

# Talon Cusp in a Primary Lateral Incisor Associated with Supernumerary Permanent Successor

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## ABSTRACT

A talon cusp is an uncommon anomaly in the primary dentition (10%) as compared to the permanent dentition (90%). Since it was first reported in 1977, there have been only 37 documented cases in normal children. Most cases involve the primary maxillary central incisors, and very few cases involve primary maxillary lateral incisors. Here, we present a rare case report of a 10-year-old child who had talon cusp on deciduous maxillary right lateral incisor associated with supernumerary permanent successor. The tooth with talon cusp was extracted and the underlying supernumerary permanent successor erupted in the oral cavity. The patient was kept on recall to conservatively manage the supernumerary tooth.

**Keywords:** Talon cusp, supernumerary permanent successor, lateral incisor

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## INTRODUCTION

The talon cusp, or dens evaginatus, of anterior teeth is a relatively rare developmental anomaly characterized by the presence of an accessory cusp-like structure projecting from cemento-enamel junction of the maxillary or mandibular anterior teeth in both the primary and permanent dentition [1]. This unusual dental anomaly was first described by Mitchell in 1892. It was thereafter named a talon cusp by Mellor and Ripa due to its resemblance to an eagle's talon. The first report of a talon cusp in the primary dentition of a non-cleft lip and / or palate patient was published in 1977.

The prevalence of talon cusp varies considerably among populations, ranging from 0.06% to 7.7% [2]. The permanent teeth are affected three times more frequently than primary teeth. Almost 92% of the affected (taloned) teeth in the permanent dentition have been found in the maxilla, with the lateral incisors being the most frequently involved (55%) followed by the central incisors (36%) and the canines. There is a wide variation in the size and shape of this anomaly. Due to this variation, and in order to have diagnostic criteria, it has been classified into three types by Hattab FN, Yassin OM, Nimri KS[3].

**Type 1:** Talon-refers to a morphologically well delineated additional cusp that prominently projects from the palatal (or facial) 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 millimeter or more extending less than half the distance from the cemento-enamel junction 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 cingula and their variations, i.e. conical, bifid or tubercle-like. This anomalous structure is composed of normal enamel and dentin and either has varying extensions of pulp tissue into it or is devoid of a pulp horn.

Familial trend and the association of the talon cusp with other dental abnormalities suggests that genetics may be a causative factor. However, sporadic occurrences of this abnormality probably are induced by trauma or other localized insults affecting the tooth germ.

Radiographically, it may appear typically as a V-shaped radiopaque structure, as in true talon or semi-talon, or 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. The point of the 'V' is

appearance varies with the shape and size of the cusp, and the angle at which the radiograph is taken.

We present here a case of 10-year-old female child with talon cusp on deciduous maxillary right lateral incisor along with supernumerary permanent successor. Treatment was carried out by extraction of deciduous maxillary lateral incisor associated with talon cusp. After six months, the supernumerary permanent successor erupted in the oral cavity and periapical radiograph was taken to confirm its eruption. The patient was kept under observation till all the permanent teeth erupted for conservative management of supernumerary tooth. So, this case is rare as talon cusp is present in deciduous dentition along with associated supernumerary permanent successor.

### CASE REPORT

A healthy looking 10-year-old child presented to GianSagarDental College and Hospital for the purpose of a routine dental checkup. She did not present any significant medical history. Oral examination showed a fair oral hygiene, no carious lesion, mixed dentition, and talon cusp on deciduous maxillary right lateral incisor. The talon cusp was pyramidal in shape and located on the mesial half of the crown, with the tip of the cusp attached to the crown (Figure 1). There was no family history of such dental anomaly. The affected tooth responded normally to electric and thermal pulp tests. A periapical radiograph (Figure 2) showed a V-shaped radiopaque structure superimposed on the image of the affected crown, with the point of the "V" toward the incisal edge. The taloned tooth had a single enlarged pulp chamber, one root, and bifid crown appearance. The cusp projected from the cemento enamel junction and curved towards the incisal edge of the incisor. The extent of pulp tissue into the cusp could not be determined on the radiograph. A diagnosis of Type 1 talon cusp was made. Occlusal view confirmed the presence of talon cusp on the primary maxillary lateral incisor associated with supernumerary permanent successor (Figure 3). The deciduous maxillary lateral incisor associated with talon cusp was extracted since it was causing occlusal interference, which caused the attrition of the tip of the cusp of the opposing mandibular incisor. After six months, the supernumerary permanent successor erupted in the oral cavity (Figure 4) and periapical radiograph was taken to confirm its eruption (Figure 5). The patient was kept under observation till all her permanent teeth erupted for conservative management of supernumerary tooth.

### DISCUSSION

Reports with talon cusp on maxillary deciduous lateral incisor associated with supernumerary permanent successor are rare in literature. It is more common in the permanent dentition, (75%) than in the primary dentition, while 92% affect the maxillary teeth. The maxillary lateral incisor is the most frequently affected in the permanent dentition while the maxillary central incisor is the most affected in the primary dentition [4]. In this case, talon cusp occurred on deciduous maxillary lateral incisor which is a rare occurrence. The patient in this report also did not give a history of its occurrence in any member of her family. In a literature described by Chen RJ, Chen HS, a total of ten cases of talon cusp in the primary dentition are reported [5]. The dental anomaly affected only maxillary primary central incisors, and no succedaneous teeth were affected. None of the ten cases were associated with any abnormal development syndrome.

This case is also rare, as talon cusp is present in deciduous dentition along with associated supernumerary permanent successor.

Study done by Chun Kei Lee, Edward- Man Lo, Nigel Martyn - King, Shiu- Yin Cho in 2007 showed that when there is a talon cusp on a primary maxillary lateral incisor, a high proportion of the underlying permanent successors can be expected to exhibit odontogenic abnormalities [6].

The presence of a talon cusp is not always an indication for dental treatment unless it is associated with problems such as compromised aesthetics, occlusal interference, tooth displacement, caries, periodontal problems, or irritation of the soft tissues during speech or mastication. Occlusal interference can damage the periodontium, cause infra-occlusion of the opposing tooth and also temporomandibular joint pain. Severe attrition or fracture of the enamel surface can cause exposure of the dentine-pulp complex and, consequently, pulp necrosis [6]. In this case, the cusp was prominent and sharply defined and projected from the cervical region to the incisal edge of the tooth. This resulted in occlusal interference, which caused attrition of the tip of the cusp of the opposing mandibular incisor. Therefore, the tooth was extracted and the patient was kept on recall. It is necessary, thus, to evaluate and treat talon cusp soon after eruption to prevent these complications.

Early diagnosis of talon cusp is important and in most cases definitive treatment is needed. Deep non carious development grooves on the lateral aspect of the anomalous cusps should be cleaned with slurry of pumice acid etched and sealed

with fissure sealant. If the grooves are carious, the lesion should be removed and the cavity obturated with glass ionomer restorative material. In case of premature contact and occlusal interference, the talon cusp should be reduced gradually on consecutive visits over six-eight week intervals to allow time for deposition of reparative dentin for pulp protection. After each grinding procedure, the tooth surface should be covered with a desensitising agent.

The aim of this paper is to increase the awareness about the anomaly prior to eruption, so that it is not mistaken for a supernumerary tooth. This problem is especially significant because the maxillary incisor region is also the principal site of supernumerary teeth. When encountered on an erupted tooth, it is recommended that the groove between the cusp and the tooth be prophylactically restored to prevent caries at this susceptible area. If the anomaly interferes with occlusion it must be removed. This inevitably results in exposure of pulp tissue, requiring subsequent endodontic therapy. Talon cusp is an unusual and relatively rare anomaly. Since its presence usually demands that definitive treatment be instituted, it represents a problem of clinical significance rather than being merely a dental oddity.

### CONCLUSION

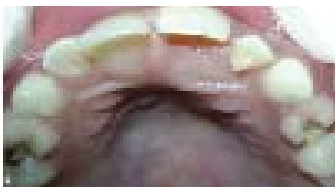
Talon cusp is an unusual and relatively rare anomaly. Reports with talon cusp on maxillary deciduous lateral incisor associated with supernumerary permanent successor are rare in literature. It is more common in the permanent dentition (75%) than in the primary dentition, while 92% affect the maxillary

teeth. The maxillary lateral incisor is the most frequently affected in the permanent dentition while the maxillary central incisor is the most affected in the primary dentition. In this case, talon cusp occurred on deciduous maxillary lateral incisor along with supernumerary permanent successor, which is a rare occurrence.

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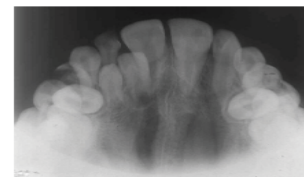
**Figure 1.** The incisal aspect of the deciduous maxillary left lateral incisor showing talon cusp palatally



**Figure 2.** Intraoral periapical radiograph of deciduous maxillary left lateral incisor associated with a supernumerary tooth attached to unerupted permanent lateral incisor.



**Figure 3.** Occlusal view revealing the presence of talon cusp on deciduous maxillary left lateral incisor with a supernumerary tooth attached to unerupted permanent lateral incisor.



**Figure 4.** Six months after eruption of permanent lateral incisor along with supernumerary teeth in the oral cavity.



**Figure 5.** Intraoral periapical radiograph confirming the eruption of permanent lateral incisor along with supernumerary teeth in the oral cavity

