

Caution! We Are Erupting As Twins

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ABSTRACT

The phenomenon of tooth fusion arises through union of two normally separated tooth germs, and depending upon the stage of development of the teeth at the time of union, it may be either complete or incomplete. On some occasions, two independent pulp chambers and root canals can be seen. Fusion occurs infrequently but could cause esthetic, spacing and a periodontal

problem. The purpose of this article was to present a clinical case where fusion is present. The present article highlights the presence of a primary double tooth and also the fusion of permanent successors in the maxillary anterior region. These cases necessitate careful examination and treatment planning as they may be associated with anomalies in the succeeding permanent dentition.

Key Words: Fusion, Dental anomalies, Primary teeth, Permanent teeth

INTRODUCTION

The anomaly of co-joined teeth has been described in several different terms, such as Fusion, Gemination double teeth and Twinning. Fusion arises through the union of two normally separated tooth germs resulting in bifid crown and two root canals where as Gemination arises from an attempt at division of single tooth germ resulting in bifid crown with a single root or root canal [1, 2]. Though it seems to be confusing clinically, a differential diagnosis can be made radiographically.

The etiology of double teeth may be attributed to evolution, trauma, heredity and environmental factors. Tooth germs in the same developmental stage and located close to each other are also postulated to have a high occurrence of adjacent anterior double teeth. Some researchers proposed that this alteration occurs as a result of physical forces that bring the developing teeth in contact, by causing necrosis of the epithelial tissue which usually separates them and finally leading to fusion. Others believed that fusion results from embryological persistence of the inter-dental lamina between 2 germs [3, 4].

Fused primary teeth occur more frequently in the mandibular incisors region than the maxilla. Incidence of this anomaly is approximately 0.1% in the permanent and 0.5% in the primary teeth. The present article describes a clinical case of double tooth, which causes delayed eruption of permanent successors which again resembles a double tooth.

CASE REPORT

An 8½ year old boy reported with the complaint of missing front teeth. Intra oral examination revealed developmental disorders in maxillary teeth. A tooth with enlarged clinical crown was observed in the area of maxillary left incisors region and erupting maxillary right incisor was also observed.

Parental history was negative to familial tendency to fused teeth. The intra oral periapical radiograph of maxillary left anterior region shows the following characteristics:

- Primary left central incisor and lateral incisors were fused.



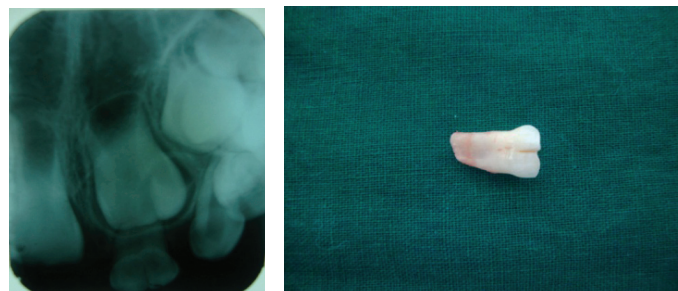
[Table/Fig-1]: Dental fusion of maxillary left central and lateral incisors

Intra oral examination revealed the presence of following teeth

16	55	54	53	52	×	61	62	63	64	65	26
46	85	84	83	82	41	31	72	73	74	75	36

- Two separate pulp chambers and root canals were present.
- The roots of fused primary teeth had not resorbed.
- Surprisingly, the permanent central incisors also fused with the lateral incisors.

The patient and the parent were informed about the delayed eruption of permanent central incisor. Extraction of fused teeth was carried out and periodic review was advised.



[Table/Fig-2]: IOPA view showing fused primary left central and lateral incisors and also showing the fusion of permanent successors

[Table/Fig-3]: Extracted fused teeth

DISCUSSION

An interesting case of fusion between the maxillary primary central incisors and primary lateral incisors accompanied by fused permanent successors was presented in this case.

Prevalence of tooth fusion was estimated at 0.5% to 2.5% in the primary dentition, whereas prevalence in the permanent dentition seemed to be clearly lower than in the primary dentition [5]. However, primary teeth anomalies can affect the permanent successors significantly which has been clearly demonstrated in this particular case. The presence of primary double tooth could also cause delayed resorption of root due to great root mass and increase area of root surface relative to the size of the permanent successor crown. This may lead to delayed or ectopic eruption of the permanent successor.

When fusion occurs, the clinician must be aware of following major dental concerns. First, since fused teeth are clearly wider than the surrounding teeth, esthetics may be a concern. In the present case, the esthetic view was not a problem in the primary dentition and the family was uninformed on the fusion teeth until the patient visited dental office.

Second, when normal teeth fuse, excess dental space can result which is not an issue in this case. Third concern relates to both esthetic and occlusion because of unerupted permanent maxillary anterior. This was the major concern for this particular patient. The fusion case reported have involved maxillary left primary maxillary central and lateral incisors, with complete union of the crown and two pulp canals and chamber. When fusion occurs in the primary dentition sometimes it may cause delayed eruption of permanent teeth. In this case the left permanent central incisor was not erupted due to this reason.

The final concern involves their surface contour fused teeth commonly exhibit labial and lingual grooves running vertically on the crown surface. These grooves are very pronounced in cases of incomplete fusion and are difficult to clean and considered to be caries prone zone [6]. In present case there was a complete fusion. Although grooves were present on the teeth surface no caries was detected at the time of examination.

Thus, as per the patients concern of unerupted permanent maxillary anterior teeth, primary tooth is extracted and replaced by crowns after eruption of the permanent teeth. Periodic clinical follow-up was also advised to prevent caries, to check the erupting status of permanent teeth and to allow early intervention whenever pulp alterations and fractures occur.

Treatment of a fused tooth will depend on the clinical situation. Studies have shown that anomalies of primary dentition tend

to repeat themselves in the permanent dentition [7]. General preventive advice should be given to parent and the child, if it causes delayed eruption, it should be extracted and caries already exists, a restoration should be performed [8]. Advanced treatment like sectioning and restoration, reconstruction with metalloplastic crown, amputation of one root, etc., greatly depends on location and extent of fusion.

Gellin also reported that proportion of permanent successor anomalies up to 50% following primary double tooth, including congenitally missing supernumerary and repeated double teeth formation [9]. There fore, early diagnosis of the anomaly is considerable importance.

CONCLUSION

Dental fusion and germination are asymptomatic but both can result in a number of difficulties including tooth reduction in the permanent successors increased susceptibility to sub gingival bacterial plaque, aplasia or malformation of the permanent successors and impaction. The potential clinical problems associated with fusion require Orthodontic, Prosthetic, Cosmetic and Periodontal interventions also. Thus, to establish a right treatment to this anomaly, the early proper examination and knowledge to recognize this anomaly is a prerequisite.

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