



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2024; 10(2): 111-114
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www.oraljournal.com
Received: 13-01-2024
Accepted: 11-02-2024

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A rare case of bilateral rudimentary mesiodentes in a non-syndromic patient

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DOI: <https://doi.org/10.22271/oral.2024.v10.i2b.1932>

Abstract

Supernumerary teeth which is also known as Hyperdontia is a common developmental dental anomaly in which there is an increase in the number of teeth beyond the normal set of teeth. Supernumerary teeth are more common in men as compared to women and are seen in permanent dentition more often than in primary dentition. Mesiodens is the most prevalent type of supernumerary tooth observed in the human population which is generally found in the maxillary anterior region. Unilateral occurrence is the predominant pattern of mesiodens, while bilateral presentation is very rare. Mesiodens may vary in morphology from small rudimentary conical shape to complex form with multiple tubercles. This paper presents a rare case of bilateral rudimentary mesiodentes present palatally in maxillary central incisor region causing functional problems. This article aims to present a rare case of bilateral rudimentary mesiodens in a non-syndromic patient.

Keywords: Supernumerary teeth, mesiodens, conical, tuberculate, rudimentary

Introduction

Supernumerary teeth refer to as any teeth or structures resembling tooth like structures that exceed the normal dentition (20 deciduous teeth and 32 permanent teeth) ^[1]. The condition of supernumerary teeth is also known as Hyperdontia. Supernumerary teeth may present as individual tooth or multiple teeth. They may appear as unilaterally or bilaterally and may be erupted or impacted. According to literature, the prevalence of single supernumerary teeth approximated to be 76–86%, double supernumerary teeth to be 12–23% and multiple supernumerary teeth to be less than 1% ^[2].

Hyperdontia can affect either one or both the dental arches but maxillary arch is more commonly affected. As per studies, around 80% to 90% of the supernumerary teeth develop in maxilla and approximately half of them are observed in the anterior region ^[3]. Supernumerary teeth occur in both primary and permanent dentition but are five times more frequently found among the permanent dentition. Supernumerary teeth prevalence ranges from 0.1% to 3.8% in the permanent dentition and from 0.3% to 0.8% in the primary dentition ^[4].

Mesiodens is an atypical dental anomaly that develops in the premaxilla and is usually found in the maxillary anterior region. Mesiodens can present as one tooth or multiple teeth, on either one or both sides. The appearance of more than one mesiodens is referred to as ‘mesiodentes’. The occurrence rate of mesiodens in population varies from 0.15% to 1.9%. Mesiodens is more commonly seen in men as compared to women with a ratio of 2:1 (M:W) ^[5]. Mesiodentes may erupt as normal or impacted teeth, appear inverted, erupt in an ectopic position, or follow abnormal path of eruption. They are either located buccally or palatally or between the two maxillary central incisors.

This case report describes a rare case of bilateral rudimentary mesiodentes in which one is of conical type or peg shaped and the other one is of tuberculate type located palatally in the maxillary central incisor region in a 24-year-old male.

Case Report

A 24 years old healthy male presented to our clinic with chief complaint of difficulty in chewing food. On intra oral examination, two abnormal extra teeth were present on palatal

aspect of maxillary central incisors and no permanent teeth were missing from the dental arches. Both teeth were fully erupted; one tooth was conical in shape which was located palatal to 21 and 22 causing mesiobuccal rotation of 21. The other tooth was barrel shaped with 3 cusps present located palatal to 11 and 12. The soft tissue surrounding these teeth appeared normal (Fig. 1 & 2).



Fig 1 & 2: Clinical presentation showing bilateral mesiodentes

IOPA (Intra-oral periapical) radiograph of the maxillary central incisor region demonstrated two extra teeth with conical crowns and completely formed roots superimposed above both permanent maxillary central incisors (Fig. 3). These extra teeth or supernumerary teeth were diagnosed as rudimentary mesiodentes based on clinical and radiographic examination. Out of these, one was of conical type or peg shaped mesiodentes and the other one was tuberculate type mesiodentes present in the maxillary central incisor region. No other dental anomaly was detected.



Fig 3: Intra-oral periapical radiograph showing bilateral mesiodentes

As patient was complaining of difficulty in chewing food because of these supernumerary teeth, so extraction of both these mesiodentes was done under local anesthesia.



Fig 4: Extracted Mesiodentes

Extracted mesiodentes were of abnormal shape, size and structure unlike the normal tooth morphology. Conical type of mesiodentes was smaller in size, peg shaped and cervical bulge can be seen. Tuberculate type of mesiodentes was barrel shaped and consisted of 3 cusps in which 2 cusps were present incisally and single cusp could be seen on buccal surface of the tooth. Cingulum could also be seen on palatal surface of this tooth. Root formation was complete with closed apex of both these mesiodentes (Fig. 4).

Patient was recalled for follow-up after 10 days and it was found that healing was satisfactory (Fig. 5). On the basis of clinical and radiographical evaluation, diagnosis of bilateral rudimentary mesiodentes was made.



Fig 5: Post-operative image

Discussions

Supernumerary teeth are dental growth abnormalities which develop during odontogenic process which results in the formation of additional tooth/teeth besides regular number of teeth. The prevalence of supernumerary teeth is estimated to be around 0.15% - 3.9% in the general population. They are usually asymptomatic, but they can cause a variety of dental problems such as crowding, displacement, rotation of adjacent teeth, malocclusion etc. They can develop anywhere in the oral cavity but mostly occur in the anterior region. When they are located in the anterior region, they might cause aesthetic and functional problems. Maxillary anterior supernumerary teeth exhibit the possibility of either erupting into the oral cavity or remain encased in the alveolar bone structure. It is reported that around 25% of these teeth are erupted in the oral cavity, while remaining are unerupted.⁶In our patient both teeth were found to be fully erupted in the oral cavity.

Supernumerary teeth are classified on the basis of structure

into two types: supplemental and rudimentary. Supplemental supernumerary teeth are also known as eumorphic teeth and they have morphology similar to normal dentition. Rudimentary Supernumerary teeth are also known as dysmorphic teeth which have dissimilar morphology to normal teeth and are small, conical, tuberculate or odontome in shape [7]. Mesiodentes in our patient were dysmorphic and hence classified as rudimentary.

Supernumerary teeth etiology is not completely known. They can be caused by genetic factors, environmental factors or combination of both. Therefore, it is suitable to consider hyperdontia as a disorder of multifactorial inheritance as most experts suggests that inheritance is a key factor in the development of mesiodens and therefore a detailed family history is recommended [8]. Many theories have been developed for the etiology of supernumerary teeth:- differentiation, conrescence, post permanent, dichotomy and hyperactivity. Out of these, the hyperactivity theory is the most widely accepted for the etiology of hyperdontia and it states that supernumerary teeth are derived from independent local hyperactivity of the dental lamina. This theory also proposes that when the dental lamina or its remnant rest cells becomes hyperactive due to the induction by initiation factors, it can lead to the development of dental papilla and subsequently, an enamel organ that matures into a supernumerary tooth [9].

Hyperdontia is mostly associated with syndromes like Gardner's Syndrome, Cleidocranial Dysplasia, Down syndrome, Crouzon Syndrome etc, and also with systemic conditions such as cleft lip and palate. But if it occurs in non-syndromic patient, then it is said to be as an unusual phenomenon [10]. The non-syndromic supernumerary teeth usually occur in maxilla than in mandible. They are more frequently found among males than in females and usually develop in permanent dentition than in primary dentition. Patients associated with non-syndromic supernumerary teeth could be linked to heredity factors; however family history should be carefully studied. In our patient, there was no other disease or syndrome associated with mesiodens. The family history in our patient was negative for any such occurrence.

Mesiodens is an odontogenic anomaly and is considered as the most common supernumerary tooth which is small in size and usually occurs between maxillary central incisors [11]. They can be categorized as conical, tuberculate, or molariform based on their shape. Conical mesiodens is a small peg shaped tooth which often erupts into the oral cavity and has a completely formed root. Tuberculate mesiodens is barrel shaped with several tubercles or cusps present. They are usually located more palatally and often form after development of conical mesiodens. The molariform mesiodens, which resembles a premolar and has a fully developed root, is a third, more unusual variety [12]. In our patient conical and tuberculate morphologies were present.

Mesiodentes are usually asymptomatic and do not exhibit any clinical manifestations. They are typically detected or identified during routine dental or radiographic examinations. There are variety of complications that arise with the mesiodentes and the most common ones are delayed eruption of permanent teeth (26-52% of cases) and displacement or rotation of adjacent permanent teeth (28-63% of cases) [13]. The less common complications are crowding, diastema, dilaceration of permanent teeth, formation of cyst, root resorption and eruption of tooth into the nasal cavity. Since, mesiodens can cause a variety of complications; therefore it is important for the clinician to diagnose it in early stage which

allows minimal treatment and avoiding any surgical procedure. It further prevents physiological, esthetics and functional problems especially in children.

Conclusion

It is a rare case report of bilateral rudimentary mesiodentes in the maxillary anterior region located palatally causing occlusal disturbances as well as difficulty in chewing food in the patient. This case is unique due to the presence of bilateral mesiodentes in patient who does not have any genetic or familial disorder.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Sindhu N, Sharma P. A rare case of bilateral rudimentary mesiodentes in a non-syndromic patient. International Journal of Applied Dental Sciences. 2024; 10(2): 111-114.

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