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Bilaterally Erupted Conical Shaped Supernumerary Tooth in a Mixed Dentition: A Case Report

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Abstract

Supplemental teeth present in the normal dentition are known as supernumerary teeth, the most common being mesiodens, which are usually seen in the premaxillary region. Supernumerary teeth are considered as one of the most common dental anomalies in the primary and early mixed dentition. A supernumerary tooth in the primary or mixed dentition usually causes ectopic or delayed eruption of permanent incisors which may further alter the occlusion and might also compromise esthetics. Here we discuss a case of bilateral supernumerary teeth in a mixed dentition in a female child.

Keywords : supernumerary, supplemental, mesiodens

Introduction

One of the most common dental anomalies affecting the primary and early mixed dentition are supernumerary teeth whose prevalence ranges from 0.10% to 3.6% in the permanent dentition and 0.02% to 1.9% in the primary dentition. A tooth located between the maxillary central incisors is referred to as a Mesiodens. Overall prevalence of mesiodens has been reported clinically between 0.15% and 1.9%.

Various theories have been concurred regarding the development of a supernumerary tooth- atavism, dichotomy of the tooth germ, or local hyperactivity of the dental lamina. However, the hyperactivity theory is the most accepted which states that supernumerary teeth are derived from independent local hyperactivity of the dental lamina. Genetics has also been seen to play a major role in the development of mesiodens, since such teeth have been diagnosed in twins, siblings and sequential generations of a single family.

According to sex predilection it has been seen that males are affected twice as frequently as females.[1-6]

Based on morphology, mesiodens may present itself with a cone-shaped crown, smooth surface and a smaller size than the adjacent normal teeth or with a tuberculate shape and normal size, which may mimic a natural tooth. The root is usually completely formed and is often arched and globular.

Mesiodens most commonly occurs unilaterally although it might also be found bilaterally. But the occurrence of three or more supernumerary teeth in the median region of the palate is quite rare. Most common site of occurrence is between the central incisors, particularly on the palatal side, along the sagittal median plane. From time to time it is found high and inverted into the palate or in a horizontal position.[4,6,7]

In most cases, the supernumerary tooth is totally impacted (88.7%), but its presence may create some clinical problems, especially in the stages of the primary and early mixed dentitions.

The most common clinical complications of mesiodens include an abnormal central diastema, delayed eruption, abnormal tooth eruption, abnormal occlusion development, resorption of the roots of the adjacent incisors and cystic degeneration.[8-14]

Case Report

A11-year-old female patient reported with her parents to the Department of Pedodontics and Preventive Dentistry, with a chief complaint of food lodgement in the upper front teeth region with an unesthetic appearance. The familial, medical, and dental history were non contributory. Extraoral examination did not reveal any abnormalities. Intraoral

examination revealed a mixed dentition and in addition, there were two mesiodentes of conical type present palatally, behind the permanent maxillary lateral incisors. (Fig 1 & 2)

No other interference in occlusion was noted, and the soft tissues appeared normal. (Fig 3 & 4)

To investigate further, routine radiographic (maxillary occlusal and orthopantomograph) examinations [Fig 5 & 6)] were carried out to evaluate the status of the mesiodentes, as well as the other teeth and to exclude the presence of any other impacted supernumerary teeth. The radiographs showed two mesiodens of conical shape present palatally behind the permanent maxillary lateral incisors. A multidisciplinary approach was planned to approach this case in which initially it was decided to extract the mesiodentes under local anesthesia [Fig7 & 8].

This would be followed by constant recall to assess the eruption of the permanent maxillary canines to decide the extent of orthodontic treatment.

Discussion

Since Pediatric dentistry allows the practice of interceptive orthodontics, thereby bestowing upon the pediatric dentist, opportunities of providing timely guidance in the development of occlusion.

The current case report presents the management of developing malocclusion in the anterior region due to the presence of supernumerary teeth. A mesiodens occurring in the primary dentition is a rarity even though, it being the most common dental abnormality in the permanent dentition.[15] In most cases the supernumerary teeth are discovered during the eruption of the maxillary central incisors and radiographic examinations are performed as an aid to screen for any other malformations and abnormalities.[16] Although various theories have been reported regarding the etiology but the topic still remains controversial.[17]

Heredity has been suggested to be an etiologic factor based on the observation that supernumeraries are more common in family members; however, it does not follow a simple Mendelian pattern.[18]

It was originally thought that the occurrence of mesiodens might be based on the phylogenetic theory reversion (atavism) but it has recently been discarded by the embryologists.[19] Although the dichotomy theory states that, a mesiodens arises due to the splitting of the tooth bud, Taylor argued that splitting of the tooth bud

may either form two equal sized teeth or one normal and one dysmorphic tooth.[15]

Depending upon the specific factors expressed from these ectomesenchymal cells, the shape of the accessory tooth germ forms in the vicinity of the incisors class of teeth becomes evident at the bell stage [20].

This case report presented with bilaterally erupted conical shaped supernumerary teeth (Fig 1). Since the supernumerary teeth were causing difficulty in chewing and leading to food lodgement, the surgical removal of both mesiodentes was planned and executed.

Timing of interceptive treatment should be as soon as possible following clinical detection of the eruption pattern of the permanent maxillary canines.

It has been suggested that a tooth delayed in its eruption by more than six months with respect to its antimere should be radiographically investigated.[21]

Follow up is indispensable in such cases since the eruption status should be monitored. The patient revealed satisfactory healing and a healthy chewing habit.

Since pediatric dentists are usually the first person to identify developing malocclusions, hence making it our responsibility to intervene and intercept in an apt manner to prevent future unfavorable sequalae.

Conclusion

Early diagnosis of supernumerary teeth reduces the treatment required and prevents development of associated problems. Diagnosis of mesiodens can be done by clinical and radiographic examination and extraction of mesiodens in the early mixed dentition helps spontaneous alignment of the adjacent teeth. If the permanent incisors fail to erupt spontaneously, further surgical and orthodontic treatment may be required.

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Legend Figures

Fig 1: Maxillary Occlusal view showing supernumerary teeth present bilaterally palatal to the permanent lateral incisor

Fig 2: Mandibular Occlusal view

Fig 3: Right side occlusion

Fig 4: Left side occlusion

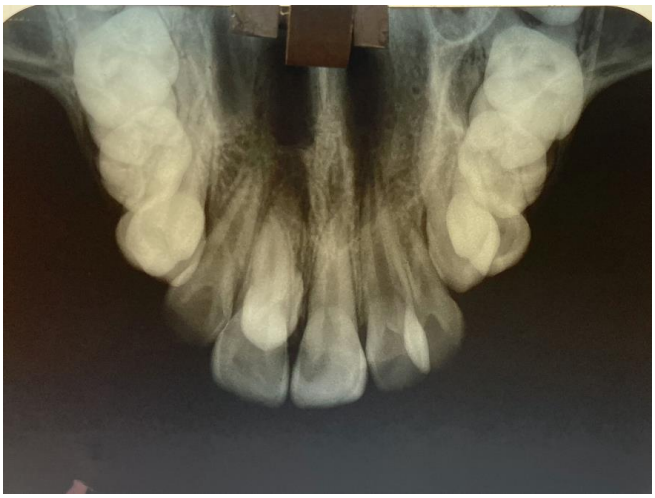

Fig 5: Maxillary Occlusal radiograph

Fig 6: Orthopantomograph (OPG) showing bilateral supernumerary teeth in the maxillary anterior region

Fig 7: Post extraction of bilateral supernumerary tooth

Fig 8: Conical supernumerary teeth