INTRODUCTION

Teeth are complex anatomic structures that encounter with developmental anomaly in various aspects like defects in the structure, shape, size and number. Fusion is a rare developmental anomaly with a complex morphology that can give rise to reduced esthetics, misalignment, dental caries and periodontal problems. The etiology of fusion is unknown. It could be hereditary or caused by physical forces acting on developing tooth germs. They are usually unilateral that occur in both primary and permanent dentition. The purpose of this article is to report a rare case of bilateral fusion of mandibular second premolar with supernumerary tooth.

CASE REPORT

A 25-year-old male patient reported to the Chettinad Dental College Hospital with complaint of pain on the left lower posterior tooth (35) which was decayed and had bizarre morphology similar to its counterpart on the right side (45). Both the teeth were larger on all aspects than the adjacent normal first premolar and had a pronounced buccal groove [Figures 1 and 2]. Radiographic examination of 35 revealed pulpal involvement associated with a complex coronal and radicular pulpal anatomy. The orthopantomograph showed no evidence of missing tooth in the mandibular arch but presented bilateral impaction of third molars [Figure 3]. The patient was advised to undergo endodontic treatment of 35.

DISCUSSION

Fusion is a developmental dental anomaly caused by the union of two normally separated tooth germs resulting in the formation of a single large tooth. The prevalence of this anomaly is less than 1% and most common in the primary dentition, in the incisor-canine region. Fusions are almost always unilateral, but few cases of bilateral fusions have been reported. The purpose of this article is to report a rare case of bilateral fusion of mandibular second premolar with supernumerary tooth.

Key words: Bifid crown, fusion, gemination, supernumerary teeth

Bilateral fusion of mandibular second premolar and supernumerary tooth: A rare case report

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ABSTRACT

Fusion is the union of two normally separated tooth germs resulting in the formation of a single large tooth. The prevalence of this anomaly is less than 1% and most common in the primary dentition, in the incisor-canine region. Fusions are almost always unilateral, but few cases of bilateral fusions have been reported. The purpose of this article is to report a rare case of bilateral fusion of mandibular second premolar with supernumerary tooth.

Key words: Bifid crown, fusion, gemination, supernumerary teeth

Invariable of the type of dentition, majority of them are associated with the incisors and canine than the posterior arch.[1] Fusion of posteriors is infrequent in secondary teeth with a prevalence range from 0.08% to 0.5%.[2-3] In general, fusion is commonly seen in the maxillary arch and rarely involve the mandibular posteriors. The present case is a rarity as it occurred in the mandibular arch, in the posterior region.
Bilateral fused teeth

Sathish Muthukumar, et al

Figure 1: Tooth 35 showing abnormal crown morphology and pronounced buccal groove

Figure 2: Partially erupted 45 showing abnormal crown morphology

Figure 3: Orthopantamograph showing abnormal tooth morphology in 35 and 45 along with impaction of 38 and 48

with bilateral presentation, caused by the union of second premolar and a supernumerary tooth which was seldom reported.

The number of teeth present is usually reduced in fusion, but is normal if the anomaly occur between a regular and supernumerary tooth. In contrast, gemination results in an apparent increase in the number of teeth\(^1\)\(^2\) as they are caused due to the division of a single tooth germ to form two separate teeth. In these situations, differentiation from gemination is clinically difficult or impossible.

Fused and geminated teeth are asymptomatic but necessitate treatment when decayed. Even though there is no variation in the treatment plan, an attempt can be made to differentiate both the anomalies by performing a thorough clinical and radiographic examination. The mesiodistal width of fused teeth is greater than their adjacent normal dentition. Fusion between two teeth usually results in space gain or diastema but may not be the case when the anomaly involves a supernumerary tooth as seen in our case.

The portion of the fused tooth that is formed by the supernumerary tooth is conical in morphology and is smaller when compared with other fused component that is separated by a developmental groove, whereas in gemination both the halves are mirror images of each other\(^1\)\(^2\). The present case also revealed two disproportionate components with dissimilar morphology separated by a groove.

Mader (1979) proposed the “TWO TOOTH RULE” according to which if the anomalous tooth is counted as two teeth and teeth count is normal in the arch, then it is considered as fusion. In cases where the anomalous tooth is counted as two teeth and if an extra tooth is present in the region, then it is regarded as gemination or a fusion between a normal and a supernumerary tooth\(^4\). He also suggested referring teeth joined together by dentin as “fused teeth.” Brook and Winter proposed the neutral term “double teeth” irrespective of the anomaly\(^2\).

Intraoral radiographs can be considered but may not be confirmatory in the differentiation of double teeth as geminated teeth have a single large root canal\(^7\), whereas fused teeth may have separate or fused root canals. In the present case, the anomalous teeth revealed an increased mesiodistal width, a single pulp chamber; single root canal and normal teeth count in the respective quadrant as evident radiographically.

The complications that follow a fusion are many. The teeth affected are morphologically abnormal and so unaesthetic\(^1\). The buccal and lingual grooves may be deep and extend subgingivally favoring plaque accumulation leading to dental caries and periodontal diseases\(^1\). The complex tooth morphology and pulpal anatomy, tooth position, and difficulty in rubber dam placement may negate endodontic treatment and necessitate surgical removal of the affected tooth. Fusion of primary teeth may lead to hypodontia, malformation, impaction, delayed, or altered path of eruption of permanent successors\(^4\)\(^6\).

CONCLUSION

In conclusion, fusions are rare developmental anomaly and need to be recorded during routine clinical examination.
The abnormal morphology demands prophylactic and early interceptive treatment in order to avoid the complicated pulpal and periodontal treatment related to these teeth. Surgical extraction of the affected primary teeth can be an option to avoid its delayed exfoliation and the subsequent delayed or ectopic eruption of the successor.

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