

LINGUAL TALON CUSP- REPORT OF 2 CASES WITH REVIEW OF LITERATURE

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INTRODUCTION

This unusual dental anomaly showing an accessory cusp-like structure projecting from the cingulum to the cutting edge 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. This odontogenic anomaly has been given several descriptions, such as, prominent accessory cusp-like structure, exaggerated cingula, additional cusp, cusp-like hyperplasia, accessory cusp and supernumerary cusp. It has been defined as a supernumerary accessory talon-shaped cusp projecting from the lingual or facial surface of the crown of a tooth and extending for at least half the distance from the cemento-enamel junction to the incisal edge.³

CASE REPORTS

A healthy looking 10 year old child presented at the dental outpatient clinic for the purpose of a dental check-up. He did not present any significant medical history. Oral examination showed a fair oral hygiene, no carious lesion, and all the permanent teeth were present. The maxillary left lateral incisor showed an accessory cusp on the palatal aspect. The cusp projected from the cemento enamel junction and curved towards the incisal edge of the incisor. There was a negative family history of such dental anomaly from the patient and there was no associated systemic disorder. Radiographic examination showed a typical V-shaped radio opaque structure superimposed over the image of the affected crown, with the point of 'V' towards the incisal edge. Two distinct white lines converging from the cervical area demarcated the cusp, and a pulpal extension could be traced towards the base of the cusp. Clinically as well as radiographically no other dental abnormality was detected. A diagnosis of type 1 talon cusp was made. The condition and the planned periodic and gradual reduction of the cusp with topical fluoride application and composite resin facing were explained to the patient.

Another patient who was 11 year old demonstrated the presence of similar accessory cusp on the palatal aspect of

left maxillary lateral incisor. He also did not present any significant medical, dental or family history. The cusp projected from the cemento enamel junction and curved towards the incisal edge of the incisor. A periapical radiograph revealed an inverted V-shaped radiopaque structure on the maxillary left lateral incisor. A diagnosis of type 1 talon cusp was made. The patient did not agree for any treatment.

DISCUSSION AND REVIEW OF LITERATURE

Talon cusp is a morphologically well delineated accessory cusp like anomalous structure projecting from the cingulum area or cemento-enamel junction, extending at least half the distance to incisal edge of maxillary or mandibular anterior teeth in both primary and permanent dentitions and which is composed of normal enamel, dentin and varying extensions of pulp tissue. Usually males show a higher frequency of occurrence of Talon cusp than females and may be unilateral or bilateral, with a predilection for maxilla over mandible and common in the permanent dentition. The most commonly involved teeth are the maxillary lateral incisor in the permanent dentition and maxillary central incisor in the primary dentition. Talon cusps can create problems like compromised esthetics, occlusal interference, displacement of the affected tooth, carious developmental grooves and pulpal necrosis, periodontal problems due to excessive occlusal forces, advanced attrition leading to pulpal exposure and periapical pathosis, irritation of the tongue during speech and mastication and interference with tongue space.

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 3 types by Hattab et al:

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.

The exact aetiology 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 outfolding of the enamel organ or hyperproductivity of the dental lamina. It is 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. There is also a suggestion of a strong genetic influence in its formation as evidenced by its occurrence in close family members.

Talon cusp may occur in isolation or with other dental anomalies such as mesiodens, odontome, unerupted or impacted teeth, peg-shaped maxillary incisor, dens invaginatus, cleft lip and distorted nasal alae, bilateral gemination, fusion, supernumerary teeth and enamel clefts. It has also been associated with some systemic conditions such as Mohr syndrome (oro-facial-digital II), Sturge-Weber syndrome (encephalo-trigeminal angiomas), Rubinstein-Taybi syndrome, incontinentia pigmenti achromians and Ellis-van Creveld syndrome.

The complications of talon cusp are diagnostic, functional, aesthetic and pathological. A large talon cusp is unaesthetic and presents clinical problems. It may present diagnostic problems if it is unerupted and resembles a compound odontome or a supernumerary tooth and so

leads to unnecessary surgical procedure. Functional complications include occlusal interference, trauma to the lip and tongue, speech problems and displacement of teeth. The deep grooves which join the cusp to the tooth may also act as stagnation areas for plaque and debris, become carious and cause subsequent periapical pathology.

Management will depend on individual presentation and complications. Small talon cusps are asymptomatic and need no treatment. Where there are deep developmental grooves, simple prophylactic measures such as fissure sealing and composite resin restoration can be carried out. An essential step, especially in case of occlusal interference, is to reduce the bulk of the cusp gradually and periodically and application of topical fluoride such as Duraphat® or Acidulated Phosphate Fluoride (APF) gel to reduce sensitivity and stimulate reparative dentine formation for pulp protection, or outright total reduction of the cusp and calcium hydroxide pulpotomy. It may also become necessary sometimes, to fully reduce the cusp, extirpate the pulp and carry out root canal therapy. Orthodontic correction may become necessary when there is tooth displacement or malalignment of affected or opposing teeth.

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FIG 1A showing accessory cusp on palatal aspect of maxillary left lateral incisor.

FIG 1B showing V shaped radiopaque structure on palatal aspect of left maxillary lateral incisor

FIG 2 showing another patient with similar accessory cusp on maxillary incisor.

