

## CASE REPORT



# Twin talon cusp - A case report with review of literature

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### Abstract

Talons cusp is one developmental anomaly of the tooth that shows varied presentation as mentioned in the literature. The occurrence of talons cusp in the palatal aspect of the maxillary teeth has been the most common of all. These cases tend to occur due to hyperactivity of the enamel organ. The occurrence of this developmental defect in turn can lead to alteration in normal structure and function of the tooth. Hereby, we are reporting a rare occurrence of twin Talon's cusp involving the palatal aspect of maxillary central incisor.

### Introduction

Developmental anomalies involving the structure of the teeth have long been a debate as of its occurrence along with various syndromic conditions. Talons cusp is one such anomaly that is easy to diagnose due to its structural prominence. It was first described by Mitchell in 1892 and was named as Talon's cusp by Mellor and Ripa.<sup>[1]</sup> It is usually visualized as an accessory cusp from the cingulum area of an anterior tooth resembling an eagle's talon which resembles that of an eagle's claw as seen when hooked on to a prey.<sup>[2]</sup> The occurrence of twins Talons cusp involving two maxillary incisors is a rarity and is much less reported so far.

### Case Report

A 11-year-old girl reported with the chief complaint of decayed teeth. Extraoral findings showed no abnormality. Intraoral finding revealed a mixed dentition along with the presence of dental caries in relation to 54, 75, and 46. The patient had a proclined maxillary anteriors, along with the presence of Talon cusp in 11 and 21. The cusp projected from the cemento-enamel junction and curved toward the incisal edge of both the incisors [Figure 1] A periapical radiograph revealed an inverted V-shaped radiopaque structure on the maxillary right and left central incisors [Figure 2]. With the above findings, a diagnosis of Type I Talon cusp in 11 and Type II talon cusp in 21 was given. The extent of pulp tissue into the cusp could not be determined on the radiograph. With the consent of the parents, after oral

prophylaxis, pit and fissure sealant was applied, and the patient was recalled for follow-up.

### Discussion

Talon cusp is a rare entity more frequently affecting the maxillary permanent incisors and rarely affecting the mandibular and primary incisors.<sup>[3]</sup> This condition resembles the same as that of Dens Evaginatus as seen in posterior teeth.<sup>[4]</sup> The exact etiology of this condition is not known, while various genetic factors seem to have an interplay in the occurrence of this condition which in turn can lead to alteration in the morphodifferentiation stage of tooth development, resulting in out folding of enamel organ or hyperactivity of Dental Lamina.<sup>[5]</sup> It has been stated that any disturbance in the morphodifferentiation due to associated endocrine abnormality can lead to structural abnormalities of the tooth as the function of ameloblast and odontoblasts remain unaffected.<sup>[6]</sup> Thus, Talon cusp can occur in isolation or along with other associated dental anomalies such as mesiodens, odontome, unerupted or impacted teeth, peg-shaped maxillary incisors, dens invaginatus, cleft lip and distorted nasal alae, fusion, gemination, supernumerary teeth, and enamel clefts. A strong correlation between the occurrence of talons cusp and associated gene defect has also been stated where it is found associated with systemic conditions such as Sturge-Weber Syndrome, Ellis-van Creveld Syndrome, Incontinentia Pigmenti, Oro-facial Digital II, and Rubinstein-Taybi Syndrome.<sup>[3,7-9]</sup>

As described earlier, this lesion usually presents similar to that of an eagle's Talon. It is composed of enamel and dentin



Figure 1: Type I Talon cusp in 11 and Type II Talon cusp in 21



Figure 2: IOPA showing prominent Talons cusp in 11 and Talons cusp in 21

while a few states the presence of small amount of pulp tissue also within the cusp, the extent of which is difficult to determine due to superimposition of the tooth structure as in radiographic examination.<sup>[10]</sup> Radhika *et al.*<sup>[6]</sup> reported a male-to-female ratio of 47:26 among 73 cases reported in the literature.<sup>[11]</sup> Most reported cases of Talon cusp are located in the permanent dentition. Usually, it occurs unilaterally, but bilateral cases, including multiple and double Talon cusps, have also been reported.<sup>[5]</sup> In the present case, no other associated anomaly was appreciate.

Since Talon cusp tends to show a varied presentation with its size, shape, and location, Hattab *et al.* formulated diagnostic criteria.

- Type 1: Talon - refers to a morphologically well-delineated additional cusp that prominently projects from the palatal (or facial) aspect/surface of a primary or permanent anterior tooth and extends at least half the distance from the cemento-enamel junction to the incisal edge.
- Type 2: Semi talon - refers to an additional cusp of a few millimeter extending less than half of the distance from the cemento-enamel junction up to the incisal edge. It may blend with the palatal surface or stand away from the rest of the crown.

- Type 3: Trace talon - an enlarged or prominent cingulum and their variations, i.e. conical, bifid, or tubercle-like.

Radiographically, it may appear typically as a V-shaped radiopaque structure, as in case of true talon or semi-talon, or can be tubercle-like, as in trace talon, originating from the cervical third of the root. The radiopaque V-shaped structure is superimposed over the normal image of the crown of the tooth. This appearance varies in accordance with the shape and size of the cusp, and the angle at which the radiograph is taken.<sup>[12]</sup> Our case consists of Type I Talon in relation to 11 and Type II talon in relation to 21.

Smaller Talon cusps are usually asymptomatic and does not cause much dental problems compared to that of large Talon cusps which can lead to problems in occlusion, development of dental caries, speech, and esthetics.<sup>[13]</sup> As mentioned earlier, these Talon cusps can be associated with syndromic conditions, thereby a proper record of family history is essential to rule out future complications.

Further, treatment of associated dental complication is inclusive of esthetic management involving grinding of the Talons cusp, fissure sealing and composite resin restoration may be necessary. Orthodontic management may be necessary in case of tooth displacement or malalignment of the same or opposite tooth.<sup>[5,14,15]</sup> The treatment modalities and preventive strategies so planned should revolve around the future complications or associated systemic diseases.

## Conclusion

Any minor dental anomaly might be a mirror of a syndromic condition; Overall study of a characteristic clinical sign can thus provide a wider view. Therefore, revolving around the same ancient concept of treating, only the clinical condition so present should be ruled out. Talons cusp is one such dental entity associated with various syndromic conditions, and therefore, careful speculation is essential.

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