

Twinning Involving Primary Maxillary Lateral Incisor

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ABSTRACT

Developmental anomalies in the hard tissue are seen frequently in dental practice. Gemination and fusion are the most commonly encountered anomalies, and distinction between the two is always difficult. Gemination, also known as double tooth, is an anomaly exhibiting two joined crowns and usually a single root. It represents an incomplete attempt of a single tooth germ to split. It is considered multifactorial in etiology, with genetic and environmental causes. This paper discusses a rare example of bilateral gemination (prevalence 0.04%) of maxillary central incisors with completely separated roots. Multidisciplinary care ensured a successful esthetic and functional outcome.

Keywords: gemination; fusion; twinning.

INTRODUCTION

Tooth gemination is defined as single enlarged tooth or joined tooth wherein the tooth count is normal when the anomalous tooth is counted as one. It is an attempt of a single tooth bud to divide. A tooth with a bifid crown clinically gives an appearance of double teeth with a common root canal or rarely has separate canals. Gemination and fusion are clinically appears similar, and they can be differentiated by assessing the number of teeth in the dentition.¹ Though it occurs in both dentitions, it has a higher prevalence in deciduous teeth, with a higher frequency in anterior maxillary region.² The prevalence rate of unilateral gemination is 0.5% in deciduous teeth and 0.1% in permanent dentition.¹

Case report

A 5-year-old female patient reported to the department of Pedodontics and Preventive Dentistry with the complaint of decay in the left front region of the maxilla. On clinical examination, dentinal caries was observed on the labial surface of upper left lateral incisor. Macrodontia was observed in relation to the left maxillary lateral incisor. The central incisors were larger in the mesiodistal dimension and there was a deep groove present in relation to the labial surface

and incisal edge and continued cervically as a shallow groove. The patient had normal compliment of teeth for her age (Figure 1).



Figure 1. Intraoral picture showing twinning seen in 62.

The intra-oral periapical radiograph of the maxillary anterior region revealed (Figure 2) large crown of the lateral incisors of left side with two completely separated pulp chamber and roots, dentinal caries was involving pulp, which was suggestive of a case of twinning involving primary maxillary left lateral incisor (Figure 2).

Since the patient was not concerned about the aesthetic problems, pulpectomy was planned followed by permanent restoration (Figure 3).

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Figure 2. Intraoral periapical radiograph of 62.



Figure 3. Obturation done in 62.

DISCUSSION

Developmental dental disturbances ranges from abnormalities in the demarcation of the dental lamina, anomalies of tooth germs (number, size and shape) to abnormalities in the growth of the dental hard tissues (structure). Dental anomalies are not only congenital but also be idiopathic, inherited or acquired. Fusion and gemination are due to two different dental anomalies characterized by formation of clinically wide tooth.³ Gemination is seen when a single tooth bud attempts to divide resulting in two completely or incompletely separated crowns with a single root or root canal⁴ and Fusion occurs when there is union of two completely separate tooth buds. The terms “double tooth,” “double formations,” “joined teeth,” or “fused teeth” are often used to describe both germination and fusion.⁵ When a single tooth is partially cleaved is called “true gemination” and when it is completely cleaved it is called as “twinning”. Thus, twinning is considered when there is development of two separate teeth that arose from the complete division of one tooth bud.⁶ The etiology of both gemina-

tion and twinning remains unknown; thus, some of the interferences which occur during morphodifferentiation of the tooth germ are⁷, Hereditary or congenital diseases; Nutritional deficiency; Local traumas; Infectious/inflammatory processes; Ionizing radiation is also considered; Endocrine influences; Excessive ingestion of medicines. Unilateral gemination’s prevalence rate is 0.5% and 0.1% in deciduous and permanent dentition, respectively. Whereas Bilateral cases are seen in 0.01% to 0.04% in primary dentition and in 0.02% to 0.05% in permanent dentition.⁸ Thus, treatment depends upon the patient requirement, the teeth involved, and the degree of involvement. If it involves primary tooth the treatment depends upon the presence of the succedaneous tooth. In our case esthetics was not the primary concern of our patient. Thus, pulpectomy followed by restoration, treatment was considered.

CONCLUSIONS

The dental gemination is a morphological alteration which sometimes is confused with fusion The recognition and treatment of such anomalies are a challenge to the dentist but it is confirmed after thorough clinical examination and radiographic investigation. Thus, diagnosis is based on the number of teeth present in the dental arch and the presence of separate roots. However, the present case of twinning involving primary dentition is extremely rare where the crown is bifid with two root canals. Comprehensive approach is important to avoid further complications.

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