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RESEARCH ARTICLE

MAXILLARY TALON CUSP IN PRIMARY LATERAL INCISOR – A CASE REPORT.

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Abstract

Talon cusp is a rare developmental anomaly that occurs predominantly on palatal surface of maxillary incisors with varied prevalence in different populations. Its presence causes the problem in esthetics, prevention of caries and occlusal accommodation for the patient and problems in the diagnosis and clinical management for the dentist. This article reports a case of talon cusp on the palatal surface of the primary maxillary lateral incisor in a three year old girl patient.

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Introduction:-

A talon cusp is a dental anomaly commonly occurring in the permanent dentition compared to the primary dentition and shows a predilection for maxilla over the mandible. It is a supernumerary structure projecting from the dentoenamel junction to a variable distance toward the incisal edge of an anterior incisor tooth. Mitchell first described this anomaly as a “process of horn like shape, curving from the base downwards to the cutting edge” on the lingual surface of a maxillary central incisor. Due to its resemblance to an eagle’s talon it is named as talon cusp by Mellor and Ripa¹.

The exact etiology is not known, but it is suggested to be a combination of genetic and environmental factors. It is thought to arise during the morphodifferentiation stage of tooth development, as a result of out folding of the enamel organ or hyper productivity of the dental lamina.² It is also suggested that disturbances during morphodifferentiation such as altered endocrine function might affect the shape and size of the tooth without impairing the function of ameloblasts and odontoblasts. The anomalous talon cusp is composed of normal enamel and dentin with varying extension of pulp tissue³.

With regard to tooth affinity only central incisors are involved in the primary dentition and the maxillary lateral incisor is most often affected in the permanent dentition (67%) followed by central incisors (24%) and canines (9%) and the overall prevalence ranging from 0.66 to 7.7%.⁴ The total number of reported cases in the primary dentition worldwide is less and most of them are males. Very limited cases only reported from the Indian population. This article adds one more case to the existing pool of cases in primary dentition.⁵

Case Report:-

A three year old girl child belonging to the low socioeconomic group reported to the Department of Pedodontics for a routine dental check-up. The medical and familial history are non-contributory. The extraoral findings were not significant and intraoral findings revealed with well aligned intact primary dentition. A proximal talon cusp was

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visible on the palatal surface of the right maxillary primary lateral incisor. No other anterior tooth had this projection. Occlusion was normal and there was no interference on closure. The involved incisor on closer examination was found to be morphologically different from its antimere with a concavity present on the lateral surface corresponding to the projection on the palatal side giving it a piller back appearance along with a sagged 'U' shaped incisal edge, an intraoral radiograph revealed the pulp horn extending to nearly half the length of the talon's cusp. No treatment was rendered apart from sealing the sides of the talon cusp with a fissure sealant.



Fig – 1:- Talon cusp on the palatal surface of 52.



Fig – 2:- Talon cusp seen on the palatal surface of right maxillary primary lateral incisor.

Discussion:-

Talon cusp 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.⁶ It has been suggested that a talon cusp might occur as a result of an outward folding of the inner epithelial cells and transient focal hyperplasia of the mesenchymal dental papilla. It has also been proposed that the talon cusp results from failed separation of a group of hyperactive cells that proliferate from the primordial cells. The hyperactivity of the primordial cells is genetically determined, but the degree of hyperactivity is influenced by environmental factors.⁷ It has been suggested that improper actin between ectoderm and mesoderm during the odontogenesis process on epithelial bulging may be the etiological factors for the formation of talon cusp.⁸

The first reported case in primary dentition is by Sawyer et al in 1976, found in the archaeological remains of prehistoric times. Since then nearly 39 more case reports have been published, one of them being present in the archaeological remains of a five year old child in UK dating back to the period AD 950-1350. This first clinical case in the primary dentition was reported by Henderson in 1977 in a four year old Filipino girl.⁹

This abnormality has been more frequently reported in Asian population based on the clinical experience. Chen and Chen stated that, there does not appear to be a difference in the prevalence of talon cusp in the primary and permanent teeth in the Chinese population. This point is worth noting as its prevalence in primary dentition in the Indian population may also be more than reported. In the present case too, it had not been observed by the parent and had got noticed during a routine clinical examination.¹⁰

Radiographically the talon cusp is visible as a radiopaque structure. Most authors reported the talon cusp to be composed of normal enamel, dentin and pulp. Individuals with talon cusps on a deciduous maxillary later incisor showed a high proportion of odontogenic abnormalities in the permanent successor.¹¹ However in our case there was no abnormal finding seen in the permanent tooth buds. Small talon cusps are usually symptomatic and need no treatment. Large talon cusps may cause occlusal interference, irritation of the tongue during speech and mastication, displacement of the affected tooth, carious lesion in the developmental grooves delineating the cusp, pulp necrosis, periapical pathosis, attrition of opposing tooth and periodontal problems due to excessive occlusal forces.¹²

The treatment of a talon cusp is dependent upon whether the cusp contains a pulp horn or not. However radiographic view is inherently difficult in tracing pulpal configuration inside the talon cusp because the cusp is superimposed over the affected tooth crown.¹³

Early diagnosis and definitive treatment always necessary to prevent complications and simple prophylactic measures such as fissure sealant is done in the present case. However the management depend upon size, complications and patients compliance.¹⁴

Conclusion:-

Talon cusp is not an innocuous defect, as it may provide a substantial challenge during diagnosis and treatment planning. Role of Pediatric dentist is utmost important in early diagnosis to minimize or prevent complication and also recommended not only to improve aesthetics but also to restore the functional occlusion, prevent caries formation, and preserve the vitality of the affected tooth.

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