

Esthetic management of Unilateral Conjoined primary incisor

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Abstract:

Conjoined teeth are the consequences of developmental anomalies leading to the eruption of joined elements. According to the current definitions, Germination occurs when one tooth bud tries to divide, while fusion occurs when two tooth buds unite. Geminated or fused teeth may present aesthetic and functional problems which require multidisciplinary care. This report describes a unique case of endodontic and cosmetic management of conjoined primary central incisor.

Introduction:

Dental conjoining anomalies involve twinning and rare instances of triplication. They occur either as fused or geminated teeth. Dental twinning results from alterations of the embryonic development of a non definitely clarified etiology.¹ Gemination is a developmental anomaly of form, which is recognized as an attempt by a single tooth germ to divide resulting in a large single tooth with bifid crown and usually common root and root canal.² It is characterized by a normal teeth number. Fusion is described as the union of two or more tooth buds. It is characterized by a reduced number of teeth. The differential diagnosis between Gemination and fusion of a normal and a supernumerary tooth is difficult.

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Case Report

Since the course of Odontogenesis cannot be witnessed, according to some authors in such cases, Fusion and Gemination seem to be rather equivalent¹. A diagnostic consideration, but not a set rule, is that supernumerary teeth are often slightly aberrant and present a cone-shaped clinical appearance. Thus, fusion between a supernumerary normal tooth will generally show differences in the two halves of the joined crown. However, in gemination cases the two halves of the joined crown are commonly mirror images.³ In gemination, teeth have an increased mesiodistal dimension, and may have a buccolingual gingival groove that extends to incisal edge but the number of teeth is normal. In fusion when the bifid crown is regarded as one tooth, The adjacent tooth appears to be congenitally missing. Geminated teeth are usually found in maxilla but fused teeth are more frequent in mandible.⁴ Gemination is most often seen in the maxillary primary incisors and canines. The incidence of conjoined teeth is more frequent in Primary dentition but there seems to be no gender differences. Although its prevalence is variable in different populations, it generally ranges from 0.1 to 1%. The etiology of geminated teeth remains unknown. Both the genetic and environmental factors are believed to play a major role in the process of germination.² In the anterior region, this anomaly can cause unpleasant esthetic appearance due to irregular morphology. If a deep groove is present, these teeth may be susceptible to caries and periodontal disease and may require endodontic intervention in some cases which may be complicated.^{5,6,7,8.}

This case report describes the comprehensive management of unilateral conjoined primary incisors from an endodontic, cosmetic and periodontic perspective.

Case Report:

A 4 year old boy reported to the Dept of Pedodontics, K.L.E.S VK Institute of Dental Sciences and Hospital. His parent's chief complaint was carious teeth in the child's dentition. Patient's medical history was unremarkable. No other member of the family was affected with similar dental anomalies. Clinical examination revealed that the patient was in mixed dentition phase. Maxillary arch showed a large but deeply carious upper left central incisor[figure 1]. On radiographic evaluation the tooth showed two separate crown structures, fused at the dentin with two separate root canals and the presence of a single root[figure 2]. Other findings in the dentition revealed that this patient was a case of Early Childhood Caries. The number of teeth in the maxillary arch was eleven. Treatment plan for this patient included thorough oral prophylaxis. Restoration of all the cariously involved teeth. Pulpectomy with maxillary left central incisor[Figure3] followed by composite restoration for esthetic purpose[figure4]. Patient is kept on follow up of every 3 months.

Discussion:

The literature available on the occurrence of double teeth is extensive, there is still much discussion concerning the nomenclature.



Figure1: Conjoined tooth with 61

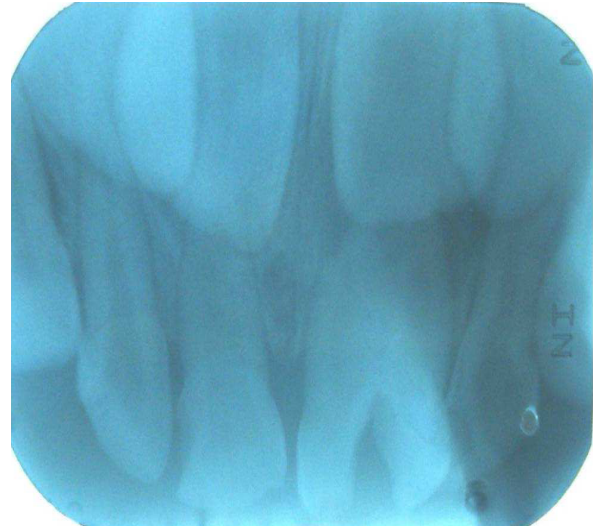


Figure2:Radiograph showing conjoined 61.



Figure3:Obturation done with 61.



Figure 4:Esthetic rehabilitation of 61.

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 terminology⁵. In this article we have used the terminology “conjoined teeth” as in conjoined twins-or the Siamese twins. Clinically and radiographically, gemination can be distinguished from fusion for presenting a single root and pulp canal, with a mirror image due to coronal groove. Tannebaum and Alling described the phenomena of gemination and twinning diagrammatically.^{2,9,10} According to Madder the “Two Tooth” rule may be helpful in differentiating fusion and gemination. As such if the fused teeth are counted as two teeth and the number of teeth are in the dental arch are present, then the case is considered as an example of fusion. However when the abnormal dental structure is counted as two teeth and an extra tooth is present in the dental arch, then the case may represent an example of gemination or a case of fusion between a normal and a supernumerary teeth.^{4,11} Since the course of odontogenesis cannot be witnessed, according to some authors in such cases, fusion and gemination seem to be rather equivalent¹. Hence in the present case we preferred to use the term “conjoined teeth” or “joined teeth”. Conjoined teeth may cause clinical problems such as esthetics, caries, periodontitis, spacing.^{4,11} In the present case the child had proximal

decay in between the two conjoined teeth causing abscess formation. The teeth had two different canals but single root. Since the tooth was firm in the oral cavity and the tooth was not undergoing resorption, endodontic treatment was carried out and composite restorations were done to replicate two teeth for functional as well as esthetic management. This also lead to space management and prevented future space loss. The anomalies of permanent dentition are strongly associated with anomalies in the primary Dentition. Therefore, early diagnosis of the anomaly has a considerable importance and it should be followed by careful clinical and radiographic observations that will allow surgical intervention at appropriate time^{12,13,14,15}. Considering the fact that germination or fusion in the primary dentition may result in missing teeth of the permanent, the patient is placed on a close follow-up to identify any abnormalities in the permanent dentition.

Conclusion:

In this case considering the age of the patient and the status of the tooth, endodontic and restorative treatment was considered a superior option to extraction. Since the conjoined teeth are more frequently present in the primary dentition, radical approach such as extraction is carried out which may result in future space problem as well as delayed eruption of the permanent dentition. Hence preservation of these teeth is a better treatment option as

long as they are not interfering in the normal occlusion.

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