

CASE REPORT

Mandibular Talon Cusp

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ABSTRACT:

Talon cusp is a developmental dental anomaly thought to arise as a result of evagination on the surface of a tooth crown before calcification has occurred. The etiology remains unknown. The incidence is 0.04-10%. Any tooth may have a talon cusp but most of the cases involve maxillary lateral incisors, with some instances of bilateral involvement. The anomaly has been reported to be rare especially when it occurs on mandibular teeth. This article reports a case of talon cusp on permanent mandibular central incisor.

Key words: Talon cusp, Mandibular incisor, Dental anomaly, Permanent teeth

Talon cusp is a developmental malformation characterized by the presence of an extra cusp that takes the form of a tubercle arising from the occlusal or lingual surface.¹ It is a rare anomalous odontogenic structure first described by Mitchell in 1892.² It is composed of enamel, dentin and a varying amount of pulp tissue.³ In the literature, this malformation has also been referred as interstitial cusp, tuberculated premolar, odontome of the axial core type, evaginated odontome, occlusal enamel pearl, occlusal anomalous tubercule, supernumerary cusp and dens evaginatus of anterior teeth.⁴ Review of the reported cases indicated that this condition usually affects the maxillary incisor teeth and those talon cusps of the mandibular incisors are extremely rare.

Case Report :

A 18 year old female patient reported to the Department of Periodontics, College of Dental

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Sciences, Davangere with no relevant medical history. On intraoral examination, a prominent accessory cusp on the lingual surface of the mandibular right permanent central incisor (inverted V shape) was present (Fig. 1). The accessory cusp was extended from cemento-enamel junction and curved towards the incisal edge of the incisor. An intraoral periapical radiograph of this tooth showed enamel and dentin and a horn of pulpal tissue extension (type I talon cusp)⁵ (Fig. 2). The patient had no discomfort, hence treatment was not done.

Discussion :

Talon cusp occurs in primary and permanent incisors⁶ affecting both the sexes and may be unilateral or bilateral.^{7, 8} The literature review evaluated that dens evaginatus is more common in the permanent dentition (77%) than in the primary dentition (23%), while in the permanent dentition 94% affect the maxillary teeth and 6% mandibular teeth.⁴ Out of which about 4% affect the mandibular

central incisor, whereas 33% affect the maxillary central incisor.⁴ This case report with one permanent mandibular central incisor (41) with talon cusp, therefore seems to signify a unique and rare presentation.

Talon cusp may occur in isolation or with other dental anomalies such as mesiodens, odontoma, unerupted or impacted teeth, peg-shaped maxillary incisor, dens invaginatus, cleft lip and distorted nasal alae, bilateral germination fusion, supernumerary teeth and enamel clefts.^{1,2} According to the literature, it has also been associated with some systemic conditions such as Mohr syndrome (Orofacial-digital talon cusp)⁹, Sturge-weber syndrome¹⁰, Rubinstein-Taybi syndrome¹¹, incontinentia pigmenti achromians and Ellis-Van creveld syndrome.¹² However, no such associated syndrome or dental anomalies was seen in this case.

Millor and Ripa (1970)¹³ coined the term talon cusp because it resembles an eagle's talon in shape. Davis and Brook (1986)¹⁴ defined talon cusp as an additional cusp that predominantly projects from the lingual surface of primary or permanent anterior teeth and is morphologically well defined and extends at least half the distance from the CEJ to the incisal edge. Schulze (1970)¹⁵ referred to the very high accessory cups as a T. form or if lower a Y-shaped crown contour. Gardner and Girgis (1979)¹¹ said that talon cusp is a markedly enlarged cingulum on a maxillary tooth. It is apparent from these comments that a general understanding exists as to what a talon cusp is but no strict diagnostic criteria exist. Clinically in this case the talon cusp was a well delineated additional cusp that projects from the lingual surface of permanent central incisor tooth that extends at least half the distance from the cemento enamel junction to the incisal edge. (type I talon cusp).⁵

The extent of pulp into cusp is difficult to determine because of its superimposition over the main pulp chamber. While some indicated that talon

cusps contain pulp tissue, some found no evidence of pulp extension into the cusp. However, it has been suggested that large talon cusps, especially those that stand away from the tooth crown are more likely to contain pulp tissue.¹⁶ This phenomenon has been reported both in primary and permanent dentition. Radiologically in this case a horn of pulp tissue was extending into the cusp.

The complications of talon cusp are diagnostic, functional aesthetic and pathological "A large talon cusp is unaesthetic and presents clinical problems. It may present diagnostic problems if it is unerupted and resembles a compound odontoma or a supernumerary tooth and so leads to unnecessary surgical procedure. Functional complications include occlusal interference, trauma to the lip and tongue, speech problems and displacement of teeth. The deep grooves which join the cusp to the tooth may act as stagnation areas for plaque and debris, becomes carious and cause subsequent periapical pathology, management will depend on individual presentation and complications. Small talon cusps are asymptomatic and need no treatment. Where there are deep developmental grooves, simple prophylactic measures such as tissue seeking and composite resin restoration can be carried out. An essential step especially in case of occlusal interference, is to reduce the bulk of the cusp gradually and periodontally and application of topical fluoride gel to reduce sensitivity, and stimulate reparative dentin formation for pulp protection or outright total reduction of the cusp and calcium hydroxide pulpotomy. It may also become necessary sometimes, to fully reduce the cusp, extirpate the pulp and carryout root canal therapy. Orthodontic correction may become necessary when there is tooth displacement or malalignment of affected or opposing teeth. Although infrequent, it merits some clinical consideration, pulp necrosis and periapical pathosis may develop. In addition, the extra cusp is pron to abrasion or fracture.^{17, 18} However, talon cusp in this case was asymptomatic and the

patient did not complain of any discomfort and did not present any clinical problem esthetically or functionally. However the management and treatment outcome of talon cusp depends on the size, present complications and patient co-operation.

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Figure 1



Figure 2