

An Unusual Case of Gemination in Mandibular Supernumerary Tooth: A Case Report

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Abstract

Gemination or Schizodontism, a relatively uncommon dental anomaly, is characterized by a tooth with a bifid crown and a common root and root canal. It is commonly seen in primary dentition and gemination in a supernumerary tooth is a rare phenomenon. The purpose of this paper is to present an unusual case wherein gemination has occurred in a lingually placed mandibular supernumerary third premolar tooth or “geminated-premolar-like”.

Keywords: Fusion, Gemination, Mandibular Third Premolar, Supernumerary Teeth

INTRODUCTION

Occasionally clinicians encounter developmental anomalies affecting the number of teeth or its morphology. Supernumerary tooth is one among them affecting the number of teeth, regardless of their location they are defined as teeth that exceed the normal dental formula.¹

Supernumerary teeth are the most common cause of dental anomalies, and their prevalence in the permanent dentition has been reported to be between 0.1% and 3.8%.² They may be single, multiple, unilateral, or bilateral in their distribution but have a predilection for the premaxilla. Most common supernumerary tooth is mesiodens, placed between maxillary incisors,³ followed by maxillary lateral incisor, maxillary fourth molar and mandibular third premolars, in descending order. Maxillary premolar, maxillary canine and mandible fourth molar are the least common ones.

Gemination is a developmental disturbance of the shape of teeth and is usually recognized as a partial cleavage of a single tooth germ resulting in one root and one pulp space with two partially or totally separated crowns.⁴ It has a greater tendency to occur in the maxillary anterior region.⁵

Though these individual developmental anomalies are a rare entity in itself, a culmination of both anomalies occurring simultaneously is even rarer; here we present an unusual case of gemination in a lingually placed mandibular supernumerary third premolar tooth or “geminated-premolar-like”.

CASE REPORT

A 26-year-old, healthy male patient reported to our clinic with the chief complaint of chronic irritation on right lateral border of tongue associated with a lingually placed premolar tooth and food lodgement in between the complaint tooth. Following a clinical examination, mild crowding in lower arch and a lingually placed supernumerary tooth was noticed between 44 and 45.

A thorough clinical examination confirmed the presence of supernumerary tooth and the entire remaining dentition was normal. The supernumerary tooth resembled that of a second premolar tooth with an extra cusp (Figure 1). Because of the chronic persisting issue of food lodgement and irritation on tongue movements, exodontia of the supernumerary tooth was done under local anesthesia. Extraction of the tooth was uneventful, suture was placed and haemostasis achieved.

The involved teeth had characteristic appearance of Geminated teeth; the mesiodistal diameter of the clinical crown was larger than normal, and from the cuspal tip to the apex of the root a groove of unequal depth divided the tooth into two, unequal parts had different morphology; crowns and roots were significantly developed but smaller in size. The length of the root was normal relative to its crown. The root apex was completely developed (Figure 2a & 2b).

DISCUSSION

Developmental dental disorders can occur due to various reasons; it can be due to the abnormalities in the differentiation of the dental lamina and the tooth germs resulting in anomalies in number, size and shape or due to abnormalities in the formation of the dental hard tissues resulting in the anomalies in structure.⁵⁻⁷

Gemination is defined as an attempt by a single tooth bud to divide, with a resultant formation of either a large tooth with a bifid crown or two completely divided teeth throughout the crown and root.⁸ The frequency

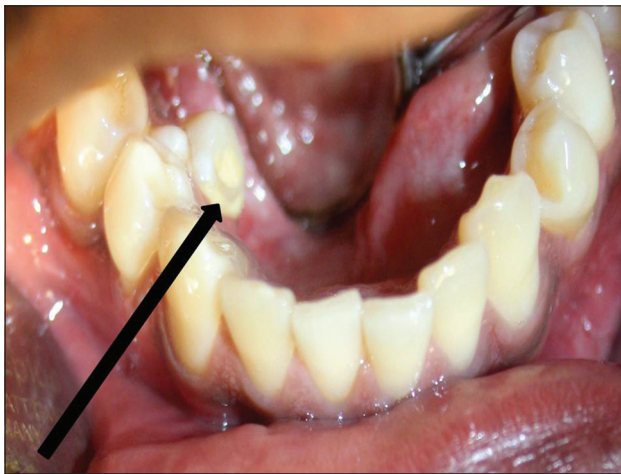


Figure 1: Lingually placed mandibular supernumerary third premolar tooth or "geminated-premolar-like"

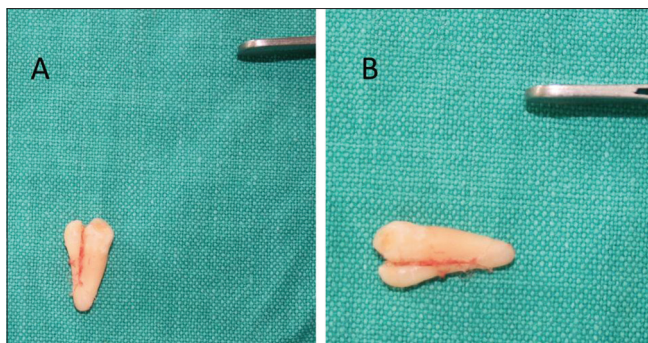


Figure 2: (a and b) Extracted tooth is Mesiodistal and buccolingual view

of gemination ranges from 0.01-0.04% in the primary, and 0.05% in the permanent dentition and the bilateral presentation is rare. It is more frequent in primary than in permanent teeth. The characteristic appearance of geminated tooth include; the larger mesiodistal diameter of the clinical crown than normal, and a groove of unequal depth extending from the incisal edge to the apex of the root dividing the tooth into two, usually two unequal parts.⁵ These characteristic features were evident in our extracted supernumerary tooth.

This phenomenon rarely occurs in mandibular second premolar region and can cause the appearance of molar-like premolar. This anomaly known as molarization of premolars have been infrequently described in the dental literature.⁹ If gemination presents with a deep groove, these teeth may be susceptible to caries and periodontal disease.¹⁰

Simultaneous presentation of supernumerary tooth with associated gemination is a rare phenomenon. On literature review, we came across only three reports of geminated supernumerary teeth.¹¹ Liu et al¹² in 2007 was first to report the occurrence of gemination in a supernumerary tooth in the mandibular premolar region and proposed a new morphologic class "geminated-premolar-like" for the same. In 2012 Yang¹³ reported a case of a geminated supernumerary tooth with two crowns and one root in the maxillary premolar region. Amber et al¹¹ in same year reported a case of geminated supernumerary tooth with trifold crown.

In contrast with gemination, in fusion the crowns are united by enamel and/or dentin, but eventually there are two roots or two canals in a single root. Gemination causes crowding while fusion more often causes ectopic eruption.¹⁴

A practical way of differentiating between fusion and gemination is Mader's "two tooth" rule may be fused teeth are counted as one and the number of teeth in the dental arch is less then the term fusion is considered. However, when the abnormal tooth is counted as one and the number of teeth in dental arch is normal then it is termed as gemination or is a case of fusion between normal and supernumerary teeth. A diagnostic consideration would be that supernumerary teeth are often slightly aberrant or cone shaped, thus fusion between normal anomalies of supernumerary teeth will show differences in two halves of the joined crown. However, in gemination the two halves of the joined crown are mirror images also, there is a buccolingual groove that extends to the incisal edge.¹⁵ In our case this method again confirmed the gemination of supernumerary tooth.

CONCLUSION

Diagnosis and management of fused or geminated teeth has always been dilemma for the clinicians. Very less number of reported cases in literature can be attributed either due to its rarity or because of their subtle presentation of geminated supernumerary teeth and also due to the limitations of conventional radiography. Therefore more careful examination by clinical and adequate radiographic methods will be helpful in providing early diagnosis and intervention, and also to recognise and report such cases with greater frequency.

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