

Gemination of a Mandibular Central Incisor: A Rare Case Report

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Abstract: Concrescence, Fusion, Gemination and twinning are developmental anomalies that modify the shape of the teeth. Gemination refers to the attempt at division of a toothgerm, resulting in formation of single large tooth, with groove or notch in the crown. Except gemination, others arise as a result of union of two toothgerms or tooth. This article is an illustration of case report of Gemination of permanent mandibular Central incisor and literature review.

Keywords: Developmental anomaly, Double Teeth, Gemination.

INTRODUCTION

Tooth Gemination is defined as single enlarged tooth or joined tooth wherein the tooth count is normal when the anomalous tooth is counted as one. It is an attempt of a single tooth bud to divide. A tooth with a bifid crown clinically gives an appearance of double teeth with a common root canal or rarely has separate canals.¹⁻⁴ It is seen in permanent as well as in deciduous dentition. There is an overall prevalence of 0.5% in deciduous dentition, 0.1% in permanent teeth and 0.02% in both dentition. The aetiology of Fusion and Gemination remains unclear. There are several hypotheses. Grover & Lorton claim that local metabolic interferences, which occur during morpho-differentiation of the tooth germ, may be the cause. They suggest that there could be a relationship amongst Gemination, twinning and odontoma; another possibility is trauma.⁵ Unusual crown size may be aesthetically disturbing, especially if anterior teeth are involved. Gemination of permanent teeth may require treatment for aesthetic, orthodontic and functional reasons.⁶

CASE REPORT

A case of seven years old boy reported to the Department of Pedodontics and Preventive Dentistry at Buddha institute of Dental Sciences and Hospital, Patna, India for caries in upper molar teeth (Fig 1). On clinical examination, the permanent left mandibular central incisor (31) was found to be macrodontic, larger than the permanent central incisor of the right side of the same arch, which was normal. A careful examination of the large tooth revealed a straight groove on the labial surface running from the incisal edge to the cervical margin almost dividing the crown into distal one third and mesial two thirds (Fig 2). Prominent bifid cingulum with a central cervico incisal groove was seen on the lingual surface. Deciduous canines (73, 83) were present.



Fig 1



Fig 2

The Intra oral periapical radiograph and Panoramic radiograph were taken. A single large wide pulp chamber and root canal was revealed in the left mandibular central Incisor. Crown of the permanent lateral Incisor (32) was seen in the periapical region of deciduous canine (73) and permanent central Incisor (31) (Fig 3,4). The clinico-radiologic correlation concluded Gemination of 31 as the morphology of other teeth and number of the teeth were normal.



Fig 3



Fig 4

DISCUSSION

Occurrence of Gemination may be syndromic or non-syndromic. The literature review shows incidence of Gemination in primary dentition to be 1-1.6% with no sex predilection. The prevalence of bilateral double teeth in primary dentition is 0.08%.^{7,8} The current literature review showed Gemination in permanent dentition to be upto 0.8% of general population with no sex predilection. Due to this low prevalence the importance of this anomaly tends to be under estimated.

The exact etiology for Gemination is not known. They arise due to some unknown disturbance that occurs in a developing tooth germ as it passes through stages of histo-differentiation and morpho-differentiation.

Gemination of mandibular and maxillary central incisors bilateral presentation was reported by many authors, whereas Gemination of mandibular permanent lateral incisor with uni-lateral presentation was rarely reported. So, our case is a rare clinical presentation. In the present case it was a single large tooth with large pulp chamber and cervico-incisal groove running on the labial surface. With radiographically only one pulp chamber and the anomalous tooth is counted as one unit and the number of teeth in the arch was normal. The problems associated with geminated teeth are esthetics 4-midline shift, malocclusion and crowding. The presence of groove and fissure on labial and lingual surfaces predispose the teeth for caries and periodontal disease.⁹

CONCLUSION

Identification and diagnosing a rare and asymptomatic developmental anomaly like Gemination is essential as they cause problem with alignment, arch symmetry and esthetics. Their morphology predisposes to dental caries and periodontal diseases. Thorough knowledge of the existence and morphology of the Gemination helps the clinician for orthodontic, preventive, conservative, endodontic and prosthodontic treatment planning.

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