

Central accessory cusp – unique site

Abstract

Accessory cusps are common variations of tooth morphology that are occasionally seen clinically. However, their incidences differ depending on the type and the tooth affected. This article reports a rare case of bilateral central accessory cusp of Maxillary first permanent in a 14 year old boy. The maxillary right and left first permanent molars showed prominent, rounded projection on the occlusal aspects which were obliterating the central grooves. There were no signs of wear or fracture of these tubercles. No specific treatment was administered, as they were not interfering with the occlusion. Preventive measures like oral prophylaxis and sealant placement was done. The possible complications in the future were explained to the parents regarding the tubercle and the need for periodic monitoring was emphasized. Also the possible etiological factors along with differential diagnosis and future treatment options anticipated are discussed.

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Case report

Dens evaginatus is a variance of odontogenesis, which is characterized by enamel covered conical tubercle that may enclose dentin and pulpal tissue. Central cusps (occlusal supernumerary cusps) are located between the buccal and the lingual cusp tips in the occlusal surface of the premolars and molars and on the lingual surface of the incisors and canines. Pedersen¹ described central tubercle as “a peculiar enamel pearl-like ‘cusp’ on the occlusal surface” of the right upper molar in an Eskimo from Greenland. The most commonly reported accessory cusps are cusp of carabelli of the molars, talons cusps of the incisors and leong’s tubercle of premolar. These variations can be seen both in primary and in permanent dentitions.² Even though, Dens evaginatus or accessory central cusp was described commonly in premolars, they were infrequent in molars. In primary dentition, they were confined to maxillary second molars, either unilaterally or bilaterally.³ In permanent molars, they were reported unilaterally in mandibular third molar and maxillary second molar.⁴ Within the bounds of our literature search, no central accessory cusp has been reported in permanent maxillary first molars.

A 14 year old south Indian male presented to the department of Paediatric Dentistry for routine dental visit. Intra oral examination revealed the presence of age appropriate permanent dentition. The maxillary right and left first permanent molars showed prominent, rounded projection on the occlusal aspects Figure 1, which were obliterating the central grooves. There were no signs of wear or fracture of these tubercles. The child was otherwise normal related to extra oral findings and temporal mandibular joint. No specific treatment was administered, as they were not interfering with the occlusion. The possible complications in the future were explained to the parents regarding the tubercle and the need for periodic monitoring was emphasized.

The etiology of extra cusp formation or abnormal shape is unknown. However, initially, it was noted that, genetically, these features are probably due to over activity of the dental lamina. However, it is presently believed that the PAX and MSX genes are responsible for the abnormal shape of the teeth.⁵ The accessory cusps may pose multiple dental problems such as caries in the pits or developmental grooves between the accessory cusp and the tooth, sensitivity or devitalisation of tooth due to fracture or attrition of the tubercle that has pulpal extension.^{4,6} The potential sequelae following pulpal exposure are loss of vitality, apical periodontitis, osteomyelitis, root cyst, pericementitis and facial infections.

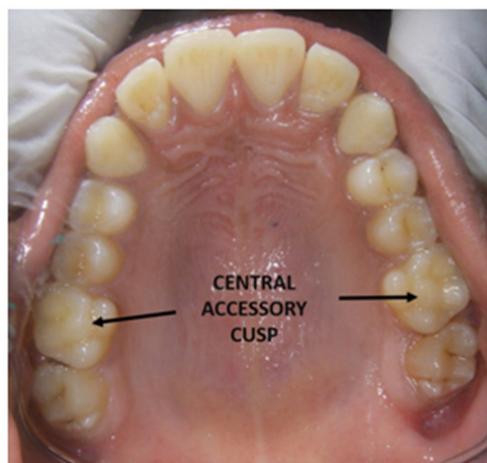


Figure 1 Intra oral picture showing central accessory cusp on the maxillary first permanent molars.

The management modalities depend on the size of the accessory cusp, their interference with the opposing tooth and pulpal extension into the tubercle. If the pulp does not extend into the tubercle, enameloplasty followed by preventive resin restorations can be applied in deep grooves around the accessory cusp. If the extension is minimal, intermittent grinding of the cusp followed by fluoride varnish application can be done for decreasing the sensitivity. If inadvertent pulp exposure occurs, direct pulp capping can be done. When there is complete extension of the pulp, removal of the tubercle with the necessary pulpal procedures based on vitality and status of root development should be considered.

Early diagnosis of these anomalies is imperative in clinical dentistry because, if they are left undiagnosed during routine clinical examination and appropriate care has not been rendered, they may result in more severe pathological complications.

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Conflicts on interest

The author declares that there is no conflict of interest.

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