Odontoplasty of a Talon Cusp in a Maxillary Lateral Incisor

Ciara Houser DDS **Carli DiGioia DMD**

Children's Wisconsin, Milwaukee, WI

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Background

Dens evaginatus is an uncommon dental developmental anomaly that presents as an accessory tubercle or cusp. It is differentiated from supplemental cusps (ex: cusps of carabelli) by the frequent presence of pulpal tissue in addition to an outer layer of enamel and an inner core of dentin. Trauma during mastication can sometimes result in cusp fracture and subsequent pulpal exposure and periapical infection.

A talon cusp is a form of dens evaginatus that occurs on the lingual surfaces of anterior teeth. A talon cusp presents as a well-delineated additional cusp that extends to at least half the distance from the cementoenamel junction to the incisal edge. Some studies report it occurring in 1-6% of the population, and it is also seen in syndromes such as Rubinstein-Taybi, Ellis van-Creveld, Sturge-Weber, Berardinelli-Seip, and incontinentia pigmenti achromians. Talon cusps may increase difficulty in maintaining oral hygiene, and may result in occlusal interferences, carious developmental grooves, and undesirable esthetics.

Objectives

- To report on the management of a prominent talon cusp on a maxillary left lateral incisor that was causing an occlusal interference and undesirable esthetics
- To propose and discuss the possible sequence of managing dens evaginatus in the pediatric population

Pre-Treatment



Mid-Treatment

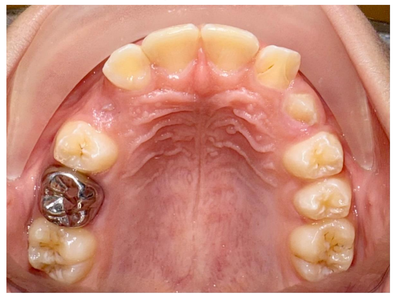
Reduction #1
8/19/2024

Reduction #2
9/23/2024 (1 month)

Reduction #3
10/28/2024 (1 month)

Post-Treatment

Reduction #4 (Final Reduction): 1/29/2025 (3 months)
**Post-treatment photos taken on 3/4/2025*


Case Report

A healthy 8-year-old female presented for a new patient exam with chief complaint of discomfort and undesirable appearance due to a prominent talon cusp on a maxillary left permanent lateral incisor. The maxillary left permanent lateral incisor presented with slight rotation secondary to the occlusal interference from the talon cusp. No other orthodontic needs were identified. Patient's parent elected for sequential reduction (odontoplasty) of the talon cusp over several visits.

A CBCT was obtained prior to treatment to confirm that there was no pulpal tissue present in the talon cusp. All reductions were completed without local anesthetic as patient's tolerance allowed. With each reduction, ~1-2mm of enamel were removed and the cusp was also smoothed to avoid sharp edges. Fluoride varnish was applied after each visit to aid in reducing patient post-op sensitivity. In total, 3 large reductions were completed at approximately 1-month intervals to allow the tooth to settle and to avoid pulpal irritation. A 4th smaller reduction was attempted, but due to increased patient sensitivity the 4th reduction was minimal. Gluma may be considered in the future if patient sensitivity persists. Future treatment may also include sealant of the remaining lingual grooves for caries prevention.

Minimal de-rotation and settling of the tooth was observed at the 5-month follow-up. Patient may benefit from limited orthodontics in the future to address the rotation of the maxillary left permanent lateral incisor.

Conclusion

After confirming that there was no pulpal tissue present via CBCT, sequential odontoplasty of a prominent talon cusp was successfully completed over the course of several months. Increased patient sensitivity is of primary concern with this procedure, and by completing the reductions at 1-month intervals and applying fluoride varnish, patient sensitivity may be improved.

References

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