

Management of Talon Cusp Affecting the Primary Central Incisor: A Case Report

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Talon cusps are relatively rare dental anomalies that manifest as accessory cusplike structures and project from the cingulum area of the anterior teeth. The condition can occur in both the primary and permanent dentitions. However, the occurrences of anomalous cusps are rather infrequent in the primary dentition. Little has been written about the treatment of talon cusps in the primary dentition compared with their counterparts in the permanent dentition. The purpose of this article was to document the management of a patient with a maxillary primary incisor affected by a talon cusp and the long-term follow up. (*Chang Gung Med J* 2003;26:678-83)

Key words: talon cusp, primary incisor, anomaly.

Talon cusps are uncommon dental anomalies in which accessory cusp-like structures project from the cingulum area or cemento-enamel junction of the maxillary or mandibular anterior teeth in either primary and permanent dentitions.⁽¹⁻⁴⁾ The talon cusp is so called because of its resemblance to an eagle's talon. Other terminologies include dens evaginatus, interstitial cusp, tuberculated premolar, odontoma of the axial core type, evaginated odontoma, occlusal enamel pearl, occlusal anomalous tubercle and supernumerary cusp.⁽⁵⁾ Talon cusps are composed of normal enamel and dentin, which may or may not contain pulpal tissue.^(4,6,7) The exact etiology of this condition is unknown.

There are insufficient reports on the prevalence of talon cusps. Buenviaje et al reported that the prevalence of talon cusps was 0.17%, without indicating whether the anomaly occurred in the primary or the permanent dentitions.⁽⁸⁾ A recent review of the English literature showed that most of the information was based on case reports. There were 73 cases reported in the literature, and only 18 were in the primary dentition.⁽⁷⁾ Permanent maxillary lateral

incisors were reported to be the most affected.⁽⁶⁾ In the primary dentition, all reported talon cusps involved the maxillary central incisors.⁽⁵⁾ In addition, Davis and Brook reported a male-to-female ratio of 16:9.⁽⁹⁾ Increased incidence of talon cusp has also been reported in patients with Mohr syndrome (Oral-facial-digital syndrome),⁽¹⁰⁾ Rubinstein-Taybi syndrome,⁽¹¹⁾ Sturge-Weber syndrome (encephalotrigeminal angiomas),⁽¹²⁾ and incontinentia pigmenti achromians.⁽¹³⁾ Furthermore, talon cusp may be associated with other dental anomalies such as peg lateral incisors, impacted mesiodens, odontoma, supernumerary teeth, bifid cingulum, exaggerated carabelli cusps and microdontia.^(2,9)

Clinical problems that may arise because of the presence of a talon cusp include occlusal interference, accidental cusp fracture, attrition, breast-feeding difficulty, esthetics, displacement of the affected tooth, irritation of local soft tissue, diagnostic problems radiographically of taloned tooth before eruption and caries.^(1,2,6,7,12,14,15)

Management of the talon cusp varies with each individual's circumstances. The following case pre-

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sents a talon cusp affecting a primary maxillary central incisor and the management approach.

CASE REPORT

A 13-month-old Taiwanese girl first reported to the Pediatric Dental Department at Linkou Medical Center of Chang Gung Children's Hospital on October 9, 1995. The patient's medical history was unremarkable. Examination of the oral cavity revealed normal soft tissue and normal development of primary dentition. An anomalous cusp-like structure was detected on the palatal surface of the right primary central incisor that extended from the cervi-

cal margin of the tooth toward the incisal edge and was slightly curved to the mid-line (Fig.1). An intra-oral periapical radiograph of this tooth revealed the additional cusp with its pulpal extension (Fig. 2). The tooth was asymptomatic and the anomaly did not interfere with occlusion, hence no treatment was considered necessary.

One year later, on November 22, 1996, the patient was brought back to the clinic due to trauma to her taloned incisor when the patient fell. The trauma had resulted in complicated crown fracture of her



Fig. 1 Palatal view shows a talon cusp on the right central primary maxillary incisor.

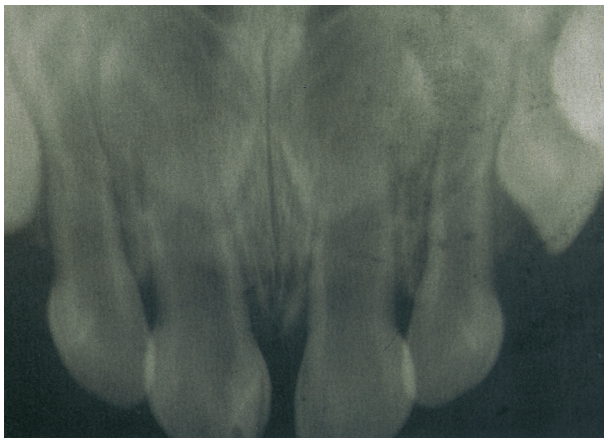


Fig. 2 Periapical radiograph shows the talon cusp with pulpal extension.



Fig. 3 Frontal view of the fractured right central incisor with bleeding from the pulp.

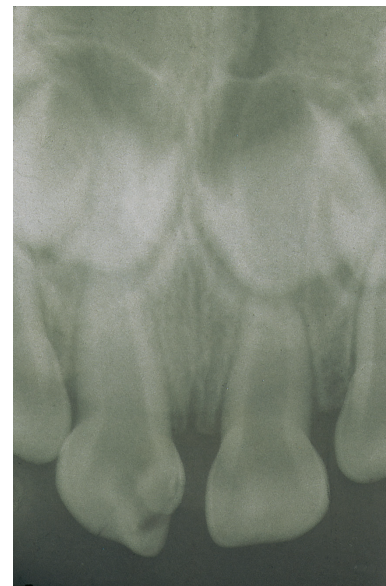


Fig. 4 The maxillary incisors after fracture of the taloned tooth.

upper right central incisor and bleeding was observed over the pulpal exposure site (Fig. 3). No other obvious soft tissue injury was detected. Radiographic evaluation revealed no root fracture (Fig. 4). A pulpectomy was performed on this 27-month-old girl with restraint device (Papoose Board) which was well-tolerated by the patient. The canal was filled with Zinc Oxide Eugenol cement and the

access was sealed with glass ionomer cement (Fig. 5). The talon cusp was then removed and the tooth was restored with composite resin restoration to its common morphology (Fig. 6). The composite resin restoration was polished and checked for occlusal interferences. Upon follow-up examination 1 month after the procedure, no adverse signs or symptoms and no periradicular pathology were noted. The

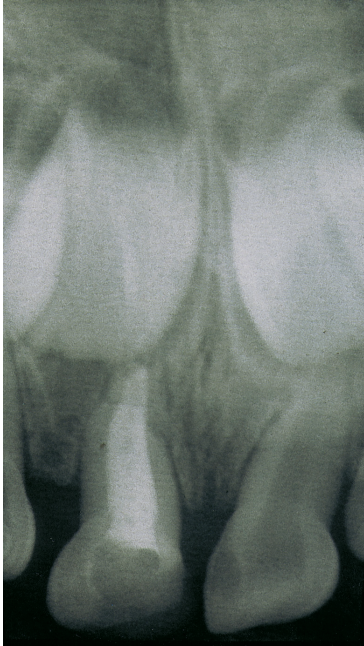


Fig. 5 Periapical radiograph shows completion of pulpectomy. Note the talon cusp has been removed.



Fig. 7 Clinical appearance of patient at 5 years old. Note the lower incisor has exfoliated and the upper right central incisor has survived for years.



Fig. 6 Palatal view of the right central incisor after pulp treatment, resin restoration and recontouring.

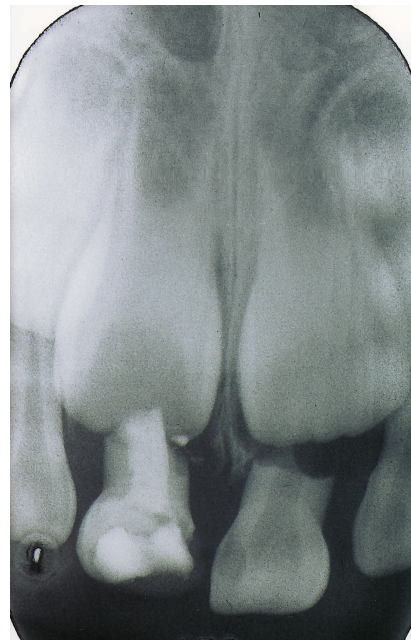


Fig. 8 Two primary central incisors with normal root resorption.

patient was scheduled for regular check-up examinations. Subsequent clinical and radiographic recall examinations for up to 4 years confirmed no signs of pathosis (Fig. 7).

On January 20, 2001, the patient was brought back for follow-up. A periapical radiograph showed normal root resorption of both primary central incisors (Fig. 8). The taloned incisor has survived for many years.

DISCUSSION

Hattab et al. suggested a classification system for the accessory cusp-like structures including true talon, semi-talon and trace talon.⁽⁷⁾ The talon cusp presented in this case report extended from the cemento-enamel junction to the incisal edge, which may be categorized as type 1 or true talon. Although an association of talon-cusp with other developmental abnormalities has been suggested,⁽¹⁰⁻¹³⁾ the patient in this report presented no other documented developmental anomalies.

Talon cusp has been reported to affect both sexes and may be unilateral or bilateral.^(6,12) Review of previous reports of talon cusps in the primary dentition indicated that they all occurred on maxillary central incisors and predominantly on the left side if the anomaly was unilateral.⁽¹²⁾ However, the talon cusp presented in this case report occurred on the right central incisor.

Early diagnosis and treatment were suggested by Morin.⁽¹⁶⁾ In our reported case, the condition was found when the patient was 13 months old. However, considering that the tooth was asymptomatic with no occlusal interference, the authors believe that the tooth could be monitored instead of rendering treatments immediately when the condition was diagnosed.

Management of talon cusps include no treatment,^(2,12) sequential grinding,⁽¹⁷⁾ pit and fissure sealants,⁽¹⁶⁾ pulp therapy,⁽¹⁾ restorative treatment,^(1,3) full crown coverage⁽¹⁸⁾ and extraction of the affected tooth.⁽¹⁵⁾ In our reported case, the tooth fulfilled the functional as well as esthetic requirements when first diagnosed, and the authors believe that the listed invasive treatment are unnecessary and rather aggressive for a 13-month-old patient.

The majority of treatment options reported in the literature pertained to permanent incisors. Little

has been written about the management of talon cusp in the primary dentition. In the report by Chen and Chen, they either provided no treatment or reduced the talon cusp to eliminate occlusal interference during mastication in their case report.⁽¹²⁾ Morin placed pit and fissure sealants in the developmental grooves of both talon cusps reported in his study.⁽¹⁶⁾ Gungor et al extracted two traumatized and fractured taloned primary incisors.⁽¹⁵⁾ The management of the affected incisor in our case included no treatment initially and later pulp therapy, reduction of cusp and restoration as well as recontouring the tooth, provides a successful treatment modality for the management of fractured primary talon cusp.

As little is known about the anatomy of talon cusps regarding the pulp and communication with the main pulp chamber, further investigation should be performed to aid in optimizing the management of similar cases to ensure that the best possible treatment is offered.

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鷹爪阜影響乳齒正中門牙之處置

蔡蔭玲 張佩菁

鷹爪阜是相當少見之牙齒發育異常現象，乃指一個像副咬頭的牙齒結構由前牙之舌面隆起突出牙齒表面。此狀況可發生於乳齒及恆齒齒列，但乳齒齒列之發生率更低。相較於恆齒齒列，文獻上鮮少有乳齒齒列鷹爪阜之治療報導。本文之目的乃在於紀錄一個上顎乳齒門牙鷹爪阜之處置病例及其長期追蹤報告。(長庚醫誌 2003;26:678-83)

關鍵字：鷹爪阜，乳齒齒列，異常。

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