

Case Report

Rare but handle with care: A Case Report of supernumerary tooth in maxillary first molar region

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ABSTRACT:

Supernumerary teeth are the teeth present in addition to the normal set of teeth. They may be single, multiple, unilateral or bilateral erupted or unerupted and in one or both jaws. Multiple supernumerary teeth are rare in individuals with no other associated diseases or syndromes. Our case presents with a supernumerary tooth in permanent dentition that too in Maxillary First molar Region, which is very rare.

Keywords: Rare case, supernumerary tooth, molar region, maxilla

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INTRODUCTION

Supernumerary teeth are an odontomatologic anomaly and may be defined as any teeth or tooth substance in excess of the usual configuration of 20 deciduous, and 32 permanent teeth.[1] Supernumerary teeth may occur as single or multiple. It can be unilaterally or bilaterally. It can be erupted or impacted. One may notice it in one or both jaws, and in the deciduous as well as in permanent dentition. The reported prevalence of supernumerary teeth in the permanent dentition ranges from 0.1% to 3.8% and from 0.3% to 0.6% in the deciduous dentition.[2] Single supernumeraries occur in 76-86% of cases, double supernumeraries in 12-23% of cases, and multiple supernumeraries in less than 1% of cases.[3,5,6,8,9] Multiple hyperdontia is rare in individuals with no other associated diseases or syndromes. The presence of multiple supernumerary teeth may be part of developmental disorders such as Cleft lip and palate, Cleidocranial dysostosis, Gardner's syndrome, Fabry-Anderson's syndrome, Ellis-Van Creveld syndrome (Chondroectodermal dysplasia), Ehlers-Danlos syndrome, Incontinentia

Pigmenti, and Tricho-Rhino-Phalangeal syndrome [3] Supernumerary teeth can be found in almost any region of the dental arch.[10] These teeth have a striking predilection for maxilla over mandible. They are most frequently located in the maxilla, the anterior medial region, where 80% of all supernumerary teeth are found. More rarely, they can be located in the superior distomolar zone, inferior premolar, superior premolar, inferior distomolar, superior canine zone, and inferior incisor.[11] This article presents a rare case report of an unusual occurrence of a supernumerary teeth in the maxilla in first molar region.

CASE REPORT

A 50 years old, male patient reported to the department of Oral Medicine and Radiology, Yamuna Institute of Dental Sciences and Research, with chief complaint of pain in left upper back region of mouth since 5 days. History of present illness dates back to 1 month since when the patient experienced food lodgement in left upper back region of mouth while

chewing food. He noticed sensitivity to sweets followed by sensitivity to hot and cold food since last 15 days. He was experiencing moderate, throbbing intermittent pain since last 5 days, which is aggravated by taking food and relieved by medication. He gave history of pain referring towards the temple region of the same side during nights. No relevant medical and dental history suggested by the patient. Family history was non contributory. On extra oral examination, No abnormality was observed. On intraoral examination, soft tissue examination revealed presence of periodontal pocket between 24 and 25. No mucosal lesion was observed throughout the mouth. Hard tissue examination revealed carious tooth with

respect to 24 and 25. On percussion 24 and 25 were tender. On examination, a supernumerary teeth was present in the region of 26 (conical shape). [Photograph 1]

An IOPA was done with respect to 24, 25 and 26 region and it revealed loss of lamina dura around the roots of 24 and 25 with caries approaching the pulp. The root of supernumerary tooth was straight and crown showed conical shape. [Photograph 2]

A final diagnosis of chronic apical periodontitis with respect to 24 and 25 was given with supernumerary 26 region. 24 and 25 managed by root canal treatment followed by crown fabrication. Patient was advised to follow up after 6 months.

Figure 1: Clinical photograph of the supernumerary tooth in Maxillary first molar region



Figure 2: IOPA Radiograph in Maxillary first molar region



DISCUSSION

The occurrence of supernumerary tooth in Maxillary First molar region is relatively uncommon. The exact etiology of this anomaly is still not completely understood. Several theories have been suggested for their occurrence such as the 'phylogenetic theory', [17] the 'dichotomy theory,' [18] a hyperactive dental lamina, [15,19] and a combination of genetic and environmental factors-unified etiologic explanation. [19]

The 'phylogenetic theory' relates to the phylogenetic process of atavism (evolutionary throwback), which has been suggested. Hyperdontia is the result of the reversional phenomenon or atavism. Atavism is the return to or the reappearance of an ancestral condition or type. In past centuries, the third molar was rarely absent in the primitive dentition; it was comparable in size to the second molar and a fourth molar was often present. Phylogenetic evolution has resulted in a gradual reduction in dimensions of the dental arches, which in turn resulted in a decrease in both the number as well as the size of man's teeth, causing greater development of the neurocranium than the splanchnocranium. Hence, a supernumerary paramolars may be an atavistic appearance of the fourth molar of the primitive dentition. [17] This theory has been rejected by many authors. The 'dichotomy theory' is where a supernumerary tooth such as a paramolar is created as a result of dichotomy of the tooth bud. The supernumerary tooth may develop from the complete splitting of tooth bud. [18] The tooth bud splits into two equal or different-sized parts resulting in two teeth of equal size or one normal and one dysmorphic tooth, respectively.

A hyperactive dental lamina where the localized and independent hyperactivity of dental lamina is the most accepted cause for the development of the supernumerary tooth. It is suggested that paramolars are formed as a result of local, independent, conditioned hyperactivity of the dental lamina. [15,19] According to this theory, the lingual extension of an additional tooth bud leads to a eumorphic tooth, whereas the rudimentary form arises from proliferation of epithelial remnants of the dental lamina induced by pressure of the complete dentition. [20] While others tend to believe that hyperdontia is a disorder with pattern of multifactorial inheritance originating from hyperactivity of dental lamina. Remnants of the dental lamina can persist as epithelial pearls or islands, "rests of Serres" within the jaw. If the epithelial remnants are subjected to initiation by induction factors, an extra tooth bud is formed resulting in the development of either a supernumerary tooth or odontome. [21] The most accredited theory sustains that teeth in excess of the normal number are of a combination of genetic and environmental factors-unified etiologic explanation. [19] This could be explained by the presence of supernumerary teeth in the relatives of subjects affected with this dental anomaly. The

hereditary trait does not exhibit a simple Mendelian pattern. This may be probably due to the low penetrance of dominant autosomal transmission, which implies that some generations are not affected by the disorder. However, although the literature points to a familial predisposition to hyperdontia, in our case there was no such relationship noticed in any of the direct relatives of the patient.

During diagnosis, it is also necessary to differentiate and rule out other structures that may occur in the molar region like a paramolar tubercle or a fused supernumerary tooth. Bolk, in 1916, was the first to describe an additional cusp occurring on the buccal surfaces of upper and lower permanent molars, which he named as paramolar tubercle. [37] Dahlberg in 1945 suggested that paramolar cusp is a term applied to any stylar or anomalous cusps, supernumerary inclusion or eminence occurring on the buccal surfaces of both upper and lower premolars and molars. He introduced paleontologic nomenclature when he referred to this structure as "protostylid" if present in the lower molars and "parastyle" when present in the upper molars. [38] It is well accepted today that this structure is a derivative of cingulum and variable in its delineation. This structure is usually expressed on the buccal surface of the mesiobuccal cusp (paracone) and rarely on the distobuccal cusp (metacone). Its significance is unknown but it is reported that as paramolar tubercles arise from the buccal cingulum, these structures in human dentition probably represent the remnants of the cingulum of mammals and the lower primates.

Supernumerary teeth may erupt normally, remain impacted, appear inverted, or assume an abnormal path of eruption. Supernumerary teeth with a normal orientation will usually erupt. However, only 13-34% of all permanent supernumerary teeth erupts normally as compared with 73% of primary supernumerary teeth. [3] The rest remain unerupted and may produce complications. If complications arise, they may include prevention or delayed eruption of associated permanent teeth; retention or ectopic eruption of adjacent teeth; displacement, or rotation of adjacent teeth; crowding due to insufficient space for the eruption of other teeth; malocclusion due to adiminution of space in the dental arch when the paramolar erupts; interdental spacing between molars; traumatic bite when buccally positioned paramolar causes laceration of the buccal mucosa; interference during orthodontic treatment; dilaceration or delayed or abnormal root development of associated permanent teeth; follicular cyst formation from the degeneration of the follicular sac of the supernumerary tooth; neoplasm; trigeminal neuralgia when the paramolar compresses the nerve, pulp necrosis, and root resorption of adjacent tooth due to the pressure exerted by the paramolar tooth; [31] dental caries due to plaque retention in inaccessible areas; and gingival inflammation and localized periodontitis in the surrounding soft tissues. [30,35] As

seen in our case, the presence of supernumerary tooth in Maxillary First molar Region resulted in plaque retention and inflammation in the surrounding periodontium.

The most basic radiographic investigation is the introrral periapical (IOPA) radiograph, with additional views of the anterior maxilla and mandible, in the form of occlusal radiographs. If concerns are present regarding the possibility of root resorption of a permanent tooth caused by a supernumerary tooth, then long-cone periapical radiographs will be required for diagnosis. In order to localize an unerupted supernumerary or normal tooth, the use of vertical or horizontal parallax technique is recommended.[39] Parallax is the apparent movement of an object against a background, caused by a change in observers position. This can be achieved with two separate radiographs taken at different angles, but showing the same region. When using this technique, the reference point is usually the root of an adjacent tooth. The image of the tooth that is further away from the X-ray tube head will move in the same direction as the tube head; the image of the tooth that is closer will move in the opposite direction. In addition, cone-beam computed tomography has recently been used to evaluate ST.[40] This technique yields detailed three dimensional images of local structures and proves useful in pretreatment evaluation of ST and surrounding structures.

The clinical management of patients with supernumerary tooth usually depends upon its position and on its effect or potential effect on adjacent teeth and important anatomical structures. Treatment options for supernumerary teeth may include observation or extraction. Observation involves no treatment other than monitoring the patient clinically and radiographically. In our case, patient was advised to follow up 6 monthly. Patient was advised to maintain good oral hygiene to prevent the occurrence of dental caries and to maintain surrounding periodontal health.

Conclusion:

A clinician must be aware of the various types of supernumerary teeth and should recognize signs suggestive of their presence. One should perform required investigations when these conditions are suspected and upon diagnosis each case should be managed appropriately in order to minimize complication.

REFERENCES

- Schulze C. Developmental abnormalities of the teeth and jaws. In: Gorlin RJ, Goldman HM, editors. *Thoma's oral pathology*. St Louis: CV Mosby; 1970. Pp. 112–22.
- Díaz A, Orozco J, Fonseca M. Multiple hyperodontia: Report of a case with 17 supernumerary teeth with non syndromic association. *Med Oral Patol Oral Cir Bucal*. 2009;14:E229–31.
- Rajab LD, Hamdan MA. Supernumerary teeth: Review of the literature and a survey of 152 cases. *Int J Paed Dent*. 2002;12:244–54.
- Kinirons MJ. Unerupted premaxillary supernumerary teeth: A study of its occurrence in males and females. *Br Dent J*. 1982;153:110.
- Zhu JF, Marcushamer M, King LD, Henry RJ. Supernumerary and congenitally absent teeth: A literature review. *J Clin Pediatr Dent*. 1996;20:87–95.
- So LL. Unusual supernumerary teeth. *Angle Orthod*. 1990;60:289–92.
- Moore SR, Wilson DF, Kibble J. Sequential development of multiple supernumerary teeth in the mandibular premolar region—a radiographic case report. *Int J Paediatr Dent*. 2002;12:143–5.
- Rosenzweig KA, Garbarski O. Numerical aberrations in the permanent teeth of grade school children in Jerusalem. *Am J Phys Anthropol*. 1965;23:277–83.
- Solares R, Romero MI. Supernumerary premolars: A literature review. *Pediatr Dent*. 2004;26:450–8.
- Garvey MT, Barry HJ, Blake M. Supernumerary teeth an overview of the classification, diagnosis and treatment. *J Can Dent Assoc*. 1999;65:612–6.
- Leco Berrocal MI, Martín Morales JF, Martínez González JM. An observational study of the frequency of supernumerary teeth in a population of 2000 patients. *Med Oral Patol Oral Cir Bucal*. 2007;12:E134–8.
- Gay Escoda C, Mateos Micas M, España Tost A, Gargallo Albiol J. Otras inclusiones dentarias. Mesiodens y otros dientes supernumerarios. In: Gay Escoda C, de Cirugía Bucal Aytés Berini L. *Tratado*, Tomo I, editors. *Dientes temporales supernumerarios. Dientes temporales incluidos*. 1st ed. Madrid: Ergon; 2004. Pp. 497–534.
- Stafne E. Supernumerary teeth. *Dent Cosmos*. 1932;74:653–9.
- Mitchell L. Supernumerary teeth. *Dent Update*. 1989;16:65–9.
- Primosch RE. Anterior supernumerary teeth – assessment and surgical intervention in children. *Pediatr Dent*. 1981;3:204–15.
- Gregg TA, Kinirons MJ. The effect of the position and orientation of unerupted premaxillary supernumerary teeth on eruption and displacement of permanent incisors. *Int J Paediatr Dent*. 1991;1:3–7.
- Smith JD. Hyperodontia: Report of a case. *J Am Dent Assoc*. 1969;79:1191–2.
- Liu JF. Characteristics of premaxillary supernumerary teeth: A survey of 112 cases. *ASDC J Dent Child*. 1995;62:262–5.
- Brook AH. A unifying etiological explanation for anomalies of human tooth number and size. *Archs Oral Biol*. 1984;29:373–8.
- Sykaras SN. Mesiodens in primary and permanent dentitions. *Oral Surg Oral Med Oral Pathol*. 1975;39:870–4.
- Hattab FN, Yassin OM, Rawashdeh MA. Supernumerary teeth: Report of three cases and review of the literature. *ASDC J Dent Child*. 1994;61:382–93.
- Masztalerz A. Paramolar teeth. *Czas Stomatol*. 1968;21:249–51.
- Kim HS, Song YH, Lee YS, Park KM. A case of bilateral paramolar teeth. *Taehan Chikkwa Uisa Hyophoe Chi*. 1973;11:131–3.

24. McVaney TP, Kalkwarf KL. Misdiagnosis of an impacted supernumerary tooth from a panoramic radiograph. *Oral Surg Oral Med Oral Pathol.* 1976;41:678–81.
25. Srivastava RP, Singh G. Mandibular paramolar. *Uttar Pradesh State Dent J.* 1979;10:109–11.
26. Kumasaka S, Hideshima K, Shinji H, Higasa R, Kubota M, Uchimura N. A case of two impacted paramolar in lower right molar dentition. *Kangawa Shigaku.* 1988;23:417–23.
27. Kakolewska-Maczyńska J, Zyszko A. Paramolar and distomolar teeth. *Czas Stomatol.* 1990;43:232–7.
28. Loh FC, Yeo JF. Paramolar with bifid crown. *Oral Surg Oral Med Oral Pathol.* 1993;76:257–8.
29. Timocin N, Yalcin S, Ozgen M, Tanyeri H. Supernumerary Molars and Paramolars, A Case Report. *J Nihon Univ Sch Dent.* 1994;36:145–50.
30. Hou GL, Lin CC, Tsai CC. Ectopic supernumerary teeth as a predisposing cause in localized periodontitis. Case report. *Aust Dent J.* 1995;40:226–8.
31. Dubuk AN, Selvig KA, Tellefsen G, Wikesjö UM. Atypically located paramolar. Report of a rare case. *Eur J Oral Sci.* 1996;104:138–40.
32. Scheiner MA, Sampson WJ. Supernumerary teeth: A review of literature and four case reports. *Aust Dent J.* 1997;42:160–5.
33. Shimizu T, Miyamoto M, Arai Y, Maeda T. Supernumerary tooth in the primary molar region: A case report. *J Dent Child (Chic)* 2007;74:151–3.
34. Ballal S, Sachdeva GS, Kandaswamy D. Endodontic management of a fused mandibular second molar and paramolar with the aid of spiral computed tomography: A case report. *J Endod.* 2007;33:1247–51.
35. Parolia A, Kundabala M. Bilateral Maxillary Paramolars and Endodontic Therapy: A Rare Case Report. *J Dent (Tehran)* 2010;7:107–11.
36. Nagaveni NB, Umashankara KV, Radhika NB, Reddy PB, Manjunath S. Maxillary paramolar: Report of a case and literature review. *Arch Orofac Sci.* 2010;5:24–8.
37. Bolk L. Problems of Human Dentition. *Am J Anat.* 1916;19:91.
38. Dahlberg AA. The Paramolar Tubercle (Bolk) *Am J Phys Anthropol.* 1945;32:97.
39. Houston WJ, Stephens CD, Tulley WJ. *A Textbook of Orthodontics.* 2nd ed. Atlanta, Georgia: Wright Publications; 1992. Pp. 174–5.
40. Liu DG, Zhang WL, Zhang ZY, Wu YT, Ma XC. Three dimensional evaluations of supernumerary teeth using cone-beam computed tomography for 487 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2007;103:403–11.