

CASE REPORT

UNILATERAL FUSION OF TEETH IN MANDIBULAR ARCH – AN UNUSUAL FINDING.

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ABSTRACT

Fusion of two teeth is rare developmental disorder which is encountered by a clinician. It is commonly reported in deciduous dentition. The fused crown appears broader and usually an esthetic concern. This condition usually reveals a decreased teeth count. Unilateral occurrence of fusion in permanent mandibular anterior teeth is a rare phenomenon. Hence this case report is presented.

KEYWORDS: fusion, gemination, double teeth, mandibular

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INTRODUCTION

A diversion from normal development of teeth is an abnormality and hence medically termed as developmental disorder. Fusion is one such developmental disorder or developmental disturbances of teeth pertaining to its count¹. The clinical scenario is usually appreciated as union of two separate developing teeth. This condition is usually rare but most commonly encountered in the deciduous dentition and usually correlates to the agenesis of permanent teeth². The prevalence of fusion in case of primary dentition ranges 0.1%-1.5%³⁻⁴, while in permanent dentition it ranges 0.18%-0.28%⁵⁻⁶ and gender predilection stands equal.

Diagnosis of such condition is always a challenge among clinicians even though numerous literatures have been published. The look-alike terminologies fusion and gemination of teeth usually builds a lot of error in clinical reporting as they appear similar clinically. Fusion of the teeth can be complete or incomplete depending on the occurrence related to the period and stage of tooth development. It is commonly confused with gemination where a

single tooth germ attempts to divide into two.

CASE REPORT

A medically fit 36 years aged male reported to the out-patient department with the complaint of bleeding gums from the lower arch on brushing and bad breath. There were no contributory family and medical history. The extra-oral findings were too non-significant. On thorough intraoral examination, the patient was having heavy accumulation of calculus and generalized gingival inflammation (Figure 1a). There was an incidental finding of asymmetry in the mandibular arch pertaining to the number of teeth and fusion mandibular central incisor and lateral incisor on right side. There was no obvious deep grooving in between the crowns except for a mild discontinuity on the incisal edge. The incisors were vital, non-carious but periodontally compromised (Figure 1b).

The intraoral periapical radiography reveals partial fusion of 41 and 42 involving only enamel with separated roots. There was also generalized horizontal bone loss in the lower anterior arch. (Figure 1c)

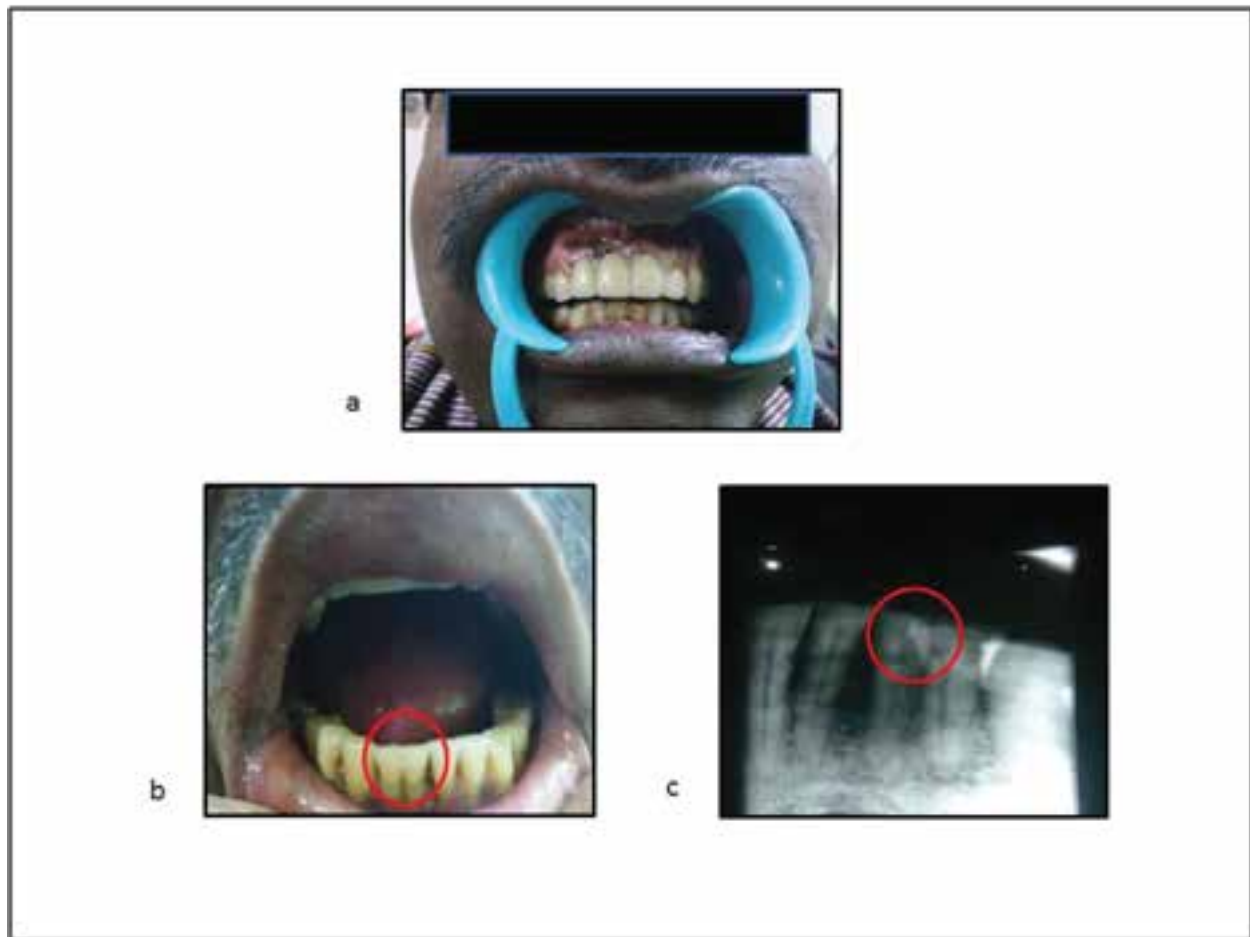


Figure 1: a: clinical image (pre-prophylaxis), b: clinical image of the lower anterior segment (post prophylaxis), c: radiographic image depicting partial fusion of the lower incisors.

DISCUSSION

The terminologies fusion and gemination often need proper clinical details and radiological support to be rendered as diagnosis. The cause of fusion as suggested by various theories points towards contact of tooth germs during the developmental stages due to excessive physical force and/or pressure⁷. The classification and schematic details as put forwarded by Tannebum and Allings have made the concepts of fusion and gemination clear⁸. Partial cleavage of a single tooth is true gemination whereas the complete cleavage leads to twinning. Fusion is the phenomenon of joining of two tooth germs during the formative stage seen either involving enamel (partial) or enamel and dentin (Complete). The fusion of tooth germs involving cementum is known as concrescence. The 'two tooth rule' in 1979 was formulated to resolve errors and to justify fusion and gemination unambiguously^{1, 5}.

The calcification stage or the stage of mineralization in tooth development is an important factor in

determining the type of fusion; if the fusion occurs before this stage, then it usually leads to complete fusion and it reveals a missing tooth. The abnormal tooth is usually incorporated with all the features of enamel, dentin, pulp and cementum of the participating teeth. The fusion which occurs late, after mineralization presents with separate crowns but single complete or incomplete root canal⁹⁻¹³.

The cases of these developmental disturbances must be dealt in a multidisciplinary mode from diagnosis to treatment planning to restore form and function. The grooves present at the site of fusion is prone to dental caries, maintenance of hygiene is often troublesome due to food impaction and plaque accumulation¹⁴. Esthetics is also a common issue to the patients as the crown size appears larger which must be rehabilitated with multidisciplinary approach. In case of deciduous dentition fusion of teeth has related consideration with root resorption as different teeth has different shedding schedules.

Numerous cases of fusion have been reported in

primary dentition mostly in lower anterior region. There have been reports of fusion of premolar and molars and disto-molars with third molars. Talons cusp along with fusion of mandibular incisors in permanent dentition is also encountered in world medical literature, which signifies the variability in the morphological patterns of disturbances¹⁵. Fusion of normal teeth along with supernumerary is also reported, this condition can also be reported in carious syndrome like cleft palate and cleft lip, cleidocranial dysostosis, chondroectodermal dysplasia etc.¹⁶⁻¹⁸

The newer radiological techniques like cone beam CT scan aids in better evaluation of such cases, hence can lead to better management and ensure better treatment outcome¹⁹. Fusion is also found in numerous other dental problems like poor esthetics, crowding, dental caries, periodontal disease, periapical pathologies, etc.

CONCLUSION

The identification of the condition becomes a formidable task to the clinician. Earlier diagnoses are required thorough clinical as well as radiographic reports to rule out such disorders so as treatment can be rendered through careful monitoring and periodic follow-ups.

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