Case Report

Dental twinning in Primary Dentition: A Case report

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ABSTRACT

Odontogenic anomalies can occur as a result of conjoining or twinning defects. These include fusion, gemination and concrescence. The process of odontogenesis cannot be seen, therefore fusion and germination seems to be equivalent. This case report is of a boy aged-5-year who visited private dental clinic with a complaint of decayed upper front teeth. On clinical examination, the patient was diagnosed with ECC (Early childhood caries) and presence of fusion between primary upper left central incisor (61) and a supernumerary tooth. Radiographic analysis showed presence of a two roots with two root canals and external root resorption. The case was discussed and treatment planning was done to extract the tooth as a result of resorption in the apical region. The purpose of this report is to highlight the importance of diagnosing dental anomalies in the primary dentition, so as to organize a conservative individualized treatment plan to prevent complications during the child's formative years.

Key words: Primary double teeth, Fusion, Germination, Primary teeth.

INTRODUCTION

The occurrence of dental abnormalities can be in the number, morphology, or eruption pattern of the teeth affecting both the primary and permanent dentition.[1] The terms 'double teeth', 'double formations', 'conjoined teeth' [2-6] 'fused teeth'[7,8] or 'dental twinning' [9] are often used to describe fusion or gemination, both of which are primary developmental abnormalities of the teeth. However, literature shows that the differential diagnosis between fusion and gemination is difficult (in some cases, fusion with supernumerary tooth).The term "double teeth" is often used to describe both anomalies. [10] Traditionally, the terminology classifies fusion as a union of two separately developing tooth germs typically leading to one less tooth than normal in the affected arch. Whereas, Gemination occurs due to incomplete division of two teeth, resulting in a larger bifid crown structure with single root and single canal. The etiology of fusion may be due to some physical force or pressure produces contact of the developing teeth and subsequent fusion, depending upon the stage of development at the time of fusion, the union may be total or partial and may occur between a two adjacent teeth or between a normal and supernumerary tooth. [11] Clinically, in Gemination there is normal number of teeth in the dental arch but in the later there is one less than the normal teeth count however if the fusion is between normal and supernumerary tooth the teeth count remains normal(as in this case report). The prevalence of double teeth varies between 0.1 and 3% more commonly seen in mangoloids than caucasians affecting primary dentition than permanent, frequent in the maxilla than in the mandible, occurs mostly unilateral rarely bilateral. Although, cases have been reported in the posterior region, incisors (majority of the cases lateral incisors are affected) and canines are more susceptible. [12,13]

This article presents a case report of Con-joined primary central incisor and supernumerary tooth with Early Childhood Caries in a 5-year-old boy. Although there is extensive literature on fused and geminated teeth which affects the normal dentition, this report presents a rare case of fusion between a supernumerary tooth and the primary central incisor tooth.

CASE REPORT

A 5-year-old boy accompanied by his parents reported to a private dental clinic at Bangalore, India, with a chief complaint of decayed and discolored upper front teeth. The parents also had noticed that one of the upper front teeth was larger than the adjacent tooth. The parents informed a history of pain 3 months before and the pain subsided with antibiotics and analgesics. The parents also informed that none of the family members had any dental anomalies and the patient had no relevant medical history. Oral examination of the child revealed presence of all twenty primary teeth and was diagnosed with early childhood caries (ECC). The upper left primary incisor (61) was fused with a supernumerary tooth resulting in Double teeth. This tooth was affected with caries in the labial groove and showed grade II mobility. The mesio-distal width of 61 was greater than 51 and normal count of teeth suggested that the tooth 61 was fused with a supernumerary tooth. (Figure

1)

Figure 1: Intraoral Frontal view of a patient showing primary double teeth irt 61(fusion between central incisor and supernumerary tooth)

Radiographic evaluation of this double tooth revealed two root canals within a single root and external root resorption due to periapical infection. The permanent successor was present and was not affected by this anomaly. The radiograph also showed grossly destructed crown of 51 and 52 with pulpal involvement. (Figure 2)

After clinical and radiographic evaluation the patient was diagnosed with ECC with Double teeth (51). The parents were informed about the double teeth and treatment plan for the child which included oral prophylaxis, stainless steel crown for 54, pulp therapy followed by composite strip crown for 51, 52 and extraction of double teeth followed by fixed anterior space-maintainer. After dental extraction of 61 under local anesthesia the parents were given appointment for further dental treatment but the patient did not turn up for the appointment.

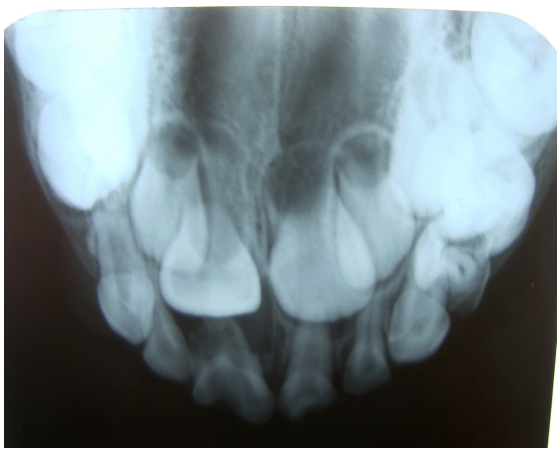

Figure 2: Occlusal radiograph showing double teeth with two roots and two canals with extensive root resorption.

The extracted specimen of 61 shows external resorption and completely fused teeth. (Figure 3)

Figure 3: Extracted primary double teeth.

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DISCUSSION

The factors which have been implicated as possible etiologies for fused teeth include thalidomide ingestion, hypervitaminosis, pressure from physical contact of young tooth buds, and genetic factors. [14] A genetic etiology also has been suggested for the development of supernumerary teeth, localized disturbances in odontogenesis, and extensions of, or epithelial remnants from, the dental lamina. [15,16]

Each Double Teeth was classified according to Aguilo et al. [1999], as

Type I: bifid crown, single root. A large crown with a notch on the incisal edge and a bifid pulp chamber, with normal dimensions of the root and radicular canal and cervical widening.

Type II: large crown, large root. A large crown, usually lacking a groove or notch, with single, shared, large root canal and pulp chamber and a wider than normal root.

Type III: two fused crowns, double conical root. Two fused crowns with a partial or total vertical groove extending cervically; the crowns may be symmetrical or show distinct differences, and the pulp chambers may be separate. One large conical root. The coronal and radicular portions of the pulp canal may be fused, or the coronal portion may be shared and end in two radicular canals.

Type IV: two fused crowns, two fused roots. Two crowns (as in type III) and two distinct, joined roots with separate root canals. Studies have shown that type IV DOUBLE TEETH most frequently, followed in order by types II, I, and III. Type I was found only in the maxilla, types II and III were found only in the mandible, and type IV was most frequently seen in the maxilla. [10] The present case also showed type IV Double Teeth.

Double Teeth is of interest because it is related to aesthetic and functional problems, such as ECC, delayed exfoliation due to difference in the resorption timing of the roots, and anomalies in the permanent dentition such as impaction of the successors, supernumerary teeth , permanent double teeth or aplasia of teeth. [11] Management of such teeth includes observation and allowance of normal exfoliation when a communication for bacterial access to the pulp chambers does not exist, endodontic therapy, restoration, separation with restoration, or extraction. [14] The above case suggested that presence of labial groove in the double teeth would have a synergistic effect on the occurrence of ECC. Thus, dental anomalies in the primary dentition should be diagnosed early to avoid ECC. The problem associated with treatment plan is the difference in the resorption timing of the fused teeth. Hence, the case of fusion needs to be carefully evaluated and treatment should be planned. In this case extraction was considered as the treatment of choice due to extensive external root resorption in 61 which would inturn allow for the normal eruption of the succedaneous tooth.

CONCLUSION

Fusion and Gemination are not usual conditions, but they are important dental anomalies. The anomalies of Permanent dentition are strongly associated with anomalies in the Primary dentition. Therefore recognizing the condition at the earliest by careful clinical and radiographic observations will facilitate the establishment of a right treatment at appropriate time with multidisciplinary view for better prognosis.

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