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Mesiodens: A Review and Report of Two Cases

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Abstract

Supernumerary teeth are most significant dental anomalies that affect the primary and early mixed dentition and may cause a variety of pathological disturbances to the developing permanent dentition. Mesiodens is a supernumerary tooth that commonly occurs in maxillary anterior region and located between the permanent maxillary central incisors. To prevent deleterious effects of mesiodens on dentoalveolar structures, early diagnosis and prompt treatment are required. This series of 2 cases features management of erupted mesiodens that was treated successfully by timely intervention in mixed dentition.

Keywords: Mesiodens, Supernumerary teeth, Mixed dentition

Introduction

Supernumerary tooth is defined as a developmental anomaly of number characterized by the presence of an extra tooth in addition to the normal dentition. It can be seen in both maxilla and mandible, where its occurrence is rare in the mandible. They are very rare in primary dentition. Among various types of supernumerary teeth, mesiodens are most common type. The prevalence varies between 0.3 to 3.8% of the population [1]. It can be seen as a single isolated or in association with specific developmental syndromes like cleft lip and palate, Downs syndromes, Cleidocranial dysplasia, Trichorhinophalangeal syndrome, Gardner's syndrome etc. The clinical problems associated with mesiodens include delay in eruption, rotation or displacement of the permanent maxillary anterior teeth [2].

Case report 1

A 9-year-old female patient came with a chief complaint of an extra tooth in upper front tooth region. Patient complaints of irritation from this tooth. There was no associated history of trauma and pain. Medical and family history was non-contributory. There were no signs of any syndrome. On intra oral examination it was observed that a mesiodens was present palatally between 11 and 21 **(Figure 1).** On IOPA radiograph examination showed the presence of mesiodens of conical shape parallel to the teeth between 11 and 21 **(Figure 2).** Treatment was planned to extract the mesiodens **(Figures 3 and 4).** The extraction was performed with local anesthesia (lidocaine 2% epinephrine 1:80.000), using the infiltrative technique first in the vestibular region, later in the papilla between the central incisors and finally in the palatal region in the nasopalatine nerve. The wound healing was uneventful and the patient presented with no post operative complication.

Figure 1: Maxillary intraoral examination

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Figure 2: Radiographic examination, IOPA irt 11, 21

Figure 3: Post extraction maxillary intraoral picture

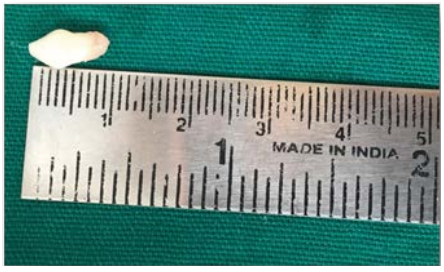

Figure 4: Extracted mesiodens

Case report 2

A 12-year-old male patient came with a chief complaint of irregularly placed upper front teeth and wanted treatment for the same. He was a normal healthy child with non contibutory medical and dental history. There was no family history or signs related to any syndrome. On intraoral examination, an extra tooth (supernumerary tooth) was noticed in the midline between the maxillary central incisors **(Figure 1)**. Patient was in his mixed dentition stage with primary molars and primary canines. Based on the clinical and radiographic findings, the supernumerary tooth was diagnosed as mesiodens associated with irregularly placed permanent maxillary incisors **(Figures 2 and 3).** Treatment plan included extraction of mesiodens followed by orthodontic correction of malocclusion **(Figures 4 and 5).** The extraction was performed with local anesthesia (lidocaine 2% epinephrine 1:80.000) via labial and palatal infiltration. The wound healing was uneventful and the patient presented with no post operative complication.

Figure 1: Labial view

Figure 2: Maxillary intraoral examination

Figure 3: Radiographic examination, IOPA irt 11, 21

Figure 4: Post extraction intraoral view

Figure 5: Extracted mesiodens

Discussion

Mesiodens can be single, multiple, unilateral or bilateral. The exact etiology of mesiodens is not known clearly. They can be due to genetic and environmental factors, hyperactivity of dental lamina, dichotomy of the tooth bud, syndromic conditions and developmental disturbances of teeth. Among these, hyperactivity of dental lamina theory is considered to be the most acceptable etiological factor in the development of mesiodens. Based on its morphology, mesiodens are of three types: conical (most prevalent), supplemental and tubercular type. They may be erupted or in some cases remain unerupted and cause malocclusion **[3].** Since most mesiodens are detected during radiographic examination of the upper anterior region, mainly during mixed dentition period or later, it may be postulated that mesiodentes are part of the permanent dentition, although a few reports have shown mesiodentes in the primary dentition **[10].**

The presence of erupted mesiodens can be diagnosed by clinical examination and the unerupted mesiodens can be diagnosed by both clinical and radiographic evaluation. Panoramic, maxillary occlusal and periapical radiographs are recommended to assist the diagnosis of mesiodens and the bucco-lingual position of the unerupted mesiodens can be obtained using parallax technique. The complications that can occur due to the presence of mesiodens include, delayed eruption, alteration in the path of eruption of permanent incisors, spacing, crowding, median diastema, impaction of permanent incisors, rotation and root resorption **[4].**

Management of mesiodens depends on the type, position of the tooth and the stage of dentition. Earlier removal of the mesiodens provides better prognosis as mentioned by Mann **[5].** In primary dentition, extraction of mesiodens is not advocated as they often erupt into the oral cavity and thus the risk of damaging the permanent incisor during surgical removal of mesiodens can be avoided. However, during early mixed dentition stage, the permanent maxillary central incisors erupt spontaneously after the extraction of mesiodens **[9].** This further leads to proper alignment of the teeth and reduces the need for orthodontic intervention. Clinical and radiographic reassessment is advised after 6 months of mesiodens extraction and if the permanent incisor does not erupt averagely after 12 months of extraction of mesiodens, then, closed eruption with orthodontic mechanotherapy is recommended **[6].**

According to Altan et al. the treatment of mesiodens can be performed using three methods: (a) spontaneous eruption; (b) early intervention; and (c) delayed intervention. They found 82 mesiodens within 71 patients from pediatric population (4–14-year-old children) from Tokat city in Turkey. In 76.8% of patient's clinical complications were observed **[7].** According to Kim et al. the optimal age for treatment, however, remains controversial **[8].**

Conclusion

Supernumerary teeth are of huge concern to both dentist and patient because of its potential problems and complications. Radiographic evaluation of erupted supernumerary teeth is important in the accidental detection of unerupted mesiodens. On diagnosis, every case should be treated properly to lessen problems to the developing tooth buds and dentition. Careful history taking, clinical and radiographic examinations can provide important information required for the diagnosis of such conditions. Once surgical removal of mesiodens is advised, long-term follow-up of treated case is required.

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