CASE REPORT

**Dens evaginatus and dens invaginatus** in a maxillary lateral incisor: Report of a rare occurrence and review of literature

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**Abstract**

A case of **dens evaginatus** (DE) and **dens invaginatus** (DI) concurrently affecting the maxillary right permanent lateral incisor in a 25-year-old Hispanic male is reported. DE, referred to as Talon’s cusp in the anterior teeth and Leong’s premolar in the premolar teeth, is a relatively rare condition by itself. An association of DI with this rare anomaly within the same tooth has never been reported before although it has been known to occur within the same patient. Since it is known that DE may be composed of normal enamel and dentine, as well as varying amounts of pulpal tissue, care should be exercised while performing any aesthetic procedures to remove or recontour it.

**Key words:** Dens evaginatus, dens invaginatus, lateral incisor, talon cusp, pulp.

**Abbreviations and acronyms:** CEJ = cemento-enamel junction; DE = dens evaginatus; DI = dens invaginatus.

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**INTRODUCTION**

**Dens evaginatus** (DE) is a relatively rare developmental anomaly characterized by the presence of an accessory cusp-like structure projecting from the cingulum area or cemento-enamel junction (CEJ) of the maxillary or mandibular anterior teeth in both the primary and permanent dentition. Premolars are the most commonly affected posterior teeth.  

**Dens invaginatus** (DI) is a developmental anomaly characterized by an infolding of enamel and dentine. It is most commonly found in permanent maxillary lateral incisors. The literature contains case reports of other teeth being affected. While the morphology of the lingual surface of the tooth might suggest a groove or fissure, the diagnosis of DI is made based on radiographic evidence.

Although both DE and DI have been reported extensively in the literature, concurrence of DE and DI within the same tooth is a rarity and has never been reported. For the practicing general dentist, it is important to recognize these anomalies and to be knowledgeable about their management.

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**CASE REPORT**

A 25-year-old Hispanic male was referred to an Oral and Maxillofacial Radiology clinic for a full mouth series of radiographs subsequent to an initial interview and examination in the Division of Oral Diagnosis. The patient presented to the Dental School clinic for dental care and was not experiencing any discomfort. The patient’s medical history was unremarkable. He had reported an earlier street altercation and resultant fracture of tooth #22 (Fig 1). The patient expressed a desire to have the fractured tooth restored and carious teeth treated. An intra-oral exam revealed a DE on tooth #12 (Fig 1). There were no associated swellings, sinuses or fistulae in the vicinity of the maxillary right lateral incisor. Radiographic examination was conducted as planned and the patient was dismissed with an appointment for a future treatment-planning visit.

Upon review of the radiographs, it was noticed that, in addition to the DE, a DI was present in the right maxillary lateral incisor (Fig 2).

The DI was located apical to the DE at the level of the CEJ. The apical periodontium appeared to be intact radiographically. There was neither a carious lesion nor any restoration evident in the tooth. Examination of the remaining dentition exhibited other findings, including caries, periodontal disease and restorations. No treatment was performed for this tooth beyond routine scaling and prophylaxis. There were no occlusal discrepancies or interferences involving this tooth. Functional or aesthetic impairment was not evident. A clinical and radiographic follow up of that tooth was suggested to the patient. A treatment plan was completed for the rest of the quadrants and the patient is currently undergoing treatment at the Dental School.

**DISCUSSION**

While the aetiology of accessory cusps is unknown, it is known that they are commonly found in mandibular premolars and can affect anterior teeth. Mitchell first described the accessory cusps, DE, in *Dental Cosmos* in 1892. Although the aetiology of DE is still not well understood, it does appear that both genetic and environmental components exist. Similar to other