



ORIGINAL RESEARCH PAPER

Dental Science

MANAGEMENT OF A SEVERE FORM OF TYPE III TALON CUSP RESEMBLING A MAXILLARY PREMOLAR

KEY WORDS: Talon cusp

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ABSTRACT

During the stages of tooth development, tooth germ is susceptible to injury and dental anomalies. Presence of an extra cusp as a projection on lingual surface of anterior teeth in the cingulate area near the cemento-enamel junction is one of the variant of the anomalies. Talon cusps are anomalies potential to cause caries poor, aesthetics, occlusal interference resulting from tooth displacement, speech problems and irritation of the tongue during speech and mastication, periodontal problems. The treatment of talon cusp involves careful clinical judgment and is dependent upon whether the cusp contains or is devoid of a pulp horn, presence of developmental groove, extend of cusp from cemento-enamel junction towards incisal edge. Careful identification and evaluation of the cusp with the clinical and radiographic aids and selection of the treatment option that best suits for the clinical condition are important.

Introduction

During the stages of tooth development, tooth germ is susceptible to injury and dental anomalies. Any disturbance during morphodifferentiation step can affect tooth shape and size. Presence of an extra cusp as a projection on lingual surface of anterior teeth in the cingulate area near the cemento-enamel junction is one of the variant of the anomalies. In 1892 it was first described by Mitchell as an accessory cusp and later it was termed as Talon cusp because the anomaly morphologically resembles eagle talon. The etiology of this anomaly is not well defined and is suggested to be the a combination of genetic and environmental factors causing disturbance during tooth development. Talon cusp has a low prevalence ranging from 0.3-0.7%. Hence, the present case report highlighted management of a severe form of type III talon cusp.

Case report

A 21-year-old female patient reported with a chief complaint of pain in upper front tooth region since two weeks. Clinically presence of an extra cusp palatal to the right maxillary lateral incisor (Fig.1).



Intraoral periapical radiograph showed "v" shaped radioopaque structure overlapping on the crown. After administering anesthesia with lidocaine (Lidayn, Health Biotech Ltd, Solan, India) and rubber dam isolation (Hygenic, Coltene/Whaledent), access opening was done using round bur no.2 (Fig.2 and 3).



Pulp was extirpated and initially root length was measured on a preoperative radiograph using endodontic K file and confirmed using the Digital Radiovisiography (KODAK) (Fig.4).



Root canal was prepared till # 45 k file (MANI, Inc., Japan) and step back preparation was done till # 60 K file. Canal was cleaned with 3% NaOCl and care was taken that needle was kept 1 mm short of the working length and final rinse was done using normal saline. The root canal was then dried with sterile paper points. Calcium hydroxide was placed in the root canal, and the patient was recalled after one week. One week later, the tooth was again isolated under rubber dam, the calcium hydroxide dressing was removed from the canal and irrigation was done with 3% NaOCl and 17% EDTA to remove smear layer. The root canal was then dried with sterile paper points. Obturation was done with cold lateral condensation technique using AH Plus sealer (DENTSPLY) and restored with Tetric N Ceram nano composite (IVOCCLAR VIVADENT) (Fig.5).



DISCUSSION

Talon cusp is a rare dental anomaly caused due to disturbance of tooth during its developmental stages. It is also described with other names like supernumerary cusp, cusped cingulum, horn, hyperplastic cingulum, evaginated odontome, and supernumary lingual tubercle.²

Prabhu et al. done a study to find prevalence of talon cusp in Indian population, among 2740 patients, found the prevalence of talon cusp as 0.58%. More prevalence is seen in maxillary permanent lateral incisors on lingual surface, affecting more in males with bilateral involvement.³

Talon cusp sometimes occurs alone or associated with other dental anomalies, such as mesiodens, odontoma, included or impacted teeth, cleft lips, nose wing distortion, bilateral twinning, merger, supernumerary teeth, and cracked enamel. It has also been associated with certain systemic conditions including Mohr syndrome, Sturge-Weber syndrome, Rubinstein-Taybi syndrome, Bloch-Sulzberger syndrome, and Ellis-van Creveld syndrome. There are more chances of misdiagnosis as supernumerary tooth or compound odontome.⁴

The anomaly varies widely in form and size. Therefore, Hattab et al., classified talon into three groups.⁵ (TABLE 1)

TABLE 1: Showing classification of the talon cusp

Type I (talon)	An additional cusp with prominent and well-defined morphological characteristics of a talon that projects from the lingual face of a front tooth (deciduous or permanent); the talon extends above half of the clinical crown of the tooth from the cementoenamel junction.
Type II (semitalon)	An additional tip of a millimeter or more extends over less than half of the dental crown from the cementoenamel junction; these can blend with the palate surface or stand away from the rest of the crown.
Type III (trace talon or prominent cingulate)	Cases with a broad girde or prominent appearance, and the variations include the conical type, bifid and tuber.

Present case presents with a severe form of a type III talon which extends 3/4th length of the crown height almost resembling a maxillary first premolar.

Radiographically, talon is characterized by a “V”-shaped radioopaque structure that overlaps on crown of the affected tooth. It is difficult to establish pulp involvement due to the overlap of the talon, tooth crown, and main pulp chamber in the radiographic image. Although some authors have found pulp communication to the talon cusp, others have reported no evidence of pulp extension on the cusp. However, large talon cusp are more likely to contain pulp tissue.⁶ But present case do not have any pulpal extension.

Talon cusps are anomalies are potential to cause caries poor, aesthetics, occlusal interference resulting from tooth displacement, speech problems, irritation of the tongue during speech and mastication, periodontal problems.

The treatment of talon cusp involves careful clinical judgment and is dependent upon whether the cusp contains or is devoid of a pulp horn, presence of developmental groove, extend of cusp from cementoenamel junction towards incisal edge. Therefore the treatment modalities include periodic reduction of talon cusp followed by topical fluoride application, recontouring, prophylactic placement of sealants in the developmental groove and endodontic treatment in cases of pulpal exposure.⁷ Careful identification and evaluation of the cusp with the clinical and radiographic aids and selection of the treatment option that best suits for the clinical condition are important.

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