

Impaction of permanent upper canine caused by supernumerary tooth with talon cusp type III

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Abstract

Introduction: The talon cusp is defined as a developmental anomaly in which an accessory cusp-like structure projects in the area of the cingulum or cemento-enamel junction in the anterior teeth attached to the lingual surface of the crown, ranging in size, shape, length and degree of union with the surface. **Case report:** This study aimed to report a case of a patient who came to Clinic for Preventive Dentistry of Federal University of Pernambuco, Recife-PE, Brazil, complaining of pain in the upper left region. The clinical exam observed the presence of a supernumerary tooth with talon cusp type III in the canine region which had a carious lesion in the developmental groove at the mesial surface and caused a prolonged retention of permanent tooth. **Conclusion:** With this we want to emphasize that the Dental Surgeon be aware of the changes caused by dental morphological variations, seeking to conduct a proper treatment plan, meeting the functional and aesthetic needs of the patient.

Keywords: supernumerary tooth, unerupted tooth, canine tooth, cuspid.

1 Introduction

The formation and development of the dental organ begin around the seventh week of intrauterine life. During this period, the odontogenesis is influenced by local or general factors which may cause disturbances in the physiology and morphology of the dental organ and modifying it (BERTAZZOLI, BAPTISTA, FONSECA et al., 2007).

In Dentistry, there are many dental anomalies that affect the size, shape, number, the structure and eruption of the teeth, according to the phase of formation in which the tooth suffered the aggression. Regarding the number it can be: oligodontia (total or partial) and supernumerary teeth; according to the form can be found: gemination, fusion, concrescence, taurodontism, dilaceration, supernumerary roots, talon cusp and *dens in dente* (SHAFFER, HINE and LEVY, 1987; NEVILLE, DAMM, ALLEN et al., 2004; LLENA-PUY and FORNER-NAVARRO, 2005).

Most supernumerary teeth occurs in permanent dentition, although its appearance can happen in both dentitions. The prevalence is greater in males (LOBATO, COLUMBANO and SOUZA, 2002); these may occur singly, or multiple, unilateral or bilateral, and in one or both maxillae (SCHEINER and SAMPSON, 1997).

The most prevalent anomaly is the conoid form of lateral upper incisor, followed by other less frequent atypical forms as supernumerary teeth (extra, claw cusp or talon cusp), gemination and fusion (ALMEIDA, ALMEIDA-PEDRIN, ALMEIDA et al., 2000).

The talon cusp is defined as a developmental anomaly in which an accessory cusp-like structure projects in the area of the cingulum or cemento-enamel junction in the

anterior teeth attached to the lingual surface of the crown, ranging in size, shape, length and degree of union with the surface. This anomaly is more frequent in the maxilla than the mandible, however it can occur in both dentitions. Appears more frequently in pre-molars although it may also be present in molars, canines and incisors. Pathologically, can result from an abnormal proliferation of the epithelial enamel inside the stellate reticulum of the enamel organ, whose etiology may be related to disturbances in the stage of morphodifferentiation. The exact etiology is unknown and its appearance can be associated with various factors (SILVA and MÁRMOL, 1998; GONÇALVES, IMPARATO and WANDERLEY, 2003; SEGURAGEA, JIMÉNEZ-RUBIO, RÍOS-SANTOS et al., 2003; CARVALHO, PAGLIARIN, FILHEIRO et al., 2007; SARRAF-SHIRAZI, REZAEIFAR and FORGHANI, 2011).

This anomalous structure is composed of normal enamel and dentin and has different extensions of pulp tissue inside or is devoid of a pulp horn (GÜNDÜZ and AÇIKGÖZ, 2006). The talon cusp can be classified into three basic types: Type I (talon) is characterized as an additional cusp, projected on the lingual face of an anterior tooth, extending up to half the distance between the cemento-enamel junction and the incisal edge; type II (semi-talon) is characterized as an additional cusp, with 1mm or more in length, which extends from the cemento-enamel junction to less than half the distance to the incisal edge; and type III (*trace talon*), which looks like a prominent cingulum (HATTAB, YASSIN and AL-NIMRI, 1996).

This work aimed to report a case of an impacted permanent left upper canine, caused by the presence of a supernumerary tooth that had a talon cusp type III.

2 Case report

Patient M.S.V., female, 12 years old, pheoderma, came to Clinic for Preventive Dentistry of Federal University of Pernambuco, Recife-PE, Brazil, complaining of pain. The patient's medical history was normal, and the intraoral exam observed the presence of a supernumerary tooth in the region of left upper canine which had a carious lesion at the mesial surface that caused a prolonged retention of permanent tooth (Figures 1 and 2).

This tooth had an accessory cusp (talon cusp), the cavity being located in the deep developmental groove where the cusp merges with the subjacent surface of the affected tooth, which is a characteristic of the talon cusp (Figures 3 and 4). It was not reported the presence of similar anomalies in any other family members including her twin sister. The patient was healthy and had normal physical development for her age.

3 Discussion

Impaction of upper canines is subjects of great interest in the dental literature. This tooth has the longest and tortuous

development, starting before the mineralization of the first molar and incisor. Furthermore, it takes twice as long to complete its eruption and thus making it more susceptible to change the trajectory of normal eruption. During the course of eruption since odontogenesis until the final establishment of the occlusion, it can undergo a deflection that changes its course, resulting in a clinical problem frequently observed, such as ectopic eruption or impaction by vestibular or palatal. (ALMEIDA, FUZIY, ALMEIDA et al., 2001).

The occurrence of talon cusp can cause a variety of clinical problems for the patient, as described in this case report. According to Gündüz and Açikgöz (2006) these clinical



Figure 1. Front view of supernumerary tooth in the left upper canine region.



Figure 2. Occlusal view of the upper dental arch showing the absence of the right upper canine and the presence of supernumerary teeth on the left side.



Figure 3. Prominent talon cusp type III on the lingual face of the supernumerary tooth.



Figure 4. Periapical radiography of the region of the unerupted upper left canine and its relationship to the root of the supernumerary tooth.

problems include carious lesion in the developmental groove, poor aesthetics, occlusal interference, displacement of the affected tooth, rubbing, irritation and interference with the language. The clinical management of this anomaly varies from case to case, ranging from the conservative restoration to extraction. (LORENA, OLIVEIRA and ODELL, 2003).

Early diagnosis of talon cusp is important and, in most cases, a definite treatment is required. The carious lesions should be restored. In the event of premature contact and occlusal interference, the talon cusp should be decreased gradually over consecutive visits 6-8 weeks apart, to allow time for the deposition of reparative dentin for pulp protection (GÜNDÜZ and AÇIKGÖZ, 2006). Early oral exam can facilitate early diagnosis of the talon cusp and prevent occlusal problems and tooth decay (SARRAF-SHIRAZI, REZAIEFAR and FORGHANI, 2011). The treatment must be performed as soon as possible, due to the problems caused, mainly affecting the occlusion and aesthetics of the patient (LOBATO, COLUMBANO and SOUZA, 2002).

Early diagnosis of supernumerary teeth is important to minimize the complications they can cause, such as late or non-eruption of permanent teeth, displacement of permanent teeth and root resorption of adjacent teeth due to pressure and cystic formations (BYAHATTI, 2011). The dental surgeon must recognize the signs that suggest its presence in the diagnosis and conduct investigations relevant to properly manage each case in order to minimize the complications of developing dentition (SHAH, GILL, TREDWIN et al., 2008).

Therefore, radiographic examinations must be requested when the eruption of one or more teeth are altered seeking a correct diagnosis and appropriate treatment plan, since the presence of these teeth can cause a series of complications aesthetics, phonetics and psychological (BEZERRA, BEZERRA and CAVALTANTI, 2007; SHETTY, DIXIT, REDDY et al., 2011; BYAHATTI, 2011).

In most cases, the incidence of retained teeth is discovered by clinical examination or radiographic routine, because they are asymptomatic, the patient does not seek treatment for impaction, but the consequences that they may bring to the dental arch, as diastema, adjacent teeth poorly positioned and swelling near the problem (BECKER, 2004).

The presence of the permanent upper canine on the dental arch plays an important role in establishing and maintaining form and function of the dentition, and their presence is essential for the establishment of a balanced dynamic occlusion, participating in the phenomena of disocclusion in lateral movements and compose the anterior guide beyond aesthetics and facial harmony. Thus, given its importance in the face of an impaction, efforts should be employed to keep the tooth avoiding its extraction, and one should worry about placing them in correct alignment and leveling in the dental arch (LINDAUER, RUBENSTEIN, HANG et al., 1992; CAPPELLETTE, CAPPELLETTE JUNIOR, FERNANDES et al., 2008).

Thus a multidisciplinary action in Dentistry is a key factor in obtaining a correct diagnosis and a treatment plan development. Specialties such as orthodontics, periodontics and surgery demonstrate that working together provides patients with better functional and aesthetic results with more favorable prognoses. (CHITARRA, 2001). It is

necessary that the professionals know these anomalies, in order to not confuse them, and thus establish the correct diagnosis for a correct intervention.

4 Conclusion

During the anamnesis it is important that the Dental Surgeon be sensitive to dental changes caused by morphological variations, in order to conduct a proper treatment plan, meeting the functional and aesthetic needs of the patient.

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