

## AN UNUSUAL CASE OF TALON CUSP ON FUSED TEETH – A RARE CASE REPORT

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**ABSTRACT:** Talon cusp is morphologic-ally well-delineated additional cusp that prominently projects from the palatal surface of primary or permanent anterior teeth and extends at least half the distance from the cemento-enamel junction to the incisal edge. Fusion is the union of two adjacent normal tooth germs at the level of dentin during development. The association of Talon cusp with fused teeth is not an isolated trait. The aim of this case report is to present same unusual case of Talon cusp on fused primary maxillary incisors emphasize the importance of early diagnosis to avoid complication related with this condition.

**KEYWORDS:** Maxillary Primary Incisors, Dental anomalies, Talon cusp, Dental Fusion.

### INTRODUCTION

Talon cusp is an uncommon developmental dental anomaly in which an accessory cusp like structure is thought to arise as a result of evagination on the surface of a tooth crown before calcification has occurred<sup>1</sup>. The first case was reported by Mitchell in 1892 on the lingual surface of a maxillary central incisor who described it as a process of horn like shape curving from the base downward to the cutting edge. It was thereafter named a Talon cusp by Mellor and Ripa<sup>2</sup>. The exact etiology is not known, but it is suggested to be a combination of environmental and genetic factors. It can occur both in primary and permanent dentition, but more often affected in permanent dentition<sup>3</sup>.

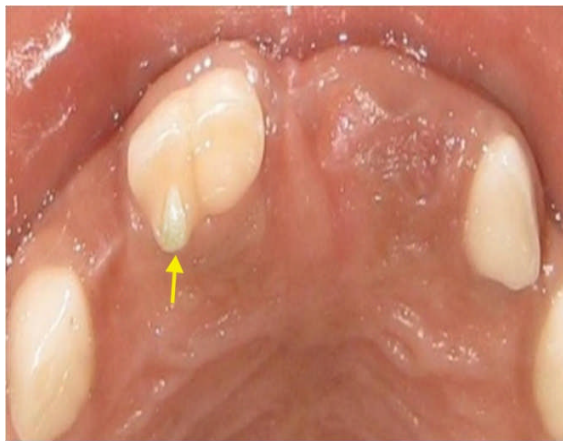
Fusion is a rare developmental disorder characterized by the union of two adjacent teeth at the crown level enamel and dentin causing the formation of a tooth within an enlarged clinical crown. Incidence of this anomaly is approximately 0.9% in deciduous and 0.1% in the permanent dentition<sup>4</sup>. Fusion may be partial or total, depending on the stage of tooth development at the time of union. A fused tooth usually has two separate root canals and a single wide crown. Clinically the crowns of the teeth appear to be melded together with a small groove between the mesial and distal section.<sup>5</sup> The etiology of fusion is still unknown but the influence of pressure or physical force producing close contact between two developing teeth has been reported as one possible cause. Genetic predisposition and racial differences have also been reported as contributing factors<sup>6</sup>.

This defect in tooth development may be hereditary, systemic or local factors or can be idiopathic<sup>7</sup>. During tooth development there must be primary developmental deviation of the teeth whereby a double tooth forms. The term double teeth, joined teeth, fused teeth and twinning typically describe three distinctly different types or malformation that alter the appearance of teeth gemination, fusion and conrescences<sup>8</sup>.

One of the special cases of talon cusp on a maxillary primary fused tooth is being reported here.

### Case report:

A 7 year old male child reported for routine dental checkup and the medical and dental histories were non – contributory. On Clinical and radiographic examination, talon tubercle existing on the fused maxillary central and lateral deciduous incisors had been determined. There were no positive findings for systemic condition and other members of his family did not have such a dental abnormality. On examination, it also revealed fused primary maxillary right central and lateral incisors with pronounced cusp like structure projecting from the cingulum area. The anomalous cusp neither irritates the tongue during speech and mastication nor interfere with occlusion. Intraoral Periapical radiograph revealed ‘V’ shaped radioopaque structure with separate enamel and dentin in relation to primary maxillary right central and lateral incisors with more than two third of root resorption



**Fig.1. Clinical Picture showing talons cusp in 52**



**Fig.2. Clinical picture showing fused teeth in 51 and 52**



**Fig.3. IPOA of 52 reveals cusp seen overlying central portion of tooth including enamel and dentin**

but pulp extension could not traced. Based on clinical and radiographic findings the final diagnosis of Talon cusp within fused primary incisors was made. As teeth did not pose any significant clinical problems corrective treatment was not instituted.

**Discussion:**

Talon cusp is an uncommon odontogenic anomaly comprising of an accessory cusp like structure, more commonly seen on the palatal surface of the maxillary incisor. Clinical studies suggest frequencies ranging from less than 1% to 8% human population<sup>8</sup>. Other names for this odontogenic anomaly are tuberculated premolar, odontome of the axial core type, dens evaginatus, interstitial cusp, evaginated odontome, occlusal anomalous tubercle, occlusal enamel pearl<sup>9</sup>.

Small talon cusps are usually asymptomatic, but large one leads to clinical complications like cusp fracture, displacement of the taloned tooth, caries susceptible developmental groove, poor esthetics, occlusal interference, attrition causing pulpal exposure on periapical pathology, breast feeding problems and Temporomandibular joint pain<sup>10,11</sup>.

Talon cusp may associated with other dental anomalies like peg laterals, unerupted canine and mesiodens, supernumerary teeth, megadont, dens invaginatus, complex odontome and impaction, hypodontia, partial anodontia, malocclusion, shovel-shaped incisors and exaggerated carabelli cusp<sup>12</sup>.

Syndromes associated with talon cusp are Rubinstein – Taybi syndrome, Sturge Weber syndrome, EllisVan Creveld syndrome, Mohr syndrome and incontinentia pigmenti achro-mions<sup>13</sup>. As like other dental anomalies, talons cusp occurs during early odontogenesis period i.e. during the morphodifferentiation. It results with outward folding of the inner enamel epithelial cells and a transient focal hyperplasia of the mesenchymal dental papilla. The disturbances during morphodifferentiation might affect the shape and size of the tooth without impairing the function of ameloblasts and odontoblasts<sup>5</sup>.

The difficulty of deciding whether a tooth is fused or geminated and proposed that these anomalies be referred to a neutral term as double teeth. Several clinical and radiographic findings are used to distinguish fusion from gemination such as morphology of the crown and the pulp chamber, location and number of teeth. Fusion is the incomplete attempt of two teeth buds to fuse into one whereas gemination is the incomplete attempt of one tooth bud to divide into two. Clinically gemination results in bifid crown with the coronal halves appearing mirror images, whereas fusion takes place at an angle causing the tooth to have a crooked appearance. Radiographic examination shows two separate canals in case of fusion whereas in gemination there is usually one large conjoint root canal.

After the clinical and radiographic evaluation, the diagnosis was made as fused tooth with primary maxillary central and lateral incisors<sup>3</sup>. Asymptomatic anterior fusion should be left alone unless problems arise with esthetics, spacing and dental caries<sup>7</sup>.

The treatment of talon cusp requires careful clinical judgement, and is dependent on its size and shape. Management includes no treatment, sequential grinding, pit and fissure sealing, pulp therapy, restorative treatment, full crown coverage and extraction of the affected tooth<sup>13</sup>.

In this case report none of treatment option were used because there were neither premature contacts and occlusal interferences nor pathological changes. However patient was advised for routine dental checkup for monitoring periodic exfoliation of maxillary primary incisors at the age of 7 years.

### CONCLUSION

Although these dental anomalies are rare, their presence may complicate the process of daily routine oral health care. Deep grooves and pits surrounding the cusps are highly susceptible to caries and should be sealed with pit and fissure sealant. Premature contact and occlusal interference should be removed to prevent habitual posturing of the jaws. Patients should be properly informed of the potential risk factors and problems associated with these anomalies. A correct and early diagnosis of and appropriate treatment approaches to dental anomalies can minimize possible complication.

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