

Fusion of a Supernumerary Tooth with Primary Central Incisor

Sonu Acharya, Sheetal Acharya¹, Mamta Mohanty²

Departments of Pedodontics and Preventive Dentistry and ¹Periodontics and Implantology, Institute of Dental Sciences, ²Department of Pediatrics, IMS and SUM Hospitals, SOA (Deemed to be University), Bhubaneswar, Odisha, India

Abstract

Fusion is a relatively rare developmental anomaly of the shape of the tooth characterized by union of two adjacent teeth. This can be seen in both deciduous and permanent dentition. Depending on the stage of development of teeth at the time of union, fusion may be either complete or incomplete. The prevalence of tooth fusion in the primary dentition is 0.5%–2.5% and 0.1% in permanent dentition. The exact etiology is not known, but it is thought that some physical forces or pressures cause the contact of developing teeth. The fused teeth can lead to various problems. Here, we discuss a case of a fusion in primary central incisor with supernumerary tooth in a 7-year-old male child.

Keywords: Central incisor, fusion, primary, supernumerary

INTRODUCTION

Developmental anomaly in number, size, and shape may be due to abnormalities during the morphodifferentiation stage of the dental lamina and the tooth germ.^[1] Fused teeth arise through the union of two normally separated tooth germs. Depending on the stage of development of teeth at the time of union, fusion may be either complete or incomplete. It has been thought that some physical force or pressure produces contact of developing teeth and their subsequent fusion. If this contact occurs early, i.e., before calcification begins, the two teeth may be united to form a single large tooth. If the contact occurs later when a portion of the tooth crown has completed its formation, then the two teeth will have fusion at their roots only. The dentin is, however, always confluent. The tooth may have fused or separate root canals.^[2] Teeth fusion also termed as synodontia, presents as one of the most unusual and rarest anomaly of shape of the tooth. The literature shows controversial concept to correctly differentiate between fusion and gemination.^[3] The uncertainty is more when there is fusion between a normal tooth and a supernumerary tooth. Fusion arises through the union of two normally separated tooth germs, whereas gemination is an attempt by the tooth bud to divide, and this partial division is halted before the development is completed. In primary dentition, the incidence of fusion is

said to be 0.3%–0.8%, whereas in permanent dentition, it is 1.5%–3.5%.^[4] Fused teeth are more common in primary than in permanent dentition (0.6% of primary dentition and 0.1% of permanent dentition in Caucasians.^[5] The prevalence of fused teeth is common in some races (Mongoloid) than Caucasians.^[6] It is more frequent in the maxilla than in the mandible.^[7] Although cases have been reported in the posterior region, incisors and canines are more susceptible.^[8] A supernumerary tooth is one that is additional to the normal series and can be found in almost any region of the dental arch.^[4] The conditions commonly associated with an increased prevalence of supernumerary teeth include cleft lip and palate, cleidocranial dysplasia, and Gardner syndrome.^[9] Clinically, fused teeth present a notch on the incisal edge that goes buccolingually.^[10] Here, we discuss a case presenting with fusion of primary central incisor with a supernumerary tooth in maxilla in a 6-year-old male child.

CASE REPORT

A 7-year-old male child visited the outpatient department of the pediatric dentistry with the complaint of loose lower front tooth. On examination, we found that the lower central incisor

Address for correspondence: Prof. Sonu Acharya, Department of Pedodontics and Preventive Dentistry, Institute of Dental Sciences, SOA (Deemed to be) University, Bhubaneswar, Odisha, India. E-mail: sonu_ain@yahoo.com

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was nearing exfoliation and needed extraction. On complete examination of the oral cavity, we could see the maxillary incisor tooth on the right side (51) fused with a supernumerary tooth [Figure 1]. The usual number of teeth being present, we decided that the fusion is between a supernumerary and primary central incisor. The intraoral periapical radiograph also confirmed the presence of fusion between supernumerary and central incisor [Figure 2]. The extraction of mobile lower central incisor was performed under local anesthesia after informed consent from parents. Oral prophylaxis was performed, but the parents were unwilling for any treatment for the fused teeth despite being told about the problems the teeth can cause in the future.

DISCUSSION

Fusion of teeth is a developmental anomaly, which stem from the union of two teeth originating both in primary and the permanent dentition.^[11] Fused teeth have distinct clinical symptoms and are more prevalent in primary dentition (0.5%) than in permanent dentition (0.1%).^[12] The occurrence of fusion in permanent posterior teeth is rare.^[13] Fusion usually involves the incisors and canines.^[14] Fused teeth normally appear quite unaesthetic owing to their unusual and irregular tooth morphology. These abnormal teeth have a high affinity to dental caries, periodontal problems, and spacing between teeth can also be an issue that needs to be addressed in such cases.^[15] Fusion is usually the cause of reduced number of teeth in the dentition, and this important fact helps to differentiate it from germination, but in our case, the fusion was with a supernumerary tooth, so normal number of teeth were present. Supernumerary teeth in primary dentition are often underreported.^[16] The supernumerary teeth in primary dentition can cause lots of complications such as prevention and delay in eruption of associated permanent teeth, displacement or rotation of permanent teeth, crowding, incomplete space closure during orthodontic treatment, dilaceration, delayed root development of adjacent teeth, and formation of cysts. The patient should be warned of complications, such as cystic change and migration with damage to nearby roots. If the patient does not wish to risk such complications, it is

acceptable to remove supernumerary teeth. If supernumerary teeth are associated with complications, it is usual to extract such teeth, which usually involves a surgical procedure. Spacings which are usually seen in primary dentition may allow the supernumerary teeth to erupt in normal alignment without the parents being aware of it. Sometimes, the primary tooth may be fused to supernumerary giving rise to diagnostic dilemma. The etiology of fusion is still not known. Shafer *et al.* have stated that some physical pressure may lead to fusion.^[2] The presence of supernumerary tooth in primary dentition or permanent can cause the deflection of permanent tooth, the degree of which may vary from slight to complete displacement.^[17] They can also lead to delayed eruption of permanent teeth. Varied approaches have been tried to treat these fused teeth, but it depends on the individual presentation of the problem.^[15] Extraction of supernumerary teeth is usually advised in cases where they are causing any pathological conditions or can lead to crowding along with esthetic problem and difficulty in oral hygiene maintenance. The best method of detecting these teeth is by clinical and radiographic examination. An anterior occlusal radiograph is useful in locating a mesiodens. The management depends on the type and position of such teeth and their effects on adjacent teeth.^[18] The management options can be: (1) Only observation – if the permanent incisor cannot be brought into an acceptable position and if there is no associated pathology or resorption of adjacent teeth, it may simply be kept under observation and (2) removal of the obstruction being caused by supernumerary teeth with the extraction of the tooth. Removal of the supernumerary is also advised if a cyst or pathology develops in relation to the supernumerary.^[19]

CONCLUSION

The identification of supernumerary tooth in any dentition is important. The tooth if fused to a normal tooth may cause some problem. Hence, the early identification and monitoring are essential for this finding which is rare in deciduous dentition.



Figure 1: Clinical picture.



Figure 2: Intraoral periapical radiograph.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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