An Unusual Case of Mesiodentes: Peek-A-Boo

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Abstract: Mesiodens, a common supernumerary tooth found in the midline in anterior maxilla. Multiple mesiodens are termed as ‘mesiodentes’. This report presents an extremely rare occurrence of two mesiodentes with different morphology and their associated problems. It is an asymptomatic condition and is usually diagnosed on routine clinical and radiographic examination. This article also elucidate about the signs, symptoms, complications and management of mesiodentes.

Keywords: mesiodentes, supernumerary, varied morphology.

I. Introduction

By definition, supernumerary teeth are extraneous teeth in comparison to normal dentition. They are a relatively frequent disorder of odontogenesis characterized by an excess number of teeth [1]. The most common type of supernumerary tooth as indicated by Alberti et al, is mesiodens [2]. Mesiodens may occur as single, multiple, unilateral or bilateral. The presence of multiple supernumerary teeth is called ‘mesiodentes’[1]. Morphologically, mesiodens may have heterogeneous forms like cone-shaped crown, generally smaller in size than the adjacent normal teeth. It is also be found to mimic a natural tooth shape. The root is often totally formed and may be curved or globular. It may be normal or inverted in position [3]. In general population the prevalence is between 0.15% and 1.9% and more common in males rather than females[4].

The occurrence of mesiodens in primary dentition is rare despite the fact that in permanent dentition it is considered the most common dental anomaly[5]. 82% of the cases occur in the maxilla, specifically in the premaxillary region. However, few studies have reported them in mandible also [6]. In general mesiodens remain impacted and asymptomatic and are usually discovered during routine radiographic examination [7]. The most common complications of mesiodentes are the delay eruption (26–52%) and displacement/rotation (28–60%) of maxillary permanent incisors. Relatively less common complications include crowding, dilaceration of permanent teeth, diastema, eruption into the nasal cavity and cyst formation [8].

Mesiodens is frequently associated with several craniofacial anomalies and syndromes, including cleft lip and palate, cleidocranial dysostosis, Gardner’s syndrome and chondroectodermal dysplasia [9].

A rare combination of erupted paired mesiodens with one tooth between the maxillary permanent central incisors and another tooth palatal to it promoted us to present this case report and hence the title.

II. Case Report

A 25-year old Indian male was referred to the Department of Orthodontia with a chief complaint of crowding in the maxillary anterior region. The intraoral examination confirmed the patient’s chief complaint (Figure 1.2). Panoramic and intraoral radiographs revealed the presence of two mesiodens teeth, located between the roots of the permanent central incisors (Figure 3.4). The roots of the permanent central incisors had migrated distally, owing to the presence of the mesiodens.
Figure 1: Double mesiodentes present between 11 and 21 and another palatally behind the first mesiodens.

Figure 2: Maxillary cast showing tuberculate mesiodens between 11 and 21 and conical mesiodens palatally.

Figure 3: The OPG shows a mesiodens at the midline and maligned teeth.

Figure 4: Radiograph showing erupted mesiodens in relation to 11 and 12 and the other palatally to it.

The treatment plan includes removal of the mesiodentes. The mesiodens were of tuberculate and conical variety. The teeth were removed under local anaesthesia without any complication (Figure 5). Recall and follow up was done for 2 months with no complications and partially self correction of rotated anterior teeth was noticed. The patient is now undergoing orthodontic treatment for crowding.
III. Discussion

Erupted double mesiodentes which is neither non-syndromic nor non-familial, is a rare occurrence and this article reports such a case. The etiology of a mesiodens is still not clearly established in the literature. Three theories have been postulated that mesiodentes represented a phylogenetic relic of extinct ancestors who had three central incisors known as phylogenetic reversion (atavism)[10]. A second theory known as dichotomy states that the tooth bud is split to create two teeth, one of which is the mesiodens. The third theory, involving hyperactivity of the dental lamina, is the most widely supported. 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, which results in a supernumerary tooth. Thus, the localized independent hyperactivity of the dental lamina is the most accepted cause for the development of supernumerary teeth[11].

It has been observed that supernumerary teeth are more common in family members suggesting a hereditary factor. It has been suggested that environmental factors might have influence on genetic susceptibility which could probably be a cause for negative family history as it does not follow mendelian trait[12].

Mesiodens can significantly alter occlusion and appearance by altering the eruption and position of the incisors[13]. Mesiodens can occur individually or as multiples, may appear unilaterally or bilaterally, and often do not erupt. According to the shape and size mesiodens are classified as eumorphic and dysmorphic. The eumorphic subclass is usually similar to a normal-sized central incisor, whereas the dysmorphic teeth have different shapes and sizes and are categorized into conical, tuberculate, supplemental and odontomes[10].

Mesiodens are usually located palatally between central incisor with completely formed root and conical form is the most common[10], but here we present a case of mesiodente with one conical and another of tuberculate shape.

In a study by Nagaveni et al, out of 27 mesiodens, complications associated with mesiodens occurred in frequency of 23% midline diastema, 14.8% occlusal interference, 7.4% root resorption and 3.7% delayed eruption of permanent incisors[14]. In a study by Gunduz et al, 78.8% of mesiodentes were fully impacted, 7% were partially erupted and 14.1% were fully erupted. Most of the mesiodentes (55.2%) were found to be in vertical position (55.2%) followed by inverted position (37.6%) and horizontal position (7%) [15].

Early diagnosis and proper line of treatment is necessary to prevent associated complications. There are two methods for extraction of mesiodens either extraction before root formation of the permanent incisors or extraction after root formation of the permanent incisors. The earlier the mesiodens is extracted less the chance that the permanent tooth will be mal-aligned. Delayed intervention has resulted in mal-alignment as it has happened in this case where we encountered problems like deviation along the vertical axis of the incisors and crowding[16].

Mesiodentes are frequently associated with various craniofacial anomalies and syndromes mentioned previously, however it is rare to find multiple supernumeraries in individuals with no other associated disease or syndrome [17]. In this case reported the patient was not affected with any syndrome.

IV. Conclusion

The case presented here is considered to be rare, since paired mesiodens without inversion, erupted with one being conical in shape and another tuberculate. The occurrence of two mesiodentes was definitely regarded as a contributory factor to the crowding in the anterior maxillary region as evidenced by rotation of central incisor teeth. The post-surgical phase fortunately was uneventful and the fixed orthodontic therapy was commenced after a relatively short follow-up period.

Figure 5: Post extraction photograph with ongoing orthodontic treatment
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References