



GLOBAL JOURNAL OF MEDICAL RESEARCH
DENTISTRY AND OTOLARYNGOLOGY

Volume 13 Issue 2 Version 1.0 Year 2013

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-4618 & Print ISSN : 0975-5888

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GJMR-J Classification : NLMC Code: WU 150



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Fusion and Gemination in A Primary Mandibular Anterior Teeth

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Abstract- Tooth fusion is one of the rare anomalies of the shape of the tooth. It is due to the union of two separate tooth germs. Tooth fusion and gemination in mandibular primary teeth has very little documentation in Indian population. These conditions requires a minimal intervention approach, preventive procedures, and a long-term follow-up. Here we report a rare case of fusion between left mandibular primary central and lateral incisors and gemination in right primary mandibular lateral incisor in a four year old boy.

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I. INTRODUCTION

One of the most unusual anomalies of shape of the tooth is fusion. It is union of two separated tooth germs. It always confused with gemination, which is an attempt of division of a single tooth germ. ^[1] Clinically it appears as a two separate crowns joining together or a crown of double the size of normal. The presence of deep fissure in fused teeth predisposes them to dental caries and makes them unaesthetic. Radiographically, there are two separate pulp chambers and root canals to a common pulp chamber and root canal system. Different treatment modalities can be implied according to the requirements of the situation. ^[2] Here we describe an unusual case of fusion between left mandibular primary central and lateral incisors and gemination in right primary mandibular lateral incisor in a four year old boy.

a) Case Report

A medically fit 4 year old boy reported to our dental clinic with chief complaints of decay in the upper right and left posterior teeth. There was no family history of dental anomalies and no consanguinity was reported in the parents. General and extraoral examinations appeared non contributory.

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Intraoral examination revealed that mandibular left side deciduous central lateral incisors were fused together and gemination in mandibular right lateral incisor. There was a deep groove on the labial and lingual surface with incisal notching. The periapical radiograph exhibited that the crowns and the roots were fused with complete union of their pulp chambers and root canals in mandibular left central and lateral incisors and right lateral incisor. (Figure 1)

II. DISCUSSION

The terms Joined tooth, Double tooth, Twinning, is used to describe connate tooth and includes both teeth fusion and gemination. ^[3] Tooth fusion normally due to the union of two separated tooth germs. Depending on the time of union and stages of tooth development it may be complete or incomplete tooth fusion. Sometimes fusion can also be seen between normal tooth and supernumerary tooth germ. ^[4]

In 1979 'Two tooth' rule is introduced to use the term fusion and gemination. If the fused tooth are considered as one and the number of teeth in the dental arch is less than the term fusion is considered. If the number of teeth in the dental arch is normal then it is termed as gemination or it is a case of fusion between normal and supernumerary tooth. But supernumerary tooth has conical in shape so it shows difference in the two halves of the joined crowns. ^[3]

Very few cases of bilateral fusion in mandibular primary dentition have been reported from the Indian population in literature. However in Caucasians it is 0.02% and in Japanese population 0.32%. It causes mainly spacing, malocclusion, esthetic and periodontal problems. ^[5,3,6] Reports of tooth fusion is more in primary dentition (0.5%) when compared to permanent dentition (0.1%). But bilateral tooth fusion in mandibular primary dentition is very rare (0.02%). ^[7]

The pathogenesis of the tooth fusion is not clear, however trauma, hereditary, environmental factors are considered. There is strong evidence of genetic control of fused teeth as evidenced in family. ^[8] The deep groove which present on the surface of the fused tooth is the area where bacterial plaque accumulation takes place and which leads to dental caries and periodontal disease. ^[3] The diagnosis of tooth fusion is mainly depends on history, clinical finding and radiographic findings. ^[9] Management of twin teeth requires regular and long term follow-ups.

III. CONCLUSION

In fusion and germination, deep groove present on the crown may predispose the teeth to develop dental caries or periodontal problems. The treatment of choice depends upon the patients periodontal, esthetic and functional requirements. Usually a multidisciplinary approach may contribute to the success of the treatment.

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Figure 1 : Intraoral periapical radiograph showing fused mandibular left primary central and lateral incisor, Gemination in right primary lateral incisor with single root and root canals.