Orthodontic treatment of a patient with maxillary lateral incisors with *dens invaginatus*: 6-year follow-up

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Introduction: *Dens invaginatus* is an anomaly of dental development in which calcified tissues, such as enamel and dentin, are invaginated into the pulp cavity. This morphologic alteration is more frequent in maxillary permanent lateral incisors and makes them more susceptible to carious lesions and pulp alterations. **Methods:** This case report describes a patient with maxillary lateral incisors affected by *dens invaginatus*. The maxillary right lateral incisor had already undergone endodontic treatment, and the maxillary left one had a periapical lesion. Additionally, the patient had a Class II Division 1 malocclusion, with anterior open bite, posterior crossbite, and an impacted mandibular left second molar. **Results:** The orthodontic treatment involved extraction of the maxillary lateral incisors and 2 mandibular premolars, resulting in proper overjet and overbite with good arch coordination and occlusal stability. **Conclusions:** Treatment results were stable, as evaluated in a 6-year posttreatment follow-up. (Am J Orthod Dentofacial Orthop 2018;153:730-40)

Dens invaginatus, also known as *dens in dente*, is an odontogenesis alteration in which the development of the enamel is affected. It occurs due to the deepening of the enamel epithelium into the dental papilla, causing a defect on the dental crown.[1,2]

It is considered an imperfection in dental development, caused by the invagination of coronal tissues before tissue calcification, with prevalence reportedly varying from 0.17% to 12%.[3-7] Clinically, the depth of the invagination may go from a slightly exaggerated pit of the cingulum to a deep infolding that extends in the direction of the dental apex. Diagnostic radiographic imaging shows the abnormal enamel with a well-defined appearance, giving the impression of a small tooth inside another one.[1] It may affect both the deciduous and permanent dentitions; the most commonly affected teeth are the central and lateral incisors, predominantly in the maxillary arch.[3-7]

Because *dens invaginatus* is an anatomic alteration, it causes the affected tooth to be highly susceptible to carious lesions and pulpal alterations soon after eruption.[8] The treatment for *dens invaginatus* may include various clinical procedures. If the teeth are sound, the application of pit and fissure sealant is recommended for physical protection of the invagination. In case of carious tissue without pulp exposure, restorative treatment can be done. If there is pulpal involvement, a conservative approach using direct pulp capping or pulpotomy may be feasible. Endodontic treatment or dental extraction (with or without autotransplantation) may be another alternative.[8-11]

This case report describes an orthodontic treatment with extraction of the 2 maxillary lateral incisors with *dens invaginatus* and 2 mandibular premolars, and the 6-year follow-up.

DIAGNOSIS AND ETIOLOGY

A girl, age 12 years 5 months, had a chief concern of maxillary dental crowding and anterior open bite (Fig 1). Upon examination, it was noted that her speech had also been affected. She had no temporomandibular joint symptoms. She had a history of previous orthodontic care with maxillary expansion and incisor alignment.

The extraoral photographs showed a convex profile, with an obtuse nasolabial angle, an acute mentolabial

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Fig 1. Pretreatment photographs.

Fig 2. Pretreatment dental casts.