Facial Talon Cusp in Maxillary Lateral Incisor - A Rare Case Report

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Abstract

Talon cusp is a rare developmental abnormality of the tooth characterized by presenting usually on the palatal/lingual surface of anterior teeth as a cusp like projections. The crown of the tooth is covered by normal enamel and dentin, with a cusp like projection that may or may not contain an extension of pulp. Presence of talon cusp on the facial surface of an anterior tooth is rare and literature shows that only few cases have been reported earlier. In this case we present a facial talon cusp on the maxillary right lateral incisor of a 15 year old girl.

Key words: Facial talon cusp, lateral incisor, dental anomaly.

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Introduction

Talon cusp is a prominent accessory cusp like projection that extends from the cingulum area or the cementoenamel junction of the maxillary or mandibular teeth in both deciduous and permanent dentition[1]. This accessory cusp may be of various sizes and consists of enamel and dentin. There may or may not be an extension of the pulp into the cusp[2]. This dental abnormality was first described by Mitchell in 1882. Later Mellor and Ripa gave the term talon cusp due to the similarity of this cusp with the shape of an Eagle's talon[3,4]. The prevalence of talon cusp ranges from 0.06% to 7.7%.Talon cusp is found most commonly in maxillary lateral incisors (67%). It is less commonly seen in central incisors (24%) and canines (9%)[5]. This cusp is usually present on the palatal aspect of the crown of incisors. Only few cases of Talon cusp have been reported with its occurrence on the facial surface of incisors. We report a case of labial talon cusp in right upper lateral incisor with literature review herewith.

Case Report

A 15 year old female presented to Department of Oral Medicine and Radiology, for yellowish deposits in her teeth. Extra-oral examination revealed no significant abnormalities (Fig. 1). Intra-oral examination revealed a well-defined cusp like projection on the labial surface of right maxillary lateral incisor which was pyramidal in shape and extended from cementoenamel junction towards incisal edge (Fig. 2). It was separated from labial surface of teeth by a non-carious developmental groove. No dental caries was detected in the groove and the tooth did not cause any occlusal interference. No abnormalities were detected on the palatal aspect of crown of the lateral incisor (Fig. 3).

Intra oral periapical radiograph revealed a triangular, radiopaque shadow superimposed over the middle third of crown of the tooth (Fig. 4). The periapical area did not reveal any pathological changes. The radiopacity had a density that was comparable to enamel. No changes were observed in the pulp chamber or canal. Cone beam computed tomography was taken for the patient which revealed no evidence of pulp horn extension into the talon cusp (Fig. 5 & 6). A diagnosis of facial talon cusp was made taking into account the clinical and radiological findings. A thorough scaling and root planning was done. As the patient was not having any complaint due to the abnormal tooth, the patient was advised to be under periodic observation.

Fig. 1: Extra oral appearance of the patient revealing no abnormalities

Fig. 2: Intra-oral examination shows a well-defined accessory cusp on the labial aspect of the crown of maxillary permanent right lateral incisor, the accessory cusp was pyramidal in shape and extended from the gingival margin to the middle third of the crown

Fig. 3: Intra oral view of right lateral incisor showing no abnormalities in palatal cusp

Fig. 4: Intra oral periapical radiograph revealed radiopaque area superimposing on the crown portion of right lateral incisor

Fig. 5: Axial section of cone beam computed tomography revealing facial talon cusp in right permanent lateral incisor

Fig. 6: Axial section of Cone Beam Computed Tomography at coronal level revealed no evidence of pulp horn extension into talon cusp

Discussion

Talon cusp is a developmental abnormality involving shape of the tooth and is characterized by cusp like projection extending from the cingulum region or cemento-enamel junction upto varying distances toward the incisal surface of crown of the tooth. Its etiology is not clear. However, some authors are of the opinion that, it may be by an interplay of genetic and environmental factors or increased activity of the dental lamina early phase of odontogenesis[6]. Embryologically, talon cusp may be formed due by the outer folding of the inner enamel epithelial cells, and transient focal hyperplasia of the peripheral cells of the mesenchymal dental papilla[7,8]. The usual location of the talon cusp is on the palatal surface of incisors. But some cases of labial talon cusp have been reported in the literature. Maxillary lateral incisors are the teeth commonly affected in permanent dentition. Our case

correlates with the literature, since the tooth affected is maxillary lateral incisor.

Talon cusp may occur in isolation or may accompany other anomalies of the tooth such as, distorted nasal alae, cleft lip, dens in dente, mesiodens, odontome, unerupted or impacted teeth, peg shaped maxillary lateral incisor, bilateral gemination, fusion, supernumerary teeth, and enamel clefts[3]. But in our case the patient did not have any dental anomaly other than talon cusp. It has also been associated with some systemic conditions or syndromes like Mohr syndrome (oro-facial-digital II), Sturge-Weber syndrome (encephalotrigeminal angiomatosis), Rubinstein-Taybi syndrome, incontinentia pigmentiachromians and Ellis van Creveld Syndrome[9]. But in our case the patient had no other dental abnormalities and genetic syndrome.

Hattab *et al*[10] classified lingual talon cusp from Grade 1(the most extreme form) to Grade 3 (slightest form) Labial talon cusp has been classified as follows[11].

Stage 1: The slightest form consists of a slightly raised triangle on the labial surface of an incisor extending the length of the crown but not reaching the cementoenamel junction or the incisal edge.
Stage 2: The moderate form is a raised triangle on the labial surface of an incisor that extends the length of the crown, does not reach the cementoenamel junction, but does reach the incisal edge.
Stage 3: The most extreme form, is a free form cusp extending from the cementoenamel junction to the incisal edge on the labial surface of an incisor[11]. Based on this staging system, our case could be categorized into stage 2.

Radiographically, it present as a radiopaque v-shaped shadow superimposed on the normal image of the coronal portion of the tooth. Similar radiographic finding was observed in our case. This appearance may vary in size and shape also according to the angle at which the radiograph is taken[3].

The main clinical problems associated with talon cusp were altered aesthetics, occlusal interference, displacement of teeth, plaque accumulation in lateral cuspal grooves, and increased risk of caries and periodontal disease[12].

Treatment of talon cusp will depend on the type of presentation and complications. Small talon cusps usually don't need treatment. Esthetics may be a major issue if talon cusp is present on labial aspect. Pit and fissure sealants may be used to prevent caries, if there are deep developmental grooves. If there is occlusal interference, odontoplasty and fluoride application can be done over a period of 6-8 weeks. Orthodontic intervention may be necessary in cases of tooth displacement of the involved or opposing teeth. In cases of fully matured teeth, root canal treatment may be needed, where as in cases with incomplete root formation the treatment of choice is calcium hydroxide pulpotomy[13]. But in our case, there was no extension of pulp tissue into the cusp, and hence there is no risk of pulp exposure or caries formation Oral prophylaxis was carried out and patient is recalled every 3 months for follow up.

Conclusion

The aim of this paper is to report a rare occurrence of labial talon cusp and discuss its clinical and radiological presentation. The finding of labial talon cusp necessitates complete clinical examination of the patient and early treatment modalities to avoid possible complications such as occlusal interference, caries formation or periodontal problems.

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