

Bilateral Fusion Of Primary Mandibular Teeth - A Case Report

Abstract

Fusion is a developmental anomaly characterized by the union of two normally separated tooth buds resulting in the formation of a large tooth with confluence of dentin. The fused crown is broader than the adjacent non - fused teeth and thus resembles gemination. This tooth can be identified by counting the number of teeth in the dentition. Fusion occurs in both primary and permanent dentition with higher frequency in the anterior and maxillary region. Although the rate is variable in individual reports, the overall prevalence appears to be approximately 0.5% in primary dentition. The bilateral cases are less frequent with a prevalence rate of 0.02% in both dentitions. Here, we report a classic case of bilateral fusion of primary mandibular incisor in a 3 year old female patient who required a dental attention.

Key Words

Bilateral Fusion; Gemination ;Dental organs

Introduction

Anomalies of the primary dentition can occur in the morphology as well as in the number of teeth. A enlarged clinical crown with a buccolingual defect can either be a geminated or a fused tooth. Fusion of teeth is the embryological union of two dental organs during development while gemination is the creation of two separate morphologic units by the division of the tooth germ. Clinically, crown appearance depends upon the stage at which the process occurs. A normal sized or slightly bigger crown results when fusion occurs in the early development stages while large tooth with or with out bifid crown results when union occurs at later stage^{[1],[2],[3]}. Radio graphically fused teeth may have separate, partly fused or fully fused root canals. The etiology of fusion is still poorly known , but the influence of pressure or physical forces producing close contact between two developing teeth has been reported as one possible cause, genetic predisposition and racial differences have also been reported as contributing factors^[1].

Root resorption and shedding of fused primary teeth may be retarded followed by an impaired eruption sequence of the permanent successor^[4]. In anterior region ,this anomaly not only developed an unpleasant esthetic tooth but increases the chances of caries and periodontal

disease. Aplasia or malformation of permanent successor may occur. This paper represents the benefit of early detection with monitoring the progression of eruption of permanent teeth by routinely careful clinical and radiographic follow up.

Case Report

A 3 year old female child was referred to the Department of Pediatric Dentistry with a chief complaint of severe thumb sucking habit .Clinical examination



Figure 1- Primary Dentition Showing Anterior Open Bite, Fractured Right Central Incisor With Fused Mandibular Incisors

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showed a primary dentition with a fractured right central incisor , an anterior open bite and absence of caries and periodontal involvement (**Figure - 1**). In the mandibular arch an asymmetry was recorded in the number of tooth,as teeth present were less than normal. Two teeth (71 and 81) were found larger (**Figure-2**) with distinct developmental occluso-gingival grooves on the labial and lingual surfaces .Two teeth (72 and 82) were absent. The remaining maxillary and mandibular primary teeth were normal in shape and number. Radiographic examination revealed the enlarged bifid



Figure 2-primary Dentition Showing Missing Lateral Incisors On Both Sides



Figure 3- Radiograph Showing Fusion Of Primary Central Incisor And Lateral Incisor Having One Root And One Pulp Canal

crown due to the fusion of primary central incisor and lateral incisor having one root and one pulp canal on both sides of the mandible (**Figure-3**) which is an uncommon dental anomaly. The permanent central and lateral incisors were evident in the bone on both sides. There were no history of pain or discomfort and incisors were caries free. Family history was not found to be contributory. Treatment plan was explained to the parents whom they accepted. Composite build up was done for fractured central incisor and psychological management was done for thumb sucking habit. Parents were asked to be kept on follow up to review the status of erupting permanent incisors as fused teeth influence the path of eruption of the permanent teeth.

Discussion

The terms dental fusion and gemination define two different morphological dental anomalies characterized by the formation of a clinically wide tooth. Despite the several cases reported in the literature the differential diagnosis between these abnormalities is usually difficult to evaluate. Some authors use these terms as synonyms^{[5],[6]} while other differentiate by counting the teeth and by the shape of the root Proper case history, clinical and radiographic examination

however can provide vital information required for the diagnosis of such abnormalities.

Though proper etiology of fusion is still to be understood yet, the influence of pressure or physical forces producing close contact between two developing teeth has been reported as a possible cause^[1]. Other causes can be genetic predisposition, trauma, systemic diseases. In case of complete fusion, the tooth germs unite before the calcification begins and results in a fused tooth with only one root canal^[7] as in our patient .Fused teeth are usually asymptomatic except occasional alteration of tooth alignment or occlusion.

Fusion involving a primary tooth may not necessarily foretell fusion of corresponding permanent tooth^[8]. As radiographic evidence in the present case shows that both permanent central incisor and lateral incisors on both side are not fused.

Teeth with such an abnormality are unaesthetic due to irregular morphology, high predisposition to dental caries and arch-length problems. Fusion teeth usually have a vertical groove on front and the back of the teeth which may be difficult to clean leading to dental stains ,plaque accumulation and caries. This problem can be corrected by placing a sealant or composite material into the groove to decrease the risk of caries. These teeth in primary dentition can result in crowding, abnormal spacing and delayed or ectopic eruption of the underlying permanent teeth. When detected, the progression of eruption of the permanent teeth should be monitored

closely by careful clinical and radiographic observation. Whenever necessary, extraction may be done to prevent the abnormality in eruption.

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