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Case Report

The unusual intruder: A palatal supplemental supernumerary teeth case report and literature review

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Abstract

Background: Supernumerary teeth are a very common dental anomaly. Mesiodens are the most common supernumerary teeth. It is more common in males. The most common complications related to mesiodens are midline diastema, crowding of teeth, ectopic eruption, cystic formations, etc.

Case Report: A 10-year-old male patient reported with a complaint of palatally erupted mesiodens which was causing irritation to the tongue and lower gums. The case was managed by extraction of the mesiodens teeth after routine examinations.

Discussion: The most common mesiodens are the conical or peg-shaped mesiodens which are in the midline between the two central permanent incisors. But this case reports a palatally placed supplemental mesiodens which is very similar to the incisor teeth.

Conclusion: Mesiodens are causes of several complications so extraction is the best possible treatment modality, and it should be done as early as possible in children and adolescents.

Keywords: Case report, Supernumerary teeth, Hyperdontia, Mesiodens, Supplemental teeth

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1. Introduction

Supernumerary teeth, or Hyperdontia, are found in about 0.3% to 3.8% of the population with more commonly occurring in males (males: female= 2:1). A 1967 study by Luten reported the prevalence of supernumerary teeth to be between 1% and 3%,[1] a range supported by McKibben and Brearley's 1971 research.[2] Pinkham's 1988 work highlighted a higher occurrence of supernumerary teeth in children with conditions like cleft palate and cleidocranial dysostosis.[3] This rare genetic disorder, which affects bone and tooth development, is strongly associated with an increased likelihood of extra teeth.[4] Most commonly reported variations of supernumerary teeth are mesiodens, paramolar, distomolar, and premolar supernumeraries out of which mesiodens is the most common supernumerary teeth, accounts nearly 80% of the occurrence of supernumerary teeth with a prevalence of 0.15% to 2.2%.[5] It's formation begins during the third trimester of pregnancy, appears in the oral cavity during the first decade of life especially during 7 to 9 years of age; it is rarely found in primary dentition.[1,6] The most common morphological classification of mesiodens is as follows:

1. Small peg shaped conical mesiodens.
2. Those with more than one cusp or tubercle are tuberculate mesiodens.
3. Those resembling normal incisor teeth are eumorphic or supplemental mesiodens.
4. Those resembling a molar are molariform mesiodens.
5. Mass of tooth like structure with no specified shape or form are odontome or atypical mesiodens. Mesiodens may remain horizontally impacted or impacted in an inverted direction else may be fully erupted.[7]

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2. Case Report

A 10-year-old male patient reported to the Department of Pedodontics and Preventive Dentistry in Kalinga Institute of Dental Sciences with a complaint of an extra erupted teeth in the upper front teeth region. On clinical examination, a mixed dentition was revealed, the supernumerary tooth in the premaxilla area were seen to be palatally placed behind the normally erupted incisor teeth 11. **(Figure 1)** There was no history of pain, tenderness or trauma. The medical and familial history was noncontributory. The extraoral examination was done and found to be normal. Radiographic examination revealed supplemental mesiodens with complete root formation with no other impacted counterpart. **(Figure 2)** No occlusal interference or tissue impingement was observed. Blood investigations were done, and report findings were normal. Extraction of the mesiodens was planned. Treatment plan was discussed, and consent was obtained from the parents of the child. Maxillary anterior forceps were used for extraction of the mesiodens under local anesthesia. The wound healing was uneventful, and no post operative complications were presented during that time. **(Figure 3–4)**

Figure 1: Preoperative view of upper arch showing palatally erupted mesiodens

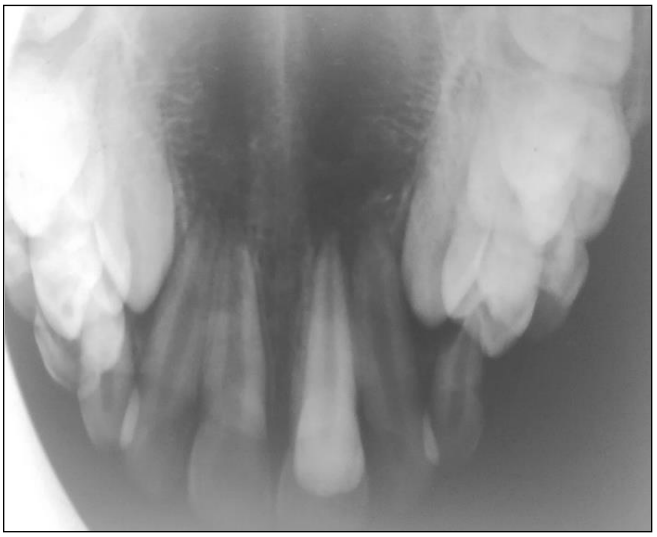

Figure 2: Occlusal radiograph of upper arch

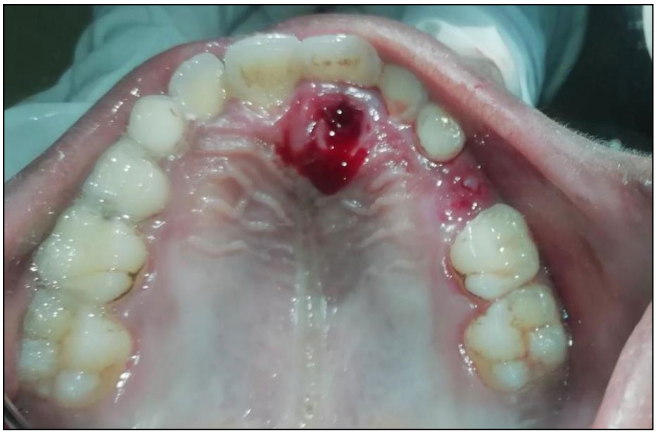

Figure 3: Postoperative view of upper arch showing mesiodens and mixed dentition

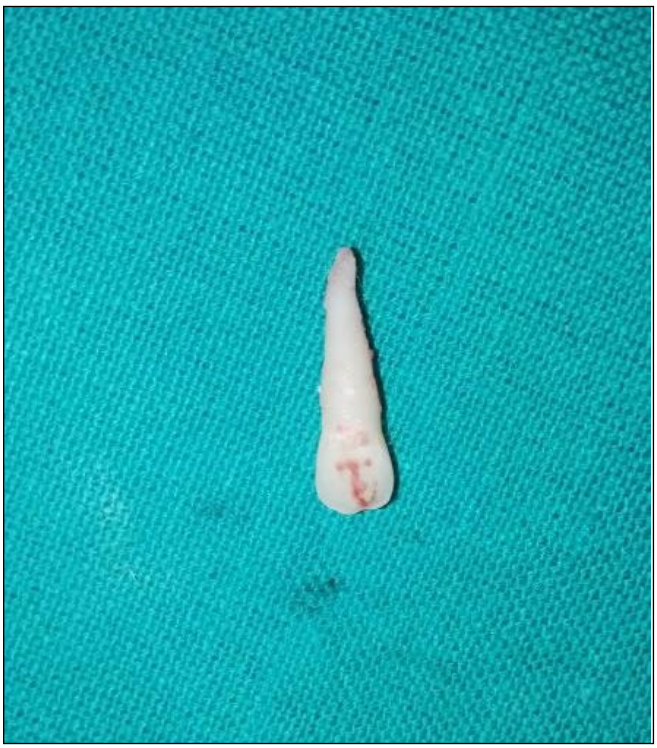

Figure 4: Extracted mesiodens teeth

3. Discussion

There are various etiological theories of mesiodens like the dichotomy theory, genetic theory and hyperactivity theory. Dichotomy theory highlights that certain environmental factors like inflammation, unusual pressure or trauma may result in the tooth germs to divide into two equal or unequal fragments. These divisions lead to the development of extra teeth. The genetic theory puts forth that family history and genetic predisposition play a significant role, as mesiodens tend to occur more frequently in individuals with a family history of the condition where certain inherited traits, mutations or variations in specific genes can cause abnormalities in tooth development. The hyperactivity theory is the most accepted theory. It suggests that the hyperactive dental lamina is the etiological cause of mesiodens. During the process of tooth development, the dental lamina, which is responsible for the formation of the tooth buds, may become

hyperactive and generate one or more additional tooth germs in the midline of the premaxillary area, which may lead to the formation of mesiodens.[6]

The most common form mesiodens that have been reported are the conical or peg-shaped mesiodens. It generally erupts between the two maxillary permanent central incisors in the midline of the premaxillary area. But this case reports a palatally placed supplemental mesiodens which is very similar to the incisor teeth. This tooth is palatally placed, and no impingement of tissues was visible, neither interference with occlusion was observed. Henry and Post[8] had suggested some complications that could be avoided by delaying the extraction of mesiodens up to the age of 10 years when the root formation of the central incisors will be complete. It would reduce the risk of root damage and disruption of blood supply to the adjacent teeth and tissues and thus the vitality of the adjacent teeth may not be jeopardized.[9] There is another school of thought which suggest early removal of mesiodens before the root formation is complete to reduce need of orthodontic treatment.[10] As long as the coronal part of the dental follicle is intact there is chance of migration of the mesiodens even if it is impacted, which might disturb the alignment of the incisors.[11] Thus, impacted mesiodens are also recommended for extraction keeping in mind the age of the child, the tolerance capability for surgical removal of the tooth, the stage of root development, etc., hence they need to be kept under keen observational follow-up. Clark's rule (SLOB technique) is followed for locating the position of the mesiodens radiographically. Extraction of the teeth is recommended to prevent cystic complications (4-9% cases) or formation of carcinoma.[3]

There are various syndromes like Down syndrome, Nance-Horan syndrome, Cleidocranial dysplasia, Gardner's syndrome, Cleft palate, and Trichorhinophalangeal syndrome which have been found to be associated with the occurrence of mesiodens.[3] There are several associated complications that may occur due to mesiodens which include impaction, retention or delayed eruption of impacted incisors, displacement or rotation of the erupted central incisors, ectopic eruption or eruption into the nasal cavity, midline diastema, root resorption of adjacent teeth, cystic degeneration; mesiodens also often causes crowding, caries, root anomaly or pulpitis.[7,9]

In the present case, the mesiodens were fully erupted and causing irritation to the surrounding tissues thus extraction of the same was indicated. Extraction of the mesiodens was done under topical and injectable local anesthesia . Post extraction healing was uneventful. The spontaneous eruption of mesiodens may account for several factors like the depth of the tooth in the bone, angulation of the tooth, space available in the arch for eruption and amount of root developed. Complications are found to be lesser when the mesiodens is palatally located and greater the distance of the mesiodens from the incisors, lesser the complications as it is further away from the eruption pathway.[7] There were no evidence of complications such as dentigerous cyst, pulpitis of the mesiodens, root anomaly or intra oral infections reported in this case.[9] Recent studies have revealed that dental pulp stem cells derived from mesiodens possess the ability to differentiate into adipogenic and osteogenic lineages. This suggests that supernumerary teeth, often discarded after extraction, could be a promising and valuable source of human dental pulp stem cells.[10] Despite multiple studies in the said topic, this tooth was detected quite late that is at the age of 10 years, indicating need to raise awareness among practitioners and parents, to encourage early screening and intervention to reduce long-term orthodontic complications.

4. Conclusion

The presence of the mesiodens, especially the impacted cases may invite unnecessary complications. It is advisable extraction of mesiodens in all cases whether impacted or fully erupted as most mesiodens have dental tissues of altered compositions as compared to their regular counterparts. Early diagnosis and regular radiographic examinations are necessary in such cases. Mesiodens are generally indicated for extraction in infants and adolescents to prevent adverse impacts to adjacent teeth or tissues and in some cases even cyst formation.[11] Publishing a case report on mesiodens remains valuable as it enhances dental education by providing a detailed resource for students and professionals. Despite being common, variations in presentation and treatment warrant discussion. Every case report with its clinical insight, and treatment approach contributes to research by serving as a reference for future studies. Ultimately, it strengthens dental literature while establishing credibility and supporting the passion for research and writing in dentistry.[12]

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Mahabob MN, Anbuselvan GJ, Kumar BS, Raja S, Kothari S. Prevalence rate of supernumerary teeth among non-syndromic South Indian population: An analysis. *J Pharm Bioallied Sci*. 2012;4 (Suppl 2):S373–5. https://doi.org/10.4103/0975-7406.100279
2. McKibben DR, Brearley LJ. Radiographic determination of the prevalence of selected dental anomalies in children. *ASDC J Dent Child*. 1971;38(6):390–8.
3. Orhan AI, Ozer L, Orhan K. Familial occurrence of nonsyndromal multiple supernumerary teeth. A rare condition. *Angle Orthod*. 2006;76(5):891–7. https://doi.org/10.1043/0003-3219(2006)076[0891:FOONMS]2.0.CO;2
4. Akhil JE, Prashant B. Shashibushan k. Mesiodens: A case report and literature review. *Inter Ped DentOpen Acc J*. 2018;1(3). https://doi.org/10.32474/IPDOAJ.2018.01.000113
5. Primosch RE. Anterior supernumerary teeth: Assessment and surgical intervention in children. *Pediatr Dent*. 1981;3(2):204–15.
6. Shrimahalakshmi NC, Shivanna V. Mesiodens: Review of literature with case report. *J Dent Sci*. 2021;8(2):14.

7. Nam OH, Lee HS, Kim MS, Yun KH, Bang JB, Choi SC. Characteristics of mesiodens and its related complications. *Pediatr Dent*. 2015;37(7):E105-9.
8. Henry RJ, Post AC. A labially positioned mesiodens: case report. *Pediatr Dent*. 1989;11(1):59–63.
9. Ramesh K, Venkataraghavan K, Kunjappan S, Ramesh M. Mesiodens: A clinical and radiographic study of 82 teeth in 55 children below 14 years. *J Pharm Bioallied Sci*. 2013;5(Suppl 1):S60–2. https://doi.org/10.4103/0975-7406.113298
10. Meighani G, Pakdaman A. Diagnosis and management of supernumerary (mesiodens): a review of the literature. *J Dent (Tehran)*. 2010 Winter;7(1):41–9.
11. Huang AH, Chen YK, Lin LM, Shieh TY, Chan AW. Isolation and characterization of dental pulp stem cells from a supernumerary tooth. *J Oral Pathol Med.* 2008;37(9):571–4. https://doi.org/10.1111/j.1600-0714.2008.00654.x
12. Alsuwaida MM. A supernumerary tooth: A case report of a mesiodens. *Int J Case Rep Images*. 2023;14(2):115–7.

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