



Tooth with Claw: An atypical existence in primary mandibular lateral incisor

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ABSTRACT

The term talon cusp defines a wide variety of accessory cusp-like structures, ranging from an enlarged cingulum to a well-delineated anomalous cusp, reported mainly on the permanent dentition, and very rare in the primary dentition. In primary dentition, maxillary central incisors are most commonly affected by this anomaly. This is a rare case report of a 4-year-old female patient with a talon cusp affecting the mandibular primary lateral incisor.

Keywords: Indian population, primary lateral incisor, rare occurrence, talon cusp

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Introduction

Dental anomalies comprise a large number of disorders, the symptoms of which include changes in shape, number, structure and dental eruption. The talon cusp is a dental anomaly with an accessory cusp projecting from the cingulum area or cemento-enamel junction of the maxillary or mandibular anterior teeth. Talon cusps vary in shape, size, and relationship to the incisal edge depending on their projected extension (1).

The talon cusp originates during the morpho-differentiation stage of tooth development as a result of outward folding on inner enamel epithelial cells and transient focal hyperplasia of the peripheral cells of mesenchymal dental papilla. Although several hypotheses have been proposed, the etiology of this condition remains unclear (1). Radiographically, it may appear typically as a v-shaped radiopaque structure, or be tubercle-like, 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 inverted in mandibular cases (2).

It is more commonly found in permanent dentition than deciduous dentition. Mitchell reported the first case of Talon cusp in 1892 in

maxillary permanent incisor, and described it as "process of horn shape curving from the base downward to the cutting edge". Mallor and Ripa coined the term talon cusp as "it resembles an eagle's talon in shape". Handerson reported the first case of talons cusp in a deciduous maxillary central incisor of a 4-year-old Philipino girl (3). A few occurrences of this anomaly are reported in Indian population (4,5). Prevalence of talon cusp is highest among the permanent maxillary central incisors, followed by permanent maxillary central incisors (6).

Talon cusps can cause numerous clinical problems. Compromised aesthetics, caries, pulpal necrosis, soft tissue irritation, occlusal interference, attrition, apical periodontitis or periodontal problems (1,6). The developmental grooves present between the Talons cusp and the palatal surface of the tooth can harbor microorganisms and lead to future caries. Management of talon cusp depends on clinical presentations and complications of the individual case (6).

This article discusses about occurrence of talon cusp on the lingual aspect in the primary mandibular lateral incisor of a 4-year old female patient and adds on to the existing pool of cases in Indian population.



Figure 1. Talon cusp with respect to tooth number 82 (blue arrow).

Case-report

A 4-year old female patient was reported to the dental office with a chief complain of tooth discoloration in the upper front teeth. There was no relevant medical or dental history. She was born as a healthy child to non-consanguineous parents at full term. No significant findings were elicited in general physical examination. Clinical examination revealed presence of dental caries on 52 and 62 teeth. Also, a conical projection, suggestive of a talon cusp was seen with respect to 82 extending from the cervical region (Figure 1).

As the patient had no associated problems with the talon cusp, no treatment was done with respect to tooth number 82. Caries excavation and restorative procedure were done with respect to tooth no 52 and 62. This was followed by application of topical fluoride and the patient was recalled after every 3 months interval.

Discussion

Talon cusp has been reported to be three times more common in the permanent than the primary dentition. Hence it is not surprising to have rare reports mentioning its prevalence in the primary dentition. The etiology and development of talon cusps still remains uncertain, but it is suggested to be a coalescence of genetic and environmental factors. It is also suggested that disturbances during morpho-differentiation like altered endocrine function might affect the shape and size of the tooth (7). It is defined as an additional cusp that predominantly projects from the lingual surface of primary or permanent anterior teeth, is morphologically well-delineated, and extends at least half the distance from cemento-enamel junction to the incisal edge. It has also been proposed that the talon cusp results from failed separation of a group of hyperactive cells that proliferate from the primordial cell. The hyperactivity of the primordial cells is genetically determined, but the degree of hyperactivity is influenced by environmental factors (8). Due to variation in

size and shape, and for diagnostic ease, Hattab *et al*, (9) classified Talon cusp in 3 types; (i) 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; (ii) 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; and (iii) Trace talon - An enlarged or prominent cingula and their variations, i.e., conical, bifid or tubercle-like. Under this classification, we grade our case as a Type 2 talon cusp.

Archaeological cases have potential to contribute to our understanding of traits that are rare in modern populations, such as talon cusps. Sawyer *et al.*, reported the first case, which they found in the archeological remains of prehistoric times (10). Since then a few more case reports have been reported in literature, of them one being in the archeological remains of a period of AD 950-1350 of a 5-year-old child (11).

In 1999, the first case of talon cusp extending to the middle third of the crown on a primary mandibular left lateral incisor in an Indian population was reported. The talon cusp is more frequently observed in Asian population (11). In Chinese population it was reported that the prevalence of this anomaly was similar in primary and permanent teeth (12). Among Saudi children the prevalence was only 1.4% (13). Similar findings can be explored in the Indian population as in the current case it had been observed during clinical evaluation and not reported by the parent.

Clinical findings along with the patient's complaints both aid in chalking the management of the talon cusp. Small talon cusps are usually asymptomatic and can be left untreated. Large talon cusps may cause

discomfort to the patient as they may interfere in occlusion, irritate the tongue during speech and mastication, displacing affected tooth, development of caries in the developmental grooves, necrosis of pulp, periapical pathosis, attrition of opposing tooth, and periodontal problems due to excessive occlusal forces. Early intervention is warranted where the talon cusp is causing aesthetic and functional problems to minimize complications (6).

Managing talon cusp is case sensitive, small asymptomatic talon cusp needs no treatment, large cusps may cause clinical disturbance to occlusion, tongue while mastication and speech, pulp by caries in the developmental grooves, attrition of the opposing tooth, periodontium due to trauma from occlusion, and fissure sealing and composite resin restoration can be carried out in cases of deep developmental grooves (7). In case of occlusal interference reducing the bulk of the cusp gradually and periodically and the application of topical fluoride, or totally reducing the cusp and performing a calcium hydroxide pulpotomy are treatments of choice (14). In severe cases, complete removal of cusp is advisable with endodontic therapy. In presence of tooth displacement or malalignment, orthodontic correction may become necessary (15).

Conclusion

Reports on the prevalence of talon cusp anomaly are mainly reported on permanent dentition. It is rarely reported in primary dentition. The occurrence of this anomaly does not always need an invasive treatment unless associated with discomfort to the patient. To avoid complications caused by the talon cusp, early diagnosis and treatment are recommended. Dentists should be cautious that there would be chances of dental anomalies being associated with permanent successor if there is talons cusp in primary tooth. In the current case, the anomaly did not cause any discomfort to the patient; hence it was left untreated, and application of fluoride as a desensitizing agent was done.

References

1. Nu Nu Lwin H, Phyo Kyaw P, Wai Yan Myint Thu S. Coexistence of true talon cusp and double dens invaginatus in a single tooth: a rare case report and review of the literature. *Clin Case Rep.* 2017;5(12):2017-2021.
2. Hamasha AA, Safadi RA. Prevalence of talon cusps in Jordanian permanent teeth: a radiographic study. *BMC Oral Health* 2010;10:6.
3. Handerson HZ. Talon cusp: a primary or a permanent incisor anomaly. *J Indiana Dent Assoc.* 1977;56(6):45-6.
4. Subba Reddy VV, Mehta DS. Talon cusp in a primary lateral incisor: Report of a case. *J Indian Soc Pedod Prev Dent* 1989;7(1):20-2.
5. Hegde S, Kumae BR. Mandibular talon cusp: Report of two rare cases. *Int J Pediatr Dent* 1999;9(4):303-6.
6. Leith R, O'Connell AC. Selective Reduction of Talon Cusps- A Case Series. *J Clin Pediatr Dent.* 2018;42(1):1-5.
7. Gupta R, Thakur N, Thakur S, Gupta B, Gupta M. Talon cusp: A case report with management for practicing dentists. *Dent Hypotheses* 2013;4:67-9.
8. Lee CK, King NM, Lo EC, Cho SY. The relationship between a primary maxillary incisor with a talon cusp and the permanent successor: a study of 57 cases. *Int J Paediatr Dent* 2007;17(3):178-185.
9. Hattab FN, Yassin OM, al-Nimri KS. Talon cusp in permanent dentition associated with other dental anomalies: Review of literature and reports of seven cases. *ASDC J Dent Child* 1996;63(5):368-76.
10. Sawyer DR, Allison MJ, Pezzia A. Talon cusp: a clinically significant anomaly in a primary incisor from pre-Columbian America. *MCVQ* 1976;12:64-66.
11. Mays S. Talon cusp in a primary lateral incisor in a Mediaeval child. *Int J Paediatr Dent* 2005;15(1):67-72.
12. Chen RJ, Chen HS. Talon cusp in primary dentition. *Oral Surg Oral Med Oral Pathol* 1986;62(1):67-72.
13. Yassin SM. Prevalence and distribution of selected dental anomalies among saudi children in Abha, Saudi Arabia. *J Clin Exp Dent.* 2016;8(5):e485-e490.
14. Pledger DM, Roberts GJ. Talon cusp: Report of a case. *Br Dent J* 1989;167:171-3.

15. Segura JJ, Jiménez-Rubio A. Talon cusp affecting permanent maxillary lateral incisors in 2 family members. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1999;88(1):90-2.

