliferation stages of dental development, some may be syndrome associated or of familial inheritance. Other theories suggested relating to their etiology includes atavism, dichotomy theory and dental lamina

hyperactivity theory; with most literature supporting the latter one.⁶

They are further classified according to their morphology and location. Based on morphology conical, tuberculate, supplemental, odontome and based on location mesiodens, paramolar, distomolar, parapremolar. Mesiodens is a supernumerary teeth located between the maxillary central incisors usually located palatal to them with only a few in the line of arch or labially.⁷ Supplemental supernumerary teeth are those which can occur in any location and bears resemblance to a normal tooth. This paper reports the case of a mesiodens which had erupted in place of the left maxillary central incisor and obstructing the eruption of latter. The factor which makes this report unique is that this mesiodens was of the supplemental variety of supernumerary teeth, very much “mimicking” the adjacent incisors.

CASE REPORT

A seven year old boy reported to the Department of Pedodontics and Preventive

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Fig 1: Pre operative photograph.



Fig 4: One month postoperative.

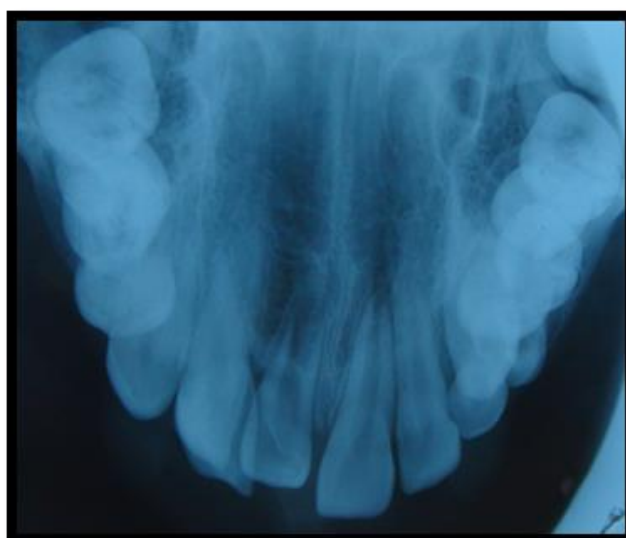


Fig 2: Preoperative radiograph.



Fig 5: E chain placed from 11 to 21 for extrusion of 21.



Fig 3: Extracted mesiodens.



Fig 6: Approximated 21 and ligature wire placed.

dentistry, K.M.C.T Dental College, Manassery, Mukkam, Calicut, Kerala with a chief complaint of forwardly erupting upper left front permanent tooth. The parents also expressed their concern about the lack of space for eruption of this labially erupting tooth. General examination carried out ruled out the presence of any syndrome and medical and family histories were non-contributory. No significant abnormalities were noted during the



Fig 7: Uprighting spring on 21.



Fig 8: E chain placed from 12 to 22 for diastema closure.

extra-oral examination. Intraoral examination revealed, a, slightly palatally placed, partially erupted mesiodens resembling a normal incisor tooth which was obstructing the eruption of permanent left central incisor. The permanent left central incisor is seen partially erupted on the labial gingiva above the mesiodens with the crown having a mesial inclination. (Figure 1).

Maxillary occlusal radiographic examination confirmed that the teeth which erupted in the arch was the mesiodens with incompletely formed roots and no apical closure and the labially placed incisor blocked above it, was the actual left permanent central incisor with normal coronal and radicular radiographic picture (**Figure 2**). The treatment plan included extraction of the mesiodens followed by orthodontic repositioning of the permanent left central incisor by fixed appliance therapy.

DISCUSSION

Failure, delay of eruption or ectopic eruption of a permanent incisor warrants the clinician to consider the possibility of presence of supernumerary teeth. Radiographic investigation is

always mandatory to confirm such findings whenever an asymmetric eruption pattern is noticed. As reported by Rajab et al and Liu et al, supernumerary teeth with normal orientation usually erupt; however only 13-34% of all permanent supernumerary teeth are erupted compared with 73% of its primary variants.^{1,8} The most common supplemental tooth is the permanent maxillary lateral incisor. In our case, the supplemental tooth was in place of central incisor and one could easily get confused between the mesiodens and the erupting 21. The mesial inclination and the delay in eruption of 21 might have been caused due to the presence of the mesiodens. For management of supernumerary teeth, its best to adopt a comprehensive approach which depends on the type and position of the extra tooth and its effect or potential effect on adjacent teeth. Along with many other reasons, removal of supernumerary tooth is also indicated when central incisor eruption has been delayed or inhibited and altered eruption or displacement of associated teeth is evident.⁵ Early intervention is also required in such cases before the eruptive potential of the incisor is lost. If a supplemental tooth is present and erupted, assuming both teeth are healthy, it is logical to extract the tooth most displaced from the line of the arch.⁶ But in our case, though the supplemental tooth was in line of arch, it was smaller in dimension, palatally inclined and partially erupted compared to the adjacent fully erupted 11 and had underdeveloped roots with incomplete apical closure radiographically. Furthermore, there was enough space available in the arch for orthodontically extruding and uprighting the mesially inclined 21. Hence in this case, extraction of the supplemental mesiodens was the treatment option selected.

Following removal of the supernumerary teeth, spontaneous eruption of the associated permanent tooth is determined by the patient's age and space availability in the dental arches. DiBiase suggests that most teeth experiencing delayed eruption will spontaneously erupt within 18 months of supernumerary removal alone, provided the delayed tooth is not excessively displaced and have a potential to erupt.⁹ Furthermore, if the roots of the incisors are completely or nearly formed, there may be diminution of eruptive potential that will necessitate orthodontic treatment, as carried

out in the present case. Although removable appliances with hook embedded palatally on the acrylic plate have been used to align such teeth, in this case the 21 was not fully erupted and more force was required to extrude and position the tooth, and for faster results, fixed appliance therapy was opted. This case report also highlights that pedodontists can appropriately intervene and correct minor malocclusions at the appropriate age, if they have interest in gaining knowledge and performing basic fixed appliance therapy.

CONCLUSION

The primary objective of preventive dentistry is early detection and management of dental problems. The presence of an additional tooth can disrupt the normal occlusal development and relation thus requiring early intervention. Additionally, this case report also emphasizes the importance of radiographic assessment and the need of an individualized treatment plan for each case of supernumerary teeth.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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