Images in Medicine

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Dentistry Section

Bilateral Talon Cusp Associated with Mesiodens

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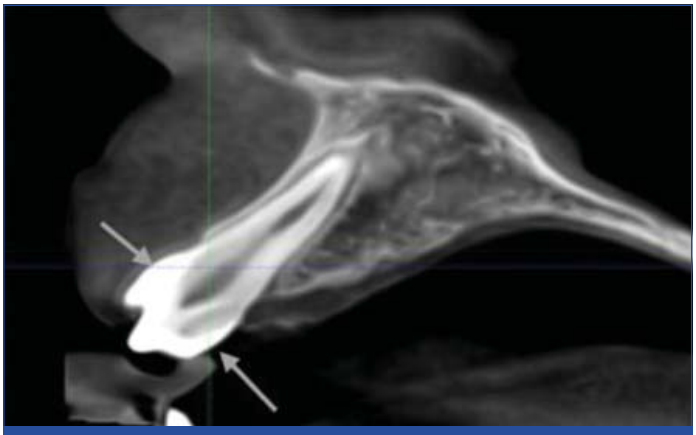
A 10-year-old boy reported to the Department of Paediatric and Preventive Dentistry for a routine dental checkup. The boy had a normal appearance as per his age, with no significant medical and dental histories. A completely erupted mesiodens was observed during the intraoral examination. Labially, an extra cusp was seen, which extended from the cervical 1/3rd till the middle 1/3rd of the tooth, being pyramidal in shape, and merged onto the labial surface of the supernumerary tooth. Palatally, an oval-shaped cusp projected from the cingulum up to more than 2/3 of the lingual surface [Table/Fig-1]. Based on the history, it had been found that the extra tooth had erupted three years back. The mesiodens had a similar resemblance in shape to a maxillary incisor, but was smaller in size.

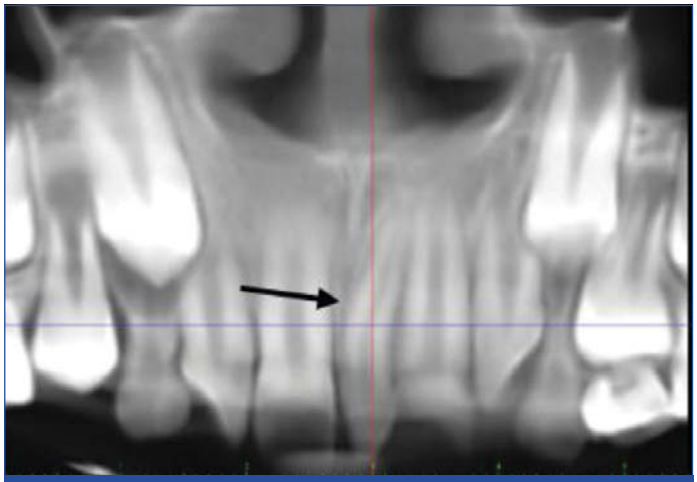
[Table/Fig-1]: (a) Intraoral image showing the front view revealing mesiodens present between the right and left central incisors with talon cusp present on the labial surface; (b) Intra-oral image showing the occlusal view of the maxilla.

Cone-Beam Computed Tomography (CBCT) imaging revealed a prominent labial talon [Table/Fig-2], which extended from the cemento-enamel junction towards the incisal edge, exhibiting a well-defined triangular projection with both enamel and dentin density.



[Table/Fig-2]: Sagittal view of mesiodens.

The palatal talon cusp is similarly well-developed, extending from the cingulum area and projecting incisally, presenting with a comparable density and contour to the labial talon cusp. Pulpal extension within the talon cusps is observed, necessitating further clinical and radiographic evaluation to assess the risk of pulp exposure. The coronal view [Table/Fig-3] demonstrates the complete length and anatomy of the root, portraying a sharp curve in the middle 1/3rd of the root towards the left maxillary central incisor. The increased



[Table/Fig-3]: Coronal view of mesiodens.

labio-palatal width of the mesiodens [Table/Fig-4] is contributed to by the presence of the labial and palatal talon's cusp. The treatment planned for this patient was the extraction of the mesiodens followed by orthodontic rehabilitation; however, the patient did not attend the next appointment.

[Table/Fig-4]: Axial view- occlusal plane of mesiodens demonstrating the labio-palatal width of the mesiodens.

DISCUSSION

The mesiodens is a supernumerary accessory tooth between the two incisors in the maxilla's midline [1]. They can occur as both single and multiple forms [1]. With a conical crown and a single root, the mesiodens may erupt properly or remain impacted, appearing either inverted or horizontal [1]. Based on their morphology, mesiodens are classified into two categories: supplemental and rudimentary. Supplemental teeth, or incisiform teeth, are extra teeth of regular size and shape [1]. They could lead to an aesthetic issue and raise the possibility of crowding [1]. The present case shows an unusual occurrence of a talon cusp on both the labial and palatal surfaces of the mesiodens.

The talon cusp exhibits a wide variation in its shape, size, and location. Hattab FN et al., classified the talon cusp into major talon, which is type 1, minor talon, type 2, and type 3, being trace talon [2].

In this case, both the cusps are categorised as type 1 or major talon cusp variant. Complications linked to talon cusps include occlusal disruption, cusp fracture, pulpal exposure, open bite, periodontal concerns due to excessive occlusal load, poor aesthetics, and the development of caries along developmental grooves [3].

The lingual location of the anomaly is more frequent, but facial talon cusps have also been described [4]. A case similar to the present case report was reported by Topaloğlu Ak A et al., where a micro-CT investigation was done and showed no pulpal extensions within both facial and palatal talon cusps [5].

Siraci E et al., reported a case of supernumerary primary incisor with the occurrence of both labial and palatal talon cusp [6]. Additionally, CBCT of the tooth revealed pulpal extensions within both talon cusps.

The coexistence of talon cusps on both the labial and palatal surfaces of a mesiodens is a rare dental anomaly requiring thorough clinical and radiographic evaluation. Early diagnosis and a multidisciplinary approach to treatment planning are essential for preventing functional, aesthetic, and occlusal complications.

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