

■ Case Report

Talon cusps: Two case reports

Talon tüberkülü: İki olgu sunumu

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ABSTRACT

The talon is an accessory, irregular cusp on incisors and canines, involving in enamel and dentine with or without pulp tissue. It was also reported in association with syndromes, for example, Mohr Syndrome, Incontinenta pigmentii Achromians, Ellis-van Creveld Syndrome, Struge Weber Syndrome, Rubinstein Taybi Syndrome, and Alagille's Syndrome. The aim of this paper was to describe talon tubercles in two cases. In first case the talon cusp is seen on lingual surface of the maxillary left central tooth and there is a specific talon tubercle which extending from the incisal edge to the cervical edge, perpendicular to the mesiodistal surface of the tooth. In second case bilateral talon tubercles were detected extending from the cervical region less than half of the incisal margin on the lingual surface of the maxillary central and lateral teeth. This present two case reports radiograph gives a v-shaped radiopaque image. Talon tubercle is a dental anomaly we rarely encounter. Consequently this anomaly may occur with a systemic syndrome. Therefore, clinicians should have adequate knowledge of this anomaly.

Keywords: talon cusp; accessory cusp; maxillary permanent incisor

ÖZ

Talon tüberkülü kesici ve kanin dişlerde görülen, mine ve dentin dokusundan oluşan, bazen pulpa uzantılarının da içerisinde bulunduğu aksesuar bir tüberkül olarak tanımlanır. Bu durum Mohr Sendromu, Incontinenta pigmenti Achromians, Ellis-van Creveld Sendromu, Struge Weber Sendromu, Rubinstein Taybi Sendromu ve Alagille Sendromu gibi sendromlarla birlikte de bildirilmiştir. Bu makalenin amacı iki ayrı vakada görülen talon tüberkülünü tanımlamaktır. Birinci vakada talon tüberkülü, maksiller sol santral dişin lingual yüzeyinde görülmektedir ve servikal kenardan insizal kenara uzanan, dişin mesiodistal yüzeyine dik olarak konumlanan spesifik bir talon tüberkülü bulunmaktadır. İkinci vakada da maksiller santral ve lateral dişin lingual yüzeyinde, dişin servikal kenarından insizal kenarının yarısına kadar uzanan bilateral talon tüberkülü saptanmıştır. Bu iki vaka raporunda, radyografinin de V-şeklinde radyopak bir görüntü verdiğini saptanmıştır. Sonuç olarak talon tüberkülü nadiren karşılaştığımız bir dental anomalidir. Bu anomali sistemik sendromlar ile birlikte görülebilmektedir; Bu nedenle, klinisyenler bu anomaliye ilişkin yeterli bilgiye sahip olmalıdır.

Anahtar kelimeler: talon tüberkülü; aksesuar tüberkül; maksiller üst kesici

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Introduction

The talon is an accessory, irregular cusp on incisors and canines, involving in enamel and dentine with or without pulp tissue. Talon cusp is a rare developmental anomaly in which from the cemento-enamel junction of the upper or lower anterior teeth in either primary or permanent dentition and extending to at minimal half of the distance to the incisal margin of the anterior teeth. Mitchell was the first to describe a talon cusp in 1892. It was named as talon cusp by Ripa and Mellor due to its view as eagle's talon when viewed from incisal margin [1].

The talon is also named such as the names; accessory cusp, addition cusp, anterior dens evaginatus, cusp-like hyperplasia, prominent accessory cusp like structure, supernumerary cusp, interstitial cusp, odontoma of the axial core type, evaginated odontoma, occlusal enamel pearl, occlusal anomalous tubercle [2]. The maxillary lateral incisors are the most often involved, followed by the maxillary central incisors and canines [3]. Talon cusps are most frequently located on the lingual faces of the teeth; a few case reports of labial cases are given information in the literature [1]. Males show a upper frequency than females [2] and talon cusps are reported usually unilateral; rarely are bilateral [4].

The aetiology of the teeth anomaly is unknown. It arises during the morphodifferentiation stage of tooth development [5]. It was also reported in association with syndromes, for example, Mohr syndrome, Incontinentia pigmentii Achromians, Ellis van creveld syndrome, Struge Weber syndrome, Rubinstein Taybi syndrome, and Alagille's syndrome [6].

The presence of this talon cusp is not forever an indication for dental cure unless it is associated with clinical problem. The problems of talon cusp are functional, pathological, diagnostic and esthetics [1, 6]. This report shows two cases of talon cusp, one on a maxillary bilateral central and lateral incisor and another on a maxillary central tooth. Informed consent form was approved both two patients.

Case 1

23 years old Turkish male applied to the Kırıkkale University Faculty of Dentistry Department of Restorative Dentistry with a chief complaint of a due to decay teeth. No systemic disease of the patient was detected in the received anamnesis. Oral examination all permanent teeth were exist and hypoplasia and coloration in the anterior teeth. Examination revealed talon cusps on the lingual surfaces of maxillary left central incisor and this tooth is protrusive (Figure 1a). This anomaly was not found in family history. Maxillary left central incisor had a specific talon cusp so that covering from the cervical region towards the incisal margin. The cusp determined and perpen-

dicularly localized to the mesiodistal surface of the crown. The shape of the talon cusp were hornlike, and can be described as conical (Figures 1b). Replies of the affected teeth during the palpation, percussion and pulpal tests were normal. The talon cusps had no unfavourable influence on the tongue along speaking and mastication. Radiographic (periapical and panoramic) examination showed a "V"-shaped radiopaque structure but did not clearly define this formation associate with to the pulp chamber (Figures 1c and 1d). Therefore, we considered no treatment needed.



FIGURE 1a. Occlusal image of the teeth.



FIGURE 1b. Incisal image of the teeth.



FIGURE 1c. Panoramic radiography of the teeth.



FIGURE 1d. Periapical radiography of the teeth.

Case 2

22 years old Turkish female applied to the Kırıkkale University Faculty of Dentistry Department of Restorative Dentistry with a chief complaint of a due to decay teeth. No systemic disease of the patient was detected in the received anamnesis. Intraoral examination all permanent teeth were exist and clinical examination of this patient indicated additional cusps located on the palatal plane of the upper centrals and laterals bilaterally, extending from the cemento enamel junction less than half the distance to the incisal margin. The type of the cusps was semi-talon (Figure 2a). The four affected teeth replied positively to palpation,percussion and thermal tests. The color of teeth which talon cusp was normal. The cusps did'nt interfere on occlusion; neither the centrals nor the laterals were carious. In the panoramic radiograph was spied on the talon cusps as "V" formed radiopaque structures on the both centrals and laterals (Figure 2b). Therefore, we considered no treatment needed.



FIGURE 2a. Incisal image of the teeth



FIGURE 2b. Panoramic radiography of the teeth

Local ethics committee approved the study and informed consent was obtained from participant(s)

Discussion

Talon cusp reported as a very uncommon dental anomaly. Hattab et al. defined a classification system for these abnormal cusps on the foundation of the degree of cusp size, formation and location [7]. This is shown in table 1.

Table 1. Classification of talon cusp based on the degree of formation and extension

Type 1 Talon	A morphologically well-delineated additional cusp that prominently projects from the lingual surface of a primary or permanent anterior tooth and extends at least half the distance from the cemento enamel junction to the incisal marginal.
Type 2 Semi Talon	An additional cusp of a millimeter or more extending less than half the distance from the cemento enamel junction to the incisal marginal. It may blend with the palatal surface or stand away from the rest of the crown.
Type 3 Trace Talon	Enlarged or prominent cingula and their variations, i.e. conical, bifid, or tubercle like. Radiographically, it may appear typically as a V-shaped radiopaque structure, as in true talon and semi talon, or be tubercle-like, originating from the cervical third of the root.

Hsu Chin-Ying et al.defined this as major, minor, and trace talon. When examined from incisal margin, the morphology seem as either "T," "Y," or "π" shape for major, minor, or bifid talon cusp.[6] In case 1, the talon cusp classification is type 1 (true talon), whereas in case 2, the type 2 (semi talon) talon cusp classification is included.

Ekambaram et al. [8],Topaloğlu et al.[9] and Abbott et al.[10] showed vestibül and lingual talon cusps on the same tooth.In present report, Case 1 was unilateral. Balcıoğlu et al.[4] , Gün-gör et al.[11] , reported bilateral talon cusp. In the present report, Case 2 was bilateral.



When the literature is examined; talon cusps are the maxillary lateral incisors (%67) are the most often arises, followed by the maxillary central incisors (%24) and canines (%9) [3]. Segura JJ and Jiménez- Rubio et al. the cause as this event may be consist the pressure of the tooth germ of the lateral teeth by the central and the canine tooth; because the central incisor and the canine develop seven months earlier than the lateral incisor. Increased pressure on a tooth germ can cause outfolding of the dental lamina along the morpho-differentiation stage [4]. Talon cusp, Case 1 occurred at the maxillary central incisor tooth; Case 2 occurred in both the maxillary central and lateral teeth.

The talon cusp is including normal enamel, dentin, and varying extensions of pulp tissue, however; its composition is difficult to determine because of the cusps superposed on the pulp chamber [1]. In the present cases did not clearly define this formation associate with to the pulp chamber. Radiographically, a talon cusp typically seems as a "V"-shaped radiopaque structure [1, 2]. This radiographic image was seen in two cases.

The frequency of talon cusp ranges from 0.06% to 7.7% in the literature [1, 4]. The reported frequency is 2.4% in Jordanians, 2.5% in Hungarians, 0.06% in Mexicans, 5.2% in Malaysians, 0.97% and 0.58% in Indians [12]. Arfat et al. [13] talon cusps found prevalence to be 1.2% Turkish population while Güven et al. [12] talon cusps were found in 0.34%.

Kayalvizhi et al. [14] and Segura JJ et al. [3] reported dens invaginatus with associated talon cusp. In the present report; No dental anomalies associated with talon cusp were found and none of the two case reports reported here had any systemic syndrome.

Talon cusp may reason a variety of clinical problems; such as occlusal interference, irritation of tongue and oral tissues, pulpal disorder, decay, attrition, periodontal problems, displacement of the affected tooth, esthetic problems, accidental cusp fracture, and even temporomandibular disorders. Treatment of talon cusp may vary depending on each case [4]. Early diagnosis of talon is very important. If the grooves are carious, the lesion must be removed and the cavity restored with glass ionomer restorative material [15] or composite resin [1]. If premature contact and occlusal interference have the talon cusp should be reduced gradually on consecutive visit over 6 to 8 week intervals to allow time for deposition of reparative dentine for pulpal preservation. After each procedure the tooth surface must be covered with a desensitizing agent or fluoride varnish [16]. Sometimes, less conservative methods can be used, including complete reduction of cusp followed by calcium hydroxide/ mineral trioxide aggregate pulpotomy or canal therapy or extraction followed by orthodontic correcti-

on and prosthetic rehabilitation [6].

Talon cusp is not always a need for dental treatment, unless the cusp is associated with issue such as compromised esthetics, occlusal interference, tooth displacement, caries, periodontal problems, or irritation of during speech or mastication [1].

In the 1th case described here, the maxillary talon cusp defined on the lingual surface of the central tooth. In the 2th case described here, the maxillary talon cusp bilaterally defined on the lingual surface of both the central and lateral teeth. The margins of the talon cusp were regular and did not cause any irritation to the surface of the tongue. Caries didn't define and no functional and occlusal interference or aesthetic problems were present. Hence, no treatment was applied.

Conclusion

In conclusion, the cases described in this paper contains an asymptomatic dental anomaly that did not reason any other variation in the tooth or arch. Clinicians should have a wide knowledge about developmental anomalies, their variations and the clinical conclusions. Early diagnosis of talon cusps aids in choosing the correct treatment and avoiding complications.

Declaration of conflict of interest

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