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OLGU SUNUMU/CASE REPORT

Co-occurrence of gemination and dens invaginatus: a case report

Dens invaginatus ve geminasyonun bir arada bulunması: bir olgu sunumu

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Abstract
Gemination is a developmental anomaly where a single tooth bud attempts to split into two. It is also sometimes called as double tooth or twinning. Dens invaginatus is another developmental anomaly caused due to invagination of a portion of crown. These anomalies occur as separate entities. Co-occurrence of these two anomalies have been only reported four times in the literature. Here we present an extremely rare case of simultaneous occurrence of gemination and dens invaginatus in the same tooth.
Key words: Gemination, dens invaginatus, double tooth

Öz
Geminasyon, tek bir diş tomurcuğunun bulunduğu yerde, tomurcuğun ikiye ayrılması ile oluşan gelişimsel bir anomalidir. Bu durum bazen çift diş ya da ikiz diş olarakta adlandırılır. Dens invaginatus ise diş tacının bir kısmının invaginasyonu kaynaklı diğer bir gelişimsel anomalidir. Bu anomaliler normalde ayrı ayrı meydana gelir. İki anomalinin birlikte bulunduğu, literatürde yalnızca 4 adet rapor vardır. Burada, aynı dişte hem invaginasyon hem de geminasyonun eş zamanlı oluştuğu çok nadir görülen bir olgu sunulmuştur..
Anahtar kelimeler: Geminasyon, dens invaginatus, çift diş

INTRODUCTION

Gemination is a developmental anomaly where a single tooth bud attempts to split into two[1]. It is also sometimes called as double tooth or twinning. Dens invaginatus is another developmental anomaly caused due to invagination of a portion of crown[2]. These anomalies occur as separate entities. Co-occurrence of these two anomalies have been only reported four times in the literature[3]. Here we present an extremely rare case of simultaneous occurrence of gemination and dens invaginatus in the same tooth.

CASE

A 48 year old female patient reported to the department of oral medicine and radiology with a chief complaint of stains in the teeth. No associated symptoms were reported. There was no significant medical or dental history. No extraoral abnormalities were noticed. Intraoral examination revealed a maxillary right lateral incisor larger than normal which had a notch extending from the incisal edge to the gingival one third of the crown (Figure 1). The tooth was asymptomatic.

Intraoral periapical radiograph of the tooth was taken. The radiograph revealed single rooted tooth with 2 crowns and 2 pulp canals which fuse at the apical third of the root (fig 2). It also showed an invagination upto cementoenamel junction. The invagination ended in a blind sac within the crown portion. The tooth was classified as Type 1 dens invaginatus and Type III double tooth. The patient was advised regarding the long term effects of the

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condition but as the tooth was asymptomatic the patient was not willing for any treatment.

Figure 1. Clinical photograph showing maxillary right lateral incisor showing gemination

Figure 2. Periapical radiograph showing invagination in the geminated maxillary right lateral incisor

DISCUSSION

Gemination occurs when one tooth bud attempts to split into two and geminated teeth present a single root structure[1-3]. The term "double tooth" is often used to describe gemination. Gemination is seen in deciduous as well as permanent dentition[4].

Dens invaginatus is a developmental anomaly resulting from invagination of a portion of crown i.e the enamel organ during odontogenesis[5-7]. The coronal type of invagination is lined with enamel, while the radicular type of invagination is lined with cementum[7]. Dens invaginatus has been classified by Ohlers and Aguilo et al.

Ohlers is the most popular system used. The classification is as follows:

Type 1: invagination ends as a blind sac within the crown,
Type 2: The invagination extends apically beyond the cemento-enamel junction,
Type 3: The invagination extends beyond the cementoenamel junction and a second "apical foramen" is evident[5,7,8].

Aguilo et al classified dens invaginatus based on morphological formation as follows:

Type I- Bifid Crown with a Single Root (The crown is larger than the normal with a notch on the incisal edge and a bifid pulp chamber. The root and pulp chamber are of the normal size),
Type II- Large Crown with a Large Root (The crown is larger than normal and has no groove or notch. The pulp chamber is single and large. The root is wider than the normal and has one large root canal),
Type III- Two Fused Crowns with a Single Root (There are two crowns with a vertical groove. The cervical portion of both the crowns may be joined. The pulp chamber may be separate. The root is conical shaped and larger than normal),
Type IV- Two Fused Crowns with Two Fused Roots (There are two crowns with a vertical groove. The cervical portion of both the crowns are joined along with the pulp chambers[9].

The permanent maxillary lateral incisors are the teeth most frequently involved [4]. It occurs rarely in the primary teeth but frequently in the permanent dentition and has a general prevalence of 0.04-10%. There is a 3:1 female predilection[5-8]. The presence of gemination and dens invaginatus in the same tooth is extremely rare.

Clinical management of such anomalies should mainly emphasize preservation of function and esthetics. Gemination is generally asymptomatic and does not require treatment except to correct poor esthetics, periodontal destruction, or caries. Treatment ranges from conservative procedures, non-surgical root canal therapy, or extraction[1-3,5-8]. These anomalies must be recognized early in order

to prevent caries, pulpal infection and necrosis and premature loss of the tooth.

REFERENCES

1. Tsesis I, Steinbock N, Rosenberg E, Kaufman AY. Endodontic treatment of developmental anomalies in posterior teeth: treatment of geminated/fused teeth-report of two cases. Int Endod J. 2003;36:372-9.
2. Neves AA, Neves MLA, Farinhas JA. Bilateral connation of permanent mandibular incisors: a case report. Int J Paed Dent. 2002;12:61-5.
3. Aquilo L, Gandia JL, Cibrian R, Catala M. Primary double teeth. A retrospective clinical study of their morphological characteristics and associated anomalies. Int J Paed Dent. 1999;9:175-83.
4. Rajendran R, Sivapathasundaram B. Shafer's Textbook of Oral Pathology. Elsevier. 5th ed, 2006;54-7.
5. Galindo-Moreno PA, Para-Vazquez MJ, Sanchez-Fernandez E. Avilla-Ortiz GA. Maxillary cyst associated with an invaginated tooth: a case report and literature. Ouintessence Int. 2003;34:509-14.
6. O'Sullivan E. Multiple dental anomalies in a young patient: a case report. Int J Paed Dent. 2000;10:63-636.
7. Mupparapu M, Singer SR. A rare presentation of DI in a mandibular lateral incisor occurring concurrently with bilateral maxillary DI : case report and review of literature. Aust Dent J. 2004;49:90-3.
8. Chen YM, Tseng CC, Harn W. DI: Review of formation and morphology with two case reports. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1998;86:347-52.
9. Aquilo L, Gandia JL, Cibrian R, Catala M. Primary double teeth. A retrospective clinical study of their morphological characteristics and associated anomalies. Int J Paed Dent. 1999;9:175-83.