

Case Report

Unilateral dens evaginatus (Talon Cusp) in primary maxillary lateral incisor: A case report

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Talon cusp is a well-delineated additional cusp located on the surface of an anterior tooth projecting from the cingulum area or cemento-enamel junction. It is a developmental dental anomaly with clinical significance. Dental clinicians need to be aware of the potential complications that may be associated with the presence of talon cusp. Early diagnosis and management are essential for preventing complications. The paper reports a case of unilateral talon cusp in primary maxillary lateral incisor in a 7-year old male child and its successful management.

Key words: Talon cusp, developmental dental anomaly, primary dentition, maxillary, lateral incisor

INTRODUCTION

Talon cusp is an uncommon developmental aberration in which anomalous structure resembling an eagle's talon, and composed of normal enamel, dentine, and horn of pulp tissue, projects lingually from the cingulum areas of a maxillary or mandibular permanent incisor (Rajendran et al., 2020). The occurrence of talon's cusp is estimated to be between 0.73% -8% of the population (Nandini et al., 2021). However, the prevalence in the Indian population ranges from 1% to 8% (Nandini et al., 2021). Etiology is found to be multifactorial with a combination of genetic and environmental factors and is believed to arise during the early stages of odontogenesis i.e. morpho-differentiation stage (Hattab et al., 1995). The permanent dentition is more commonly involved as compared to the primary dentition and affects both the sexes with higher predilection in males (Hattab et al., 1995). Talon cusp can be classified into three types as Type 1 or true talon and is an additional cusp projecting towards the surface of the palate to at least half the length between the cemento-enamel junction and the incisal edge. It is the most common type of talon cusp. Type 2 or a semi-talon is an additional cusp of >1 mm in length and extending less than half of the length between the cemento-enamel junction and incisal edge. Type 3 or trace talon is a protruding cingulum with a tubercle-like appearance

(Hattab et al., 1996). The following case report describes the management of an uncommon case of unilateral talon cusp in the primary maxillary lateral incisor.

CASE PRESENTATION

A 7-year-old male child was referred to the Department of Pediatric and Preventive Dentistry for the management of occlusal interference in the upper front teeth region. The dental and medical histories were found to be irrelevant. The family history of the child patient regarding hereditary developmental dental anomalies was insignificant. Thorough intraoral examination revealed the presence of a complete set of primary teeth in both maxillary and mandibular arches and first permanent molars. A prominent cusp-like structure was present on the palatal surface of the left primary maxillary lateral incisor projecting from the cingulum area and its tip extended towards the incisal edge (Figure 1). This projecting cusp was the cause of occlusal interference. Percussion, periodontal probing, and electric pulp testing were performed and they were found to be normal. The parents of the child patient gave no history of trauma. A systemic general examination was carried out to rule out the presence of an associated syndrome. The child patient was not cooperative for radiographic investigation. A diagnosis of talon's cusp of primary maxillary lateral incisor was made. The talon cusp was reduced gradually to eliminate occlusal interferences, treated with fluoride varnish, and restored

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with resin-modified glass ionomer restoration after obtaining parent's consent (Figure 2). The patient was monitored periodically after 1, 3, and 6 months. The child patient was found to be asymptomatic in follow-up visits.



Figure 1. A clinical image of type 1 talon cusp on the palatal surface of the primary maxillary lateral incisor



Figure 2. Postoperative image after reduction of talon cusp and restoration of carious groove.

RESULTS AND DISCUSSION

Dens evaginatus is an extra cusp present usually in the cingulum areas of the incisors or the central groove or ridge of posterior teeth (Casamassimo et al., 2015). In incisors, they appear as talon shaped and can approach the level of the incisal edge. It is composed of normal enamel, dentine, and horn of pulp tissue (Rajendran et al., 2020). Radiographic investigation shows the presence of a cusp overlying the central portion of the crown including enamel and dentine (Neville et al., 2015). The etiology of the talon's cusp remains unknown but it is thought to arise during the morpho-differentiation stage and may have occurred as a result of "outward folding of inner enamel epithelial cells and a transient focal hyperplasia of the mesenchymal dental papilla" (Hattab FN et al., 1995). In most of the cases, talon cusp is reported as an isolated case. However, it has been shown to be associated with Berardinelli-Seip syndrome, Ellis-van Creveld syndrome, Mohr syndrome, Rubinstein -Taybi syndrome, and Sturge- Weber syndrome (Rajendran et al., 2020, Neville et al., 2015). Clinical problems associated with the presence of talons cusp include attrition, problems with breastfeeding, occlusal interference, pain in the temporomandibular joint, problems in periodontium caused by

excessive occlusal forces, irritation in tongue while speaking, caries susceptibility due to the presence of deep developmental grooves, and compromised esthetics (Hattab et al., 1996). Different treatment modalities have been proposed for talon cusp depending upon size and morphology for both esthetic and occlusal reasons. Selective grinding done gradually throughout 6 to 8 weeks helps in reducing the cusp height thereby allowing the deposition of reactionary dentine on the pulpal surface of the dentine (Richard RW et al., 2005). However single visit sectioning of the cusp followed by elective pulpotomy can also be considered as an option for treatment (Richard RW et al., 2005). Some patients prefer a conservative approach to prevent caries and maintain the vitality of the tooth (Nandini et al., 2021). If the talon's cusp is out of occlusion, it remains dormant without causing any occlusal interference, irritation, or pain and therefore require no treatment.

CONCLUSION

A diagnosis of non-syndromic unilateral talon cusp in primary maxillary lateral incisor was made based on clinical findings and the absence of any associated syndrome. Dental health professionals should be aware of the potential complications associated with the presence of talon cusp along with possible treatment options.

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CONFLICT OF INTEREST

None declared

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