

“SIAMESE TWINS” – A MIRROR IMAGE IN PEDIATRIC DENTISTRY (ESTHETIC REHABILITATION OF A GEMINATED PRIMARY TEETH - A CASE REPORT)

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ABSTRACT:

Developmental dental disorders may be due to abnormalities in the differentiation of the dental lamina and the tooth germ (anomalies in number size and shape) or to abnormalities in the formation of dental hard tissue (anomalies in structure). The terms “double tooth”, “double formation”, and “joined tooth” or “fused teeth” are often used to describe gemination and fusion, both of which are primary developmental abnormalities of teeth. According to current definitions, gemination occurs when one tooth bud tries to divide, while fusion occurs if two buds unite. Clinical experience shows, however that diagnosis can be complicated due to super imposed anomalies. This report describes a unique case of geminated primary incisors, the potential difficulty in classifying the anomaly and the ways of differentiating gemination from fusion as well as esthetic rehabilitation of the anomaly are discussed.

KEYWORDS: Gemination, Double teeth, Fusion, Anomalies, Esthetics

INTRODUCTION

Odontogenic anomalies can occur as a result of conjoining or twinning defects, these include fusion (57%) and gemination (43%). They are more prevalent in primary dentition, with incisor being more affected ^{1,2,3}. These anomalies were mostly unilateral, and no difference was found in the proportion of double teeth in either the maxilla or mandible, or on the left or right side. The differential diagnosis between fusion and gemination is difficult, some authors use the terms as synonyms^{4,5,6}, while some differentiated by counting the teeth or shape of the root. Proper case history, clinical and radiographic examination can update the information required for the diagnosis of such abnormalities. It has been thought that some forces or pressure produces impact of the developing tooth germs or genetic inheritance can be the possible etiology ⁷.

In the anterior region, this anomaly also causes an unpleasant aesthetic tooth shape due to the irregular morphology. These teeth also tend to be greatly predisposed to caries and periodontal disease and in some case pulpal therapy is very complicated.

Case report

A four year old boy was brought to the department of pedodontic and preventive dentistry with the chief complaint of unesthetic decayed upper front (**Fig.1**) baby teeth. No extra oral alteration had been observed in the

clinical examination. Intra oral examination revealed twinning defect on the primary maxillary left central incisors. Oral and dental structures had a normal pattern obeying the chronology of eruption, and number of teeth in the affected arch is normal. (**Fig.2**)

On clinical examination, the double teeth were carious, nonvital and mesio distal dimension was almost twice that of contralateral teeth. Periapical radiographic examination revealed the bifid crown and two root with similar morphological pattern which is an unusual dental anomaly (**Fig.3**)

Based on consideration of several factors including the age of the child, preservation of the primary teeth, maintenance of arch length and esthetic satisfaction, and the treatment plan was pulpectomy followed by composite post and strip crown. After administering local anaesthesia, access opening was done in relation to lingual aspect of 51, working length was determined for two separate canals (**Fig.4**). The two canals were shaped and thoroughly irrigated with irrigating solutions. The final obturation was done with zinc oxide eugenol (**Fig.5**). After 1 week, composite post was fabricated and luted with glass ionomer in the two canals and strip crowns were placed in posting (**Fig.6**). Reshaping was done with fine finishing burs and given appearance of two individual teeth for esthetic satisfaction and to reduce the future space problem (**Fig.7**). After 3 months patient returned for



Fig.1 Preoperative view



Fig.2.Maxillary arch



Fig.3 Radiographic view



Fig.4.Working length determination

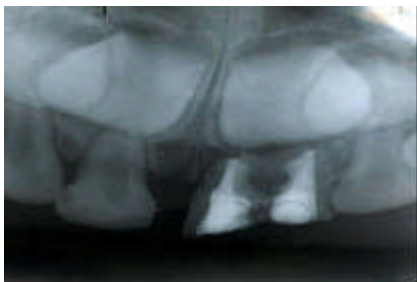


Fig.5. Obturation



Fig.6.Post operative radiographic view



Fig.7. Post operative view

evaluation, the teeth were symptom free and healthy. Then the child was kept under regular recall.

Discussion

Confusion arose in classifying the anomalous tooth as to whether it is a case of gemination or fusion. While the literature on the occurrence of double teeth is extensive, there is still much discussion concerning the nomenclature. Some authors have tried to differentiate them by counting the teeth or by observing the root morphology; others use fusion and gemination as synonyms. Finally some authors simply call the phenomenon "double teeth" or "connoted teeth" to avoid confusion over terminology^{8, 9}.

The use of Levitas' classification to distinguish between cases of fusion and gemination is very practical⁹. The differential diagnosis between fusion and gemination, based on number of teeth on the dental arch, is not however always practical¹⁰. This is because nothing impairs the fusion between a 'normal' and supernumerary element while the contiguous 'normal' tooth is congenitally absent, resembling clinical cases of gemination^{10, 11}.

The phenomenon of gemination arises when two teeth develop from one tooth bud, and as a result, the two halves of the joined crown are usually the mirror image. The number of teeth in the affected dental arch is normal. Radiographically, there is usually a common root and root canal, in rare cases two root and root canals are seen.

Fused teeth arise through the union of two normally separated tooth germs and depending upon the stage of development of the teeth at the time of union, it may be either complete or incomplete. In fusion there is one tooth less than the normal count.¹¹⁻¹⁴ However fusion can also be the union of a normal tooth bud to a supernumerary tooth germ. In these cases the number of teeth is normal and differentiation from gemination may be very difficult. It is important to note however that supernumerary incisors are usually cone shaped and aberrant such that a case of fusion between a normal and a supernumerary tooth will show difference between the two fused teeth. In the present case, clinically, although the crown is grossly decayed, from the mother's finding the two halves of the crown are the mirror images, the number of the teeth in the dental arch is normal and Radiographically, there are two separate root canals. So the clinical and radiographic findings fit the description of gemination more than that of fusion.

The clinical interest for the appearance of double teeth in the deciduous dentition is the clinical problem associated with them, including caries⁴ anomalies in the permanent dentition such as impaction of the successors^[4] permanent double teeth^[4] or aplasia^{4,15,16}. In this way, it is important to recognize the dental anomalies that will allow us to plan a careful treatment, including endodontic, conservative and esthetic consideration, when it is

required¹⁷. The patient's expectations and degree of compliance must also be accurately assured when determining suitable management. In this case, efforts were directed to preserve the arch asymmetry, tooth alignment, space maintenance and esthetic appearance, a conservative individualized treatment plan had been proposed. The two halves of the crown had been reshaped giving the appearance of two incisors, not only for esthetic reason, but also to maintain the space which will be utilized for the future eruption of permanent incisors. The patient had kept under regular recall visits to study the eruption pattern of permanent successor without any hindrance in the path of eruption and to maintain the primary teeth in position till the normal exfoliation time.

CONCLUSION

The usual approach to treatment of nonvital primary double teeth varies from endodontic treatment followed by full crown, to extraction of the anomalous tooth. In this case the former treatment option is followed and esthetically, functionally acceptable. Different cases require a variety of knowledge about alternative operative technique and abilities. Proper case history, clinical and radiographic examination can update the information required for the diagnosis of such dental anomalies and to organize a conservative individualised treatment plan.

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