

Mesiodens with Facial Talon Cusp- A Rarity

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ABSTRACT

Mesiodens is the most common type of supernumerary tooth found in premaxilla between two the central incisors. Talon cusp, also known as eagle's talon, is a dental anomaly that occurs on lingual aspect of the teeth. This paper reports a rare presentation of talon cusp on facial aspect of mesiodens in 9 year old female child. The treatment plan consisted of extraction of mesiodens.

Keywords: Facial talon cusp, Mesiodens, Extraction

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INTRODUCTION

By definition supernumerary teeth are extra teeth in comparison to the normal dentition. The most common type of supernumerary tooth as indicated by Alberti et al is mesiodens (1). The first report of supernumerary teeth has been found in ancient human skeletal remains since Lower Pleistocene era (1). The term mesiodens was coined by Balk in 1917 to denote a supernumerary tooth located mesial to both central incisor appearing as peg shaped crown in normal or inverted position (2). Single supernumerary teeth accounts for 76-86%, in pair accounts for 12-23% and less than 1% cases with three or more extra teeth (3). In some syndromes such as Gardiner's syndrome, cleidocranial dystosis, cleft lip and palate mesiodens may present as part of syndrome but mesiodens may also be seen in normal individuals (1).

The prevalence varies between 0.15% and 1.9% of the population (1). Although both dentitions are affected, a higher incidence of anomaly is noted in permanent dentition (4). Mesiodens may occur individually or in multiples termed as mesiodentes (2).

Talon cusp also known as eagle's talon is an accessory cusp like structure or an

extra cusp on an anterior tooth, which arises as a result of evagination on the surface of crown before calcification has occurred. Prevalence of 7.7 % has been found in north Indian population (5). The incidence has been found to range from less than 1% to 6% of the population, out of which majority occurs in maxillary central incisors (55%) and 33% occurs with maxillary lateral incisors on lingual aspect, usually unilateral but in some instances bilateral (6). This entity can occur as isolated finding or in association with other dental anomalies. Talon cusp appears more commonly in syndromes like Rubinstein-Taybi syndrome, Mohr syndrome, Sturge-weber syndrome and incontinentia pigmenti (5). It is more frequent in permanent than in primary dentition. It is composed of normal enamel, dentin and varying extensions of pulp tissue and varies in size, shape structure, location and site of origin (5). Occurrence of talon cusp on facial aspect is extremely rare (6).

The occurrence of talon cusp in supernumerary tooth is an extremely rare phenomenon with only countable number of case reports till now and its occurrence on facial aspect is still infrequent (7-15). This paper reports a case of facial talon cusp in the mesiodens which is very rare and unusual.

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Figure 1. showing the mesiodens with type 1 talon cusp on facial aspect

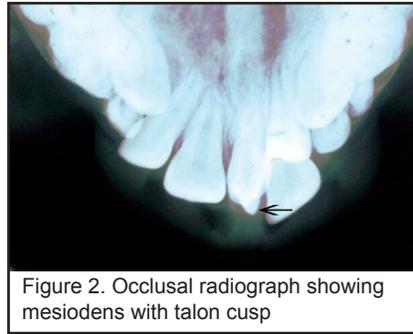


Figure 2. Occlusal radiograph showing mesiodens with talon cusp

CASE REPORT

A nine year old female patient presented with a complaint of unusual looking extra tooth in the upper anterior region of jaw. Family history was non contributory. Her physical appearance did not reveal any abnormalities. No abnormalities were found on extraoral examination. On intraoral examination, completely erupted supernumerary tooth was noticed between two central incisors. Patient was in mixed stage of dentition with no other dental abnormalities. On examination of mesiodens, it had two lobes with a developmental groove running between the two lobes. On further examination it was found that mesiodens had a facial talon cusp, giving inverted 'T' shape (Fig 1) as talon was located on the facial aspect. As tooth occupied the midline, there was no place for other teeth, as a result permanent right central incisor was displaced labially and right lateral incisor was displaced palatally. Radiographic examination revealed mesiodens with completely formed roots and "V" shaped radio opaque shadow superimposed over the crown of mesiodens. (Fig 2)

Based on both clinical and radiographic examination the supernumerary tooth was diagnosed as mesiodens with

facial talon cusp. Since patient was in mixed dentition stage, extraction of mesiodens was advised for better alignment of the permanent anteriors. Unfortunately patient did not turn for the treatment and was lost to the recall.

DISCUSSION

The term mesiodens refers to supernumerary tooth present in the midline of maxilla between the two central incisors (16). The mesiodens may erupt normally, stay impacted, appear inverted or take horizontal position. Asymptomatic unerupted mesiodens may be discovered during radiological examination of premaxillary area (4). Their occurrence is in the ratio of 2:1 in males and females (1). The present case was noted in female child.

Several theories have been postulated regarding the cause of super numerary teeth including atavism, dichotomy of tooth bud and hyperactivity of dental lamina and proliferation of odontogenic cell rests (17). There are two subclasses in classification of mesiodens, according to their shape and size. The first group is eumorphic teeth resembling the central incisor with normal shape and size. The second group is dysmorphic teeth with different shapes and sizes and categorized

into conical, tuberculate, supplemental and odontomas (1). In the present case though it had two lobes separated by developmental groove.

A talon cusp was first described by Mitchell in 1892 as "process of horn like shape, curving from base downwards to the cutting edge" on the lingual surface of maxillary incisor, but was named as talon cusp by Ripa and Mellor due to it's resemble to eagle's talon (15). Males have higher incidence than females (6). The etiology of talon cusp is unknown though it is thought to be a combination of genetic and environmental factors. They may be result of an out folding of enamel organ or hyper productivity of dental lamina during morphodifferentiation stage of odontogenesis. It is classified as type 1- talon, type 2- semitalon, and type 3 -trace talon (6, 11). In the present case type 1- talon was seen. There are reports of co-occurrence of talon cusp with other dental anomalies like dens invaginatus, impacted mesiodens, peg laterals, unerupted canines, bifid cingulum, shovel shaped incisors and complex odontoma (5,7).

Talon cusp of supernumerary teeth in the permanent dentition is extremely rare and literature has only countable case reports Nagaveni et al (7) reported a palatal talon cusp on multilobed mesiodens. Nuvvula et al (15) reported lingual talon with supplemental maxillary central incisor. Topaloglu (8) and Siraci (9) have reported facial and palatal talon on primary molar supernumerary tooth. Rani et al (12) reported a case of maxillary lateral incisor fused to supernumerary having a lingual talon. Babaji P et al (5)

Table 1: showing the supernumerary in anterior maxilla with talon cusp

Author

- Salama.FS et al
- Nadkarni et al
- Rani et al
- Nagaveni et al
- Babaji.P et al
- Busnur SJ et al
- Neeraja.R and Kayalvizhi G

Report of supernumerary tooth in anterior maxilla with talon cusp

- Talon cusp associated with supernumerary primary and permanent teeth
- Supernumerary tooth in maxilla associated with lingual talon
- Maxillary lateral incisor fused to supernumerary tooth associated with lingual talon
- Palatal talon in multilobed mesiodens
- Lingual talon in supernumerary tooth in anterior maxilla
- Facial talon on multilobed mesiodens
- Supernumerary tooth in maxilla associated with facial talon

reported a case of Supernumerary having a lingual talon cusp associated with one mesiodens. Recently Busnur SJ (10) reported a talon in multilobed mesiodens. Neeraja and Kayalvizhi (11) reported a case of facial on supplemental mesiodens. Simultaneous occurrence of two anomalies in an entity is rare and mesiodens with facial talon is such an entity (Table 1).

Clinical problems associated with talon cusp may vary from no effect when the cusp are small to various clinical problems like poor esthetics, occlusal interference, attrition, cusp fracture, displacement of affected tooth, pulpal exposures, periapical and periodontal pathologies, temporomandibular joint pain, caries in the developmental grooves etc. (5,6). As various complications are also associated with presence of mesiodens including retention of primary tooth, delayed eruption, rotation, root resorption, midline diastema, loss of vitality, caries, periodontal pathologies, formation of dentigerous cyst etc, early extraction of mesiodens is preferred (1,2). In the present case midline diastema, malposition of right central and lateral incisors along with unaesthetic appearance was noted.

Early extraction of mesiodens in mixed dentition also helps for better alignment of permanent teeth and minimizes the need for orthodontic treatment. Some authors believe best time for removal of mesiodens is 8-9 years when upper incisors erupt. At this stage age behavior of child is much easier to manage and type of anesthesia required can be less invasive. Another treatment calls for late extraction of mesiodens when adjacent permanent

incisor has completed their root formation. If mesiodens is symptomatic periodic follow-up is necessary (18,19). In the present case patient was advised for extraction of mesiodens followed by orthodontic alignment.

CONCLUSION

The present case reports a rare association of mesiodens and an unusual facial talon cusp leading to unaesthetic appearance in the anterior of oral cavity. Early diagnosis and timely surgical intervention helps to prevent the complications associated with such anomalies.

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