Twin Mesiodens: A Case Report

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ABSTRACT

Supernumerary teeth are a relatively common developmental anomaly, characterized by the presence of extra teeth in comparison to the normal dentition. Mesiodens is the most common supernumerary in the midline, located in the premaxilla between the two central incisors. Mesiodentes is a rare condition when mesiodens erupt in multiples. The etiology behind its occurrence is obscure and diverse, but the most accepted theory is the hyperactivity of the dental lamina. The prevalence varies from 0.15% to 1.9%, it shows a male predilection and is more common in permanent dentition than in primary dentition. Mesiodens may be eumorphic (resembling natural teeth) or dysmorphic (conical, tuberculate, or molariform), single or multiple, impacted or erupted and at times even inverted, placed labially, palatally or in between the maxillary central incisors, isolated or associated with syndromes. Complications associated with the presence of mesiodens may include impaction or delayed eruption of permanent teeth, malocclusion leading to disturbance in chewing, swallowing and speech, impaired dentofacial aesthetics, and sometimes cyst formation. Diagnosis is usually done by clinical and radiological examination. To avoid future complication, early extraction is the treatment of choice. Here, we report a case of double mesiodentes in a non-syndromic patient, which are in line with the maxillary central incisors and causing malocclusion and unaesthetic appearance.

Keywords: Developmental anomaly, Maxilla, Mesiodens, Mesiodentes, Supernumerary teeth, Supplemental teeth

INTRODUCTION

A supernumerary tooth can be defined as an extra tooth in comparison to the normal dentition.¹ It was first reported between AD 23 and 79.²³ Supernumerary teeth usually are maxillary and mandibular being a rarity. Mesiodens is the most common type of supernumerary tooth.⁴ According to Mosby’s Medical Dictionary, “Mesiodens is defined as a supernumerary erupted or a unerupted tooth that develops between two maxillary central incisors.”⁵ The term mesiodens was coined by Balk in 1917 to indicate a supernumerary tooth located between two central incisors.⁶ If there is delayed eruption of permanent incisors or if central incisors are displaced, malposed or show spacing, the presence of mesiodens should be suspected.⁷

The prevalence of supernumerary teeth in various populations has been reported to be 0.1-3.6% with male preponderance over female (2:1), of which mesiodens accounts for about one-third of these cases.⁸ They occur more commonly in the permanent dentition (0.1-3.6%) in comparison to that of primary dentition (0.02-1.9%).⁹ Etiopathogenesis of supernumerary teeth remains obscure. Many theories have been put forward which include the phylogenetic process of atavism (evolutionary throwback), the anomalous splitting of the tooth bud (dichotomy), localized hyperactivity of dental lamina, heredity and some environmental factors. Among these, hyperactivity of dental lamina is mostly accepted.¹⁰

Mesiodens can be classified by different ways. According to the morphological classification, it may be eumorphic, which resembles a natural tooth, or dysmorphic, which may be conical, tuberculate or molariform. Mesiodens usually occurs in singlets and their occurrence in multiples is referred to as mesiodentes. Mesiodens can also be classified according to their position, occurrence, eruption pattern, and orientation, and thereby, it may
be unilateral or bilateral, isolated or associated with syndromes such as cleft lip and palate, cleidocranial dysostosis, Down’s syndrome and Gardner syndrome, erupted or unerupted or partially erupted, or it may be straight, rotated or inverted. Mesiodens are usually small with a cone-shaped crown and a short root. The conical mesiodens has certain characteristics like their usual location between the permanent maxillary central incisors, a rare instance of the labial eruption, complete root formation ahead of adjacent teeth, and tendency to cause malposition of the central incisors.

About 25% of mesiodens that erupt into the oral cavity, can be easily diagnosed clinically, and the unerupted ones are best diagnosed by clinical and radiological evaluation. Intraoral periapical radiographs (IOPAR), occlusal and panoramic radiographs help in the diagnosis of mesiodens, and buccolingual position of the unerupted mesiodens can be determined by the parallax technique. However, Computed Tomography gives a greater detail regarding their relationship with the adjacent teeth.

The presence of mesiodens may lead to various complications such as delayed eruption, malposition and impaction of permanent incisors; crowding, spacing, median diastema, rotation and root resorption of the adjacent teeth or even eruption of incisor in the nasal cavity and cyst formation.

Management is done either by extraction or by retention and observation of the mesiodens, although early extraction is desirable to prevent future complications.

Here, we report a case of double mesiodentes in a non-syndromic patient, which are in line with the maxillary central incisors and causing malocclusion, and unaesthetic appearance.

**CASE REPORT**

A 10-year-old boy reported to the Department of Oral Medicine and Radiology, Dr. Syamala Reddy Dental College, Hospital and Research Centre, Bengaluru, Karnataka, India; with the chief complaint of irregularly arranged teeth in the upper front teeth region of the jaw, causing unaesthetic appearance. There was no relevant medical and family history, and the patient was otherwise healthy with no associated syndrome. On clinical examination, the patient was found to be in a mixed dentition stage and in addition, there were two conical mesiodentes present in line with and in between 11 and 21 resulting in rotation of the maxillary central and lateral incisors (Figure 1a and b). No interference with the occlusion was noted, and the soft-tissue appeared normal. To investigate further, routine radiographic (intraoral periapical radiographs, occlusal and orthopantomograph) examinations were carried out to evaluate the status of the mesiodens, as well as the other teeth and to exclude the presence of any other impacted supernumerary teeth. The radiographs revealed twin conical mesiodens with completely formed roots between the central incisors and also impacted canines (both right and left) with enlarged follicles in the maxillary arch (Figures 2-4). A multidisciplinary approach is desirable to manage this type of case. Hence, the patient was referred to the Department of Pediatric and Preventive Dentistry, where mesiodentes were extracted under local anesthesia (Figures 5-7), and it was planned to keep the patient under observation until all the permanent teeth erupt into the oral cavity and then to decide for the extent of orthodontic treatment required.

**DISCUSSION**

Mesiodens are usually discovered during the first decade when the maxillary central incisors erupt and
radiographic examination helps to identify congenitally missing teeth, supernumerary teeth, cyst, and tumor in the case of delayed eruption or malposition of maxillary central incisors. In our case, malposition of maxillary incisors causing aesthetic problem has led our patient, a 10-year-old boy to seek medical advice.\textsuperscript{17}

Mesiodens may be single or multiple and often remain unerupted.\textsuperscript{8} According to Asaumi \textit{et al.}, the number of supernumerary teeth is one in 73\% cases, two in 26\%, and three in 1\% of cases.\textsuperscript{14} Gunduz \textit{et al.} documented occurrence of one supernumerary tooth in 76.8\% cases and two mesiodens bilaterally on either side of midline in 23.1\% cases and they further informed that only 25\% of mesiodens erupt into the oral cavity.\textsuperscript{18} According to different authors, mesiodens are mostly palatal to the central incisors; some overlap the dental arch and rarely placed labially.\textsuperscript{14,17} Roychoudhury \textit{et al.} found inverted impacted mesiodens in 62.5\% of their cases.\textsuperscript{19} In our case, the 10-year-old boy had twin mesiodens erupted bilaterally on either side of the midline and in line with the central incisors.

Mesiodens is called rudimentary when seen in permanent dentition and called supplementary when seen in primary dentition.\textsuperscript{7} Our patient presented with mixed dentition.

Morphologically, mesiodens may be eumorphic (resembling natural teeth) or dysmorphic (conical, tuberculate, or molariform). Conical mesiodens usually does not affect the eruption of permanent central
incisors but cause their displacement which may involve crown, root or the whole tooth. Conical mesiodens may be inverted or non-inverted. In the present case, the associated mesiodens were conical, non-inverted, erupted, and caused rotation of permanent central and lateral incisors.

As supernumerary teeth can affect the eruption and normal position of adjacent teeth, they often require clinical intervention. Management of mesiodens depends on its type, position, eruptive pattern, and stage of dentition. Mesiodens is managed either by extraction or by the conservative method of retention and observation. Extraction may be of three types: immediate, early and late. Early or late extraction depends on intervention before or after root formation of permanent incisors. The early extraction is favored by Yagüe-García et al. to prevent complication but many discouraged it for chance of iatrogenic damage to the developing permanent incisors during extraction. Delayed extraction is recommended around the age of 10 years. Further delays may cause a problem in spontaneous eruption and may cause malalignment inviting complex surgical and orthodontic management. Immediate extraction is advisable in delayed eruption of primary or permanent teeth, malposition of adjacent teeth, association of pathological condition, hindrance to orthodontic appliance, or in the case of spontaneous eruption of mesiodens. Extraction in early mixed dentition is favored as here normal eruptive force allows spontaneous eruption, proper alignment of incisors and reduces the need for extensive orthodontic treatment. Conservative method may be tried in the symptomless unerupted tooth without any associated pathological condition. In this particular case, considering the age of the patient, eruption status of the maxillary central incisors as well as the malocclusion and aesthetic problem, surgical removal of the mesiodentes was carried out, to provide room for self-correction of the malocclusion to some extent, to provide opportunity for the impacted canines to erupt thereby preventing cystic transformation of their enlarged follicles and to help reducing the duration of future orthodontic treatment.

CONCLUSION

Here, we have reported a rare case of twin mesiodens in the maxillary arch, causing malocclusion and aesthetic problem in the patient.

Mesiodens is a fairly common but interesting developmental dental anomaly that may hamper the aesthetic and function value. Early diagnosis of a mesiodens reduces complications and its extraction in the early mixed dentition help spontaneous alignment of the adjacent teeth and reduces the treatment span, which will definitely improve the quality of life and self-esteem of the patient.

REFERENCES


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