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Rare Case of Talon Cusp in a Geminated Primary Right Lateral Incisor - A Case Report

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Abstract

Aim: To report a rare case of primary lateral incisor with Talon's cusp and gemination.

Background: Developmental anomalies are a rare finding in primary dentition. Of these to find two dental anomalies in a single tooth is sparse. Gemination and talons cusp has been reported in permanent and primary dentition, but only a few case reports are there of a geminated primary maxillary lateral incisor with talon's cusp.

Case Description: A 5-year-old boy with a geminated primary maxillary lateral incisor with talon cusp. Talon cusp was reduced and pit and fissure sealants were placed in the grooves on palatal side and buccal surface was restored with composite.

Conclusion: Dental anomalies should always be identified and treated promptly to reduce the complication arising out of the anomaly.

Clinical Significance: There exists only one case report of a primary maxillary lateral incisors in the literature at present as far as we are aware this is the second case of such a finding.

1. Introduction

Developmental Dental Anomalies are abnormalities in teeth number, size, shape, structure and position [1]. The occurrence of these anomalies is very rare in primary dentition in comparison to the permanent dentition [2].

Talon Cusp as the name suggests is similar to the shape of talon of an eagle when viewed occlusally, it's an accessory cusp like projection which is seen mainly in lingual surface of incisor it extends at least half the distance from CEJ to the incisal edge [1,3]. Described by Mitchell in 1892, it was named as Talon Cusp in 1970 by Mellor and Ripa due to its resemblance to the talon of eagle but it can also occur pyramidal, conical and treat-like [4]. Its also called as Supernumerary Cusp, hyperplastic cingulum, cusped cingulum and supernumerary lingual tubercle [5]. The prevalence of talon cusp in Indian population is 0.58% with more predilection to maxillary lateral incisors (55%), and most of the cases were noted in permanent dentition. And the prevalence reported in Deciduous dentition in Indian population is less than 3.22% [1].

Talon cusp is also seen to be associated with other dental anomalies like peg shaped lateral incisors, dens invaginates, supernumerary teeth, odontomas [5]. Talon cusp with gemination of the tooth of concern is very rare finding with only 6 cases of such tooth reported in literature as of now [6] and only one case reported in primary dentition [3]. Gemination is defined by Tannenbaum and Alling as formation of the equivalent of two teeth from the same follicle, with evidence of an attempt for teeth to be completely separate, this is indicated by a groove or depression which could delineate the tooth. The prevalence of geminated teeth in Indian population ranges from 0.5% to 2.5% [7].

The aim of this case is to report a rare case of primary lateral incisor with Talons cusp and gemination.

2. Case Description

A 5-year-old boy visited the Department of Pedodontics and Preventive Dentistry, Malabar Dental College and Hospital, Edappal with a chief complaint of food lodgment in maxillary left upper back region of jaw. The medical history was noncontributory, there was neither family history of dental abnormalities and nor parental consanguinity.

On Clinical examination the patient had proximal caries with respect to 54, 64,74 and 84 and pit and fissure caries were seen with respect to 55 and 65. The primary right lateral incisor had a wider crown with talon cusp which was very sharp and extended till the incisal third, it was conical and sharp and a deep groove in the buccal surface extending from incisal third to cervical third (FIG. 1 & 2).

FIG. 1. **Pre Operative Germination.**

FIG. 2. **Pre Operative Talons Cusp.**

On radiographic examination a “V” shaped radio-opaque structure was seen extending from cementoenamel junction to the incisal edge superimposed on the right lateral incisor. The pulp chamber was large and bifid (FIG. 3).

FIG. 3. **Radiograph of 52.**

The talon cusp was Type I (Talon) according to the classification of Hattab et al. i.e. additional cusp projecting from palatal surface of anterior extending at least one half the distance from Cementoenamel junction to the incisal edge [8]. And the Aguiló et al., the gemination of Lateral Incisor was classified as a Type I i.e. a single bifid larger than normal crown with a notch on the incisal edge with a bifid pulp chamber with normal sized root and radicular canal with widening in cervical portion [9].

3. Therapeutic Intervention

The caries were removed and GIC restoration was done with respect to 54,55,74 and 84. With respect to 64 Dycal was placed followed by GIC restoration.

In 52 on the buccal surface minimally invasive technique was used and was restored with composite restoration. Pit and fissure sealants were placed in the grooves on either side of the talon to prevent occurrence of caries. Since the talon was interfering with the occlusion it was reduced in a phased manner to encourage formation of reparative dentin.

As the child fell into the category high caries risk fluoride application and diet counselling was done as a part of preventive protocol. The patient is under periodic recall for follow- up (FIG. 4, 5 & 6).

FIG. 4. **Aesthetic masking of 52.**

FIG. 5. **Post Operative.**

FIG. 6. **Minimal Invasive management of 52.**

4. Discussion

The etiopathogenetic of talon cusp is multifactorial including both genetic and environmental factors. The most accepted theory for talon cusp is the outward folding of inner enamel epithelium and focal hyperplasia of dental lamina [8]. According to Mellor and Ripa talon cusp may cause problems with aesthetics, caries, occlusal trauma, it may also cause irritation to tongue during speech and accidental cusp fracture, temporomandibular joint issues [10]. The extension of talon is composed of enamel and dentin and either has varying extension of pulp tissue into it or devoid of pulp horn [11]. The treatment protocols depend on the size of talon and functional interferences its causing [10]. The deep vertical palatal fissures on either sides of talon can be a site for plaque retention and can subsequently lead to caries if discovered during the initial stages it can be treated with pit and fissure sealants, composite restorations etc [6,10]. If the occlusal interferences are present the talon can be reduced by intermittent grinding followed by fluoride or a remineralizing agent to allow formation of reparative dentin to avoid pulp exposure [12]. In cases where the pulp is involved due to extensive caries endodontic therapy is recommended [6,12].

Gemination is due an attempt at division of developing tooth bud resulting in incomplete formation of two teeth. The crown of the geminated tooth shows a low deep groove extending from the incisal to cervical area [13]. This anomaly can lead unpleasant aesthetics and when grooves are deep can lead to increased susceptibility to caries and periodontal diseases due to plaque accumulation sub gingivally if the groove extends gingivally [7,13]. When noticed at an early-stage local fluoride application can be done followed by placement of pit and fissure if the grooves are shallow. If the grooves are deep and is of aesthetic concern to the patient a composite restoration can be done or in cases where there is pulp involvement endodontic therapy can be done followed by prosthetic rehabilitation [13].

5. Clinical Significance

Gemination is more common in primary when compared to permanent and the prevalence of talon cusp is more common in permanent [13] hence the above case report is of its kind due to peculiar nature of its presentation of geminated primary maxillary right lateral incisor with talon cusp. Like the saying stich in time saves nine identification and treatment of any dental anomalies before any complication occurs is the but treatment protocol arising out of becomes one of the best treatment protocols for such cases.

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