Synodontia of deciduous maxillary central and lateral incisors with a supernumerary tooth

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Synodontia is the union of two or more teeth. This anomaly may occur between two or more normal teeth or between the normal tooth and a supernumerary tooth. The presence of synodontia in the primary dentition is associated with a high degree of anomalies of the permanent dentition. The present case describes the synodontia between the deciduous left central and lateral incisor with a supernumerary tooth. Intra oral periapical radiograph of the fused teeth revealed incomplete fusion of the crowns of the supernumerary tooth with that of the central and lateral incisors, with separate pulp chambers and canals. The permanent maxillary left lateral incisor was found to be missing in the OPG view. Positive family history of patient's father having similar fused teeth was obtained. Treatment included restoration of caries and sealing the grooves with pit and fissure sealant, as these fused teeth did not disturb the erupting permanent central incisor.

Key words: Synodontia, Supernumerary deciduous tooth, Missing teeth.

Synodontia (S.O) is the union of two or more teeth. Other terms used to describe such conditions are fused teeth, double teeth, joined teeth, etc. S.O is an infrequently occurring developmental anomaly with prevalence rate of about 0.5-16%14. This condition is commonly seen in the lower anterior teeth in the incisor, canine region4-7. Isolated cases involving molars or its association with Orofacial syndrome are also reported8.

The etiology of synodontia is not exactly known, but is believed that some physical forces or pressures cause the contact of developing teeth9. Other explanations used to describe the cause include, excess administration of vitamin A to animals, viral infection during pregnancy and use of thalidomide by pregnant women10,11. Spouge12 stated that this union is purely coincidental and other investigators have also confirmed heredity as a contributing factor8,9,13-14. This union may occur completely or incompletely depending upon the developmental stage of teeth. If it occurs before the calcification stage, the teeth unite completely and form one large tooth. The incomplete fusion may be at the root level if the contact and union of the teeth occurs after the formation of crowns9,15-17. Complete fusion may be characterized by only one pulp camber and one root canal one camber but two individual root canal or two pulp chambers and two root canals13,14,15. Yeun et al18 believed that this abnormality is dependent on the time and extent of the insult during odontogenesis. This anomaly may occur between two or more normal teeth or between the normal tooth and a supernumerary tooth19.

The presence of double tooth is the primary dentition is associated with a high degree of anomalies of the permanent dentition20. Winter and Brook21 reported that the overall frequency of the permanent anomalies following primary double tooth is 30-50% in Caucasian and 75% in Japanese. The most common effect reported is hypodontia of the permanent successor and had been reported by several researchers1,19,24. Other abnormalities found are conical or peg shaped permanent tooth, delayed eruption of permanent tooth, or presence of supernumerary tooth13,18,20,25,27.

Supernumerary tooth is seen infrequently in the primary dentition with the prevalence rate of 0.2-0.8% and is usually of the supplemental type21. Supernumerary tooth develops as a consequence of the proliferation of epithelial cells from dental lamina15.

Hypodontia of the permanent dentition has been reported following primary supernumerary tooth4 but majority of the cases experience presence of supernumerary permanent successor1,4,21.

Common problems associated with fused teeth are delayed
extoliation and caries formation in the groove dividing the bitid crown. The treatment described for primary double teeth have included reshaping the crown, sealing the grooves and caries restoration of caries using composite resin or even extraction.

The present case describes the synodontia between the deciduous left central and lateral incisor with a supernumerary tooth.

CASE REPORT

A 6-year-old female patient visited the department of Pedodontics and Preventive Dentistry, College of Dental Surgery, Mangalore with the complaint of food impaction in the upper anterior region. She did not report any systemic problems in her medical history.

Intra-oral examination revealed mixed dentition with the lower permanent molars and lower right permanent central incisor just erupting. In the maxillary anterior region on the left side was a supernumerary tooth fused to both the deciduous central and lateral incisors (Fig. 1). Both the central and lateral incisors were of normal size as compared to theirs counterparts. The supernumerary tooth was conical. The fused teeth were carious on the palatal
aspect (Fig. 2). There were deep grooves in between the fuse teeth. Remaining teeth were absolutely healthy. A midline diastema both in the maxillary and mandibular arch was noticed.

Parental history revealed that the father of the patient had similar teeth, but he was not available for examination.

Intra-oral periapical radiograph of the fused teeth revealed incomplete fusion of the crowns of the supernumerary tooth with that of the central and lateral incisors, with separate pulp chambers and canals (Fig. 3). Since the area of vision was restricted, an orthopantomogram was advised. It revealed a missing left permanent maxillary lateral incisor (Fig. 4). All the other permanent teeth were present in their varying stages of development. The roots of the fused teeth were resorbing uniformly without preventing the eruption of the central incisors. Therefore was decided to treat the caries and seal the deep grooves in between the fused crown with pit and fissure sealants.

DISCUSSION

The fusion may be complete or incomplete depending on the developmental stage of the teeth involved. In the present case, there was an incomplete fusion between the supernumerary tooth, the central and lateral incisor teeth with separate pulp chamber and canals, indicating the fusion occurred after the calcification stage of tooth development.

Presence of fusion in the deciduous dentition is associated with high degree of anomalies in the permanent dentition is associated with high degree of anomalies in the permanent dentition20, commonly reported is hypodontia of the permanent dentition. Supernumerary teeth in the deciduous dentition are associated with supernumerary teeth in the permanent dentition. In the present case, although both fusion and supernumerary teeth were observed the effect of fusion on the permanent dentition was seen. Permanent lateral incisor on the left side was missing. Heredity also contributes strongly to the occurrence of fusion, as also observed. The history of patient's father having similar tooth was obtained. Fusion is common in male patient and seen in the mandibular later incisor and canine region4. But the case described, was a female patient and the fusion was between the maxillary central and lateral incisor with the supernumerary tooth.

Fused teeth are usually asymptomatic, but are associated with problems like delayed exfoliation and caries formation in the grooves dividing the crown25-26. Numerous treatment options have been offered in the literature to solve the clinical problem associated with fused teeth29-30,31-33. Since there was a uniform root resorption, not interfering with the path of eruption of the permanent successor, the treatment was limited to restoration of caries and sealing the grooves.

Importance of anomalies in the deciduous dentition are usually 'underestimated' especially when they are asymptomatic. But their occurrence may have marked effect on the permanent dentition.

REFERENCES


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