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CASE STUDY

LEONGS' PREMOLAR: WOLF IN SHEEP'S CLOTHING

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ABSTRACT

Dens evaginatus (DE) is an odontogenic developmental anomaly that can be defined as a tubercle or protuberance from the involved surface of the affected tooth consisting of an outer layer of enamel, a core of dentin, and may contain a slender extension of pulp tissue. Early diagnosis and management of DE is important in order to prevent occlusal interference, compromised esthetics, carious developmental grooves, periodontal problems due to excessive occlusal forces, or irritation of the tongue during speech and mastication. Hereby, authors have presented case report of young female patient with an 'extra cusp'.

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INTRODUCTION

Dens evaginatus is an anomalous tooth development arising during morphodifferentiation. It is caused by abnormal proliferation of the inner enamel epithelium into the stellate reticulum of the enamel organ with a core of dentin surrounding a narrow extension of the pulp tissue projecting into the tubercle. (Levitan and Himel, 2006; Colak *et al*., 2012) It is also referred to as tuberculated cusp, accessory tubercle, occlusal tuberculated premolar, Leong's premolar, evaginatus odontoma, and occlusal pearl. (Cho *et al*., 2006) Prevalence ranges from 1to 4%. (Jum 1991) This anomaly, an enamel-covered tubercle on the occlusal surface between the buccal and lingual cusps of posterior teeth, can occur unilaterally or bilaterally. It occurs primarily in premolars but also has been reported -- although rarely -- on molars, canines, and incisors. The occurrence is five times more frequent in the mandible than in the maxilla. (Colak *et al*., 2012; Ju, 1991) The clinical importance of this condition is that this tubercle easily fractures or is worn away, exposing the fine pulpal extension, which may lead to infection. The tubercle may fracture or be abraded as soon as the tooth comes into occlusion. Infection and loss of tooth vitality may occur before root development is complete. Periapical lesions on the radiographs may be indistinguishable from or misinterpreted as developing dental follicle. (Vasudev and Goel, 2005) Diagnosis and treatment may be delayed and severe toothache or infection may occur because there is no obvious etiology for a pulpitis such as caries or trauma. (Ngeow and Chai, 1998) Immature root development in a young patient makes managing the affected teeth a problem. (Vasudev and Goel, 2005; Ngeow and Chai, 1998)

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Case history

A 20 years old female patient reported to outpatient department with a chief compliant of extra cusp present on both lower right and left premolar region. She denied any complaints other than food lodgement in the involved tooth. On examination, an accessory cusp like elevation or tubercle located between the buccal and lingual cusps of all mandibular premolars [Figure 1a, b]. The tooth was asymptomatic and responded normally to pulp vitality test. Thus, provisional diagnosis of dens evaginatus was made.

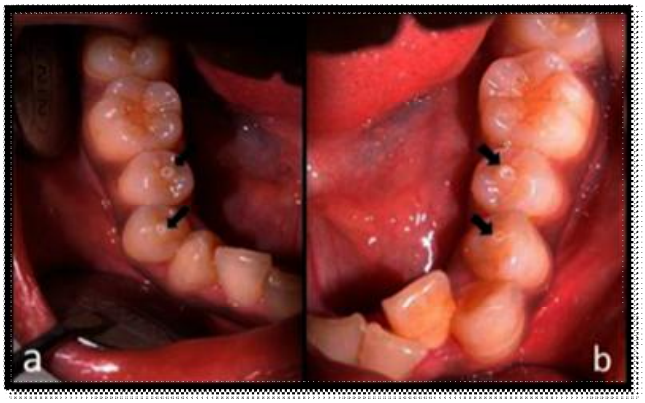

Fig1(a,b): Intra oral examination revealed an accessory cusp like elevation or tubercle located between the buccal and lingual cusps of all mandibular premolars[black arrows]

DISCUSSION

Dens Evaginatus (DE) is a developmental condition characterized by a cusp like supernumerary focal enamel protrusion on the occlusal or lingual surface of the crown. It is also known as Leong's premolar after the name of M O Leong who first drew attention to this entity in 1946. (Levitan and Himel, 2006) DE is a developmental aberration of a tooth resulting in formation of an accessory cusp whose morphology has been variously described as an abnormal tubercle, elevation, protuberance, excrescence, extrusion, or bulge. This uncommon anomaly projects above the adjacent tooth surface, exhibiting enamel covering a dentinal core that usually contains pulp tissue that on occasion may have a slender pulp horn which extends various distances up to the full length of the tubercle's dentin core. (Levitan and Himel, 2006) The presence of pulp within the cusp-like tubercle has great clinical significance and distinguishes the anomaly from supplemental cusps, such as the cusp of Carabelli which contain no pulp. (Colak *et al*., 2012; Cho *et al*., 2006) It has been postulated that the anomaly is caused by an envagination of the internal enamel epithelium and dental papilla into the stellate recticulum during morphodifferentiation stage of tooth development. (Colak *et al*., 2012; Ju, 1991) DE is clinically important as fracture or wear of the tubercle can lead to pulp death and periapical abscess, often before completion of root formation. (Cho *et al*., 2006) Various prophylactic treatments have been proposed to treat these teeth before pulp infection occurs: selective grinding of the tubercles, application of resin to reinforce the tubercles, placement of prophylactic amalgam or composite restorations after removal of the tubercles, and cavity preparations. (Cho *et al*., 2006; Vasudev and Goel, 2005; Ngeow and Chai, 1998; Segura-Egea *et al*., 2003) Panoramic radiographs are recommended for exclusion of the association of DE with other abnormalities, including supernumerary teeth, odontomas, and impacted or unerupted teeth. (Cho *et al*., 2006; Segura-Egea *et al*., 2003)

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