

1 Fusion and Gemination in A Primary Mandibular Anterior Teeth

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6 **Abstract**

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

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14 **Index terms**— tooth fusion, double teeth, bilateral fusion, mandibular primary teeth.

15 **1 Introduction**

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

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

29 **2 Discussion**

30 The terms Joined tooth, Double tooth, Twinning, is used to describe connate tooth and includes both teeth fusion
31 and gemination. [3] Tooth fusion normally due to the union of two separated tooth germs. Depending on the
32 time of union and stages of tooth development it may be complete or incomplete tooth fusion. Sometimes fusion
33 can also seen between normal tooth and supernumerary tooth germ. [4] In 1979 'Two tooth' rule is introduced
34 to use the term fusion and germination. If the fused tooth are considered as one and the number of teeth in the
35 dental arch is less then the term fusion is considered. If the number of teeth in the dental arch is normal then it
36 is termed as germination or it is a case of fusion between normal and supernumerary tooth. But supernumerary
37 tooth has conical in shape so it shows difference in the two halves of the joined crowns. [3] Very few cases of
38 bilateral fusion in mandibular primary dentition have been reported from the Indian population in literature.
39 However in Caucasians it is 0.02% and in Japanese population 0.32%. It causes mainly spacing, malocclusion,
40 esthetic and periodontal problems. [5,3,6] Reports of tooth fusion is more in primary dentition (0.5%) when
41 compared to permanent dentition (0.1%). But bilateral tooth fusion in mandibular primary dentition is very
42 rare (0.02%). [7] The pathogenesis of the tooth fusion is not clear, however trauma, hereditary, environmental
43 factors are considered. There is strong evidence of genetic control of fused teeth as evidenced in family. [8]
44 The deep groove which present on the surface of the fused tooth is the area where bacterial plaque accumulation

45 takes place and which leads to dental caries and periodontal disease. [3] The diagnosis of tooth fusion is mainly
46 depends on history, clinical finding and a) Case Report A medically fit 4 year old boy reported to our dental clinic
47 with chief complaints of decay in the upper right and left posterior teeth. There was no family history of dental
48 anomalies and no consanguinity was reported in the parents. General and extraoral examinations appeared non
49 contributory.

50 **3 III.**

51 **4 Conclusion**

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

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Figure 1: Figure 1 :

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