

Twin mesiodens in the maxillary arch causing difficulty in speech: A case report

Karthik Venkataraghavan¹, Anantharaj Athimuthu², Praveen Prasanna³, Prathibha Rani Shankarappa⁴, Jaya Agali Ramachandra⁵

Abstract

Background: Supernumerary teeth are a relatively frequent disorder of odontogenesis characterized by an excess number of teeth. Mesiodens is the most common type of supernumerary teeth found in the premaxilla between the two central Incisors. They can be supplemental (resembling natural teeth), conical, tuberculate or molariform.

Aim: This is a case report of a 13-year-old boy of asian origin who presented to the Department of Pediatric and Preventive Dentistry, D.A.P.M.R.V. Dental College, with conical shaped twin mesiodens in the maxillary arch, palatal to the permanent central Incisors, interfering with occlusion and causing difficulty in speech.

Results and Conclusion: Extraction of the two mesiodens was planned to correct the malocclusion and improve the speech.

Keywords : Mesiodens, Supernumerary teeth, Maxilla, Disturbances in Dental Development, Occlusion / Orthodontics, Radiology, Supplemental teeth

Introduction

Numerical superiority in a dentition when compared to a normal situation is known as Hyperdontia. The tooth or teeth causing this numerical excess is are described as supernumerary tooth or teeth, which occur as a result of developmental dental disturbance during odontogenesis, resulting in the formation of excess teeth.

The first report of supernumerary teeth appeared

between AD 23 and 79^{1,2} and have been classified according to their form as conical, tuberculate, supplemental and odontomas, and according to their location as mesiodens, paramolar, and distomolar.³

Primosch⁴ classified them into two types according to the shape: supplemental (eumorphic) and rudimentary (dysmorphic, including conical, tuberculate and molariform type).

Amongst these, mesiodens are the most common type of supernumerary teeth, which refers to a tooth/teeth present in the premaxilla between the two central incisors. They are usually small, with a cone shaped crown and a short root, occurring singly or paired, erupted or impacted and occasionally even inverted. The prevalence of supernumerary teeth in various populations is reportedly between 0.1 to 3.6% with a male to female ratio of 2:1, of which mesiodens account for approximately one-third of these cases.⁴ The occurrence of supernumerary teeth in the Indian population is 87% with one supernumerary tooth, 12% with two and 1% with multiple supernumerary teeth.⁵ Mesiodens occur more commonly in the permanent dentition (0.1 – 3.6%) when compared to that of primary dentition (0.02-1.9%).⁶

¹ M.D.S, Professor, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore

² M.D.S, Professor and Head, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore

³ M.D.S, Professor, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore

⁴ M.D.S, Lecturer, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore

⁵ M.D.S, Post Graduate Student, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore

Corresponding Author: Dr. Karthik Venkataraghavan, M.D.S
Address: Professor, Department of Pediatric and Preventive Dentistry, D.A. Pandu Memorial R.V Dental College, Bangalore, India.
Phone: +91-80-22445754 (Extn:34), Fax: +91-80-26658411.
Email: veekart@yahoo.co.in



Figure 1: Proclined maxillary central incisors



Figure 2: Intraoral appearance of the mesiodens in relation to the central incisors



Figure 3: Palatal view

Case Report

A 13-year-old boy reported to the Department of Pediatric and Preventive Dentistry, D.A.P.M.R.V. Dental College, Bangalore, with the chief complaint of two rows of teeth in the upper front teeth region causing difficulty in speech, as well as concern about the unesthetic appearance (Figure 1).

Clinical examination revealed that the patient was in a mixed dentition stage. Additionally, there were two conical mesiodens present palatal to 11 and 21 resulting in protrusion and spacing of the maxillary central incisors (Figures 2 and 3). The mesiodens were interfering with occlusion and the patient also exhibited difficulty in speech. Soft tissue was normal, there was no relevant medical and family history and the patient was otherwise healthy and not associated with any syndrome. Routine radiographic (Orthopantomograph, IOPA, and occlusal) examinations were carried out to evaluate the status of the mesiodens,

as well as the other teeth. The radiographs revealed twin conical mesiodens with completely formed roots between the central incisors and impacted canines (both right and left) in the maxillary arch (Figures 4 and 5).

After a detailed examination the decision was made to extract the two mesiodens to relieve the patient of his problems associated with speech and appearance. The mesiodens were extracted under local anesthesia (Figures 6 and 7), and necessary treatment options such as speech therapy and orthodontic management were planned.

Discussion

It was originally postulated that mesiodens represented a phylogenetic relic of extinct ancestors who had three central incisors (atavistic theory).⁷ A second theory, known as dichotomy, suggests that the tooth bud is split to create two teeth, one of which is the mesiodens.⁸ The third theory, involving hyperactivity of the dental lamina, is the

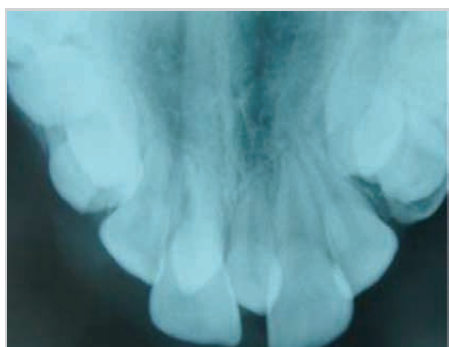


Figure 4: Occlusal radiograph showing the position of the two mesiodens in relation to the central incisors

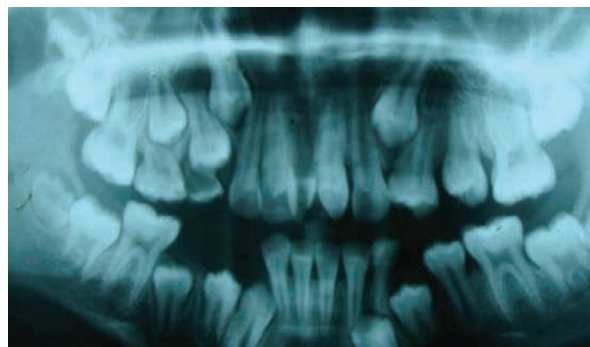


Figure 5: Orthopantomograph (OPG) showing the position of all the teeth



Figure 6: Post extraction - palatal view



Figure 7: Extracted mesiodens

most widely supported.⁹ According to this theory, remnants of the dental lamina or palatal offshoots of active dental lamina are induced to develop into an extra tooth bud. It is said that genetics as well as environmental factors also play a role in the development of supernumerary teeth. Autosomal dominant inheritance with incomplete penetration has been the proposed genetic theory.

A large percentage of anterior supernumerary teeth remain unerupted. It has been stated that only 25% of maxillary anterior supernumerary teeth erupt.⁹ They may occur as a single isolated dental anomaly or in association with other developmental anomalies or syndromes such as cleft lip and palate, cleidocranial dysostosis, Down's syndrome and Gardner's syndrome.¹⁰

The conical shaped supernumerary teeth have certain specific characteristics:²

- They are usually located between the permanent maxillary central incisors but rarely erupt labially.
- They usually have complete root formation ahead of the adjacent teeth.
- They rarely cause delay in the eruption of central incisors, but may cause alteration of the path of eruption of these teeth.

In addition to routine OPG, occlusal and intraoral periapical radiographs are used for the initial diagnostic phase of mesiodens, while further procedures may be required to better define their position in relation to the adjacent teeth and anatomic structures. Undoubtedly, greater detail concerning their location could be obtained through computerized axial tomography which also helps to evaluate their relationship with the adjacent tooth structures.¹²

Supernumerary teeth, particularly in the maxillary anterior region, may cause the following clinical problems:¹¹

- Delayed or impaired eruption of succedaneous teeth (26 – 52% of cases)
- Displacement or rotation of permanent teeth (28 – 63% of cases)
- Crowding of teeth, abnormal diastema or premature space closure
- Dilacerations or abnormal root development of permanent teeth
- Cyst formation (4 – 9% of cases)
- Eruption into the nasal cavity.



Figure 8: Two Months post-op, space has closed considerably with noticeable improvement in speech

There is no precise indication concerning the ideal time for surgical removal of impacted mesiodens. According to Canoglu et al,¹² mesiodens can be best removed when the permanent central incisors begin to erupt, but this may not be always possible. On the contrary, Primosch,⁴ discourages early extraction of mesiodens due to the risk of iatrogenic damage to the developing adjacent permanent teeth.

In this particular case, considering the age of the patient as well as the problems associated with the mesiodens (speech difficulty and unesthetic appearance), surgical removal of the mesiodens was carried out, since both the maxillary central incisors had totally erupted showing complete root formation and advanced apical closure.

It is said that complications associated with early removal of such teeth are infrequent and minor in nature. Proper evaluation and early surgical therapy may help to reduce the duration of orthodonticso treatment and, coupled with speech therapy, will improve the quality of life and self-esteem of the patient.

Conclusions

This paper reports a rare case of twin mesiodens in the maxillary arch which apart from causing the usual malocclusion also caused speech difficulty in the patient.

Detailed examination of the patient is important to rule out any other unknown problems that may be associated with mesiodens.

This paper has reported a new problem (speech Difficulty) which has not been reported in the literature.

It is important paediatric dentists to evaluate the presenting case thoroughly before deciding on a systematic and multidisciplinary treatment plan as this paper has attempted to do.

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