

Non-Syndromic Multiple Hyperdontia: Report of 4 Cases

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ABSTRACT

Hyperdontia is the presence of extra teeth in relation to the normal primary or permanent dentition and the extra teeth is supernumerary teeth. Presence of multiple supernumerary teeth without an associated syndrome (non-syndromic) is rare. Four cases with multiple supernumerary teeth were reported in our Department, and the cases were found to be non-syndromic due to the negative family history, extraoral findings, and pathology. Here we are including discussion, review of literature, and the syndromes associated with multiple supernumerary teeth with the four different non-syndromic Hyperdontia cases.

KEYWORDS: Hyperdontia, Multiple Teeth, Multiple Supernumerary Teeth, Nonsyndromic, Supernumerary Teeth

INTRODUCTION

Hyperdontia is the development of an increased number of teeth in either primary or permanent dentition, and the additional teeth are termed Supernumerary teeth (ST). Supernumerary teeth may be single or multiple, and they vary in size, shape, and locations. Presence of supernumerary teeth can lead to complications such as retained teeth, delayed eruption of permanent teeth, alterations in neighbouring teeth, dental malposition, ectopic eruption, occlusal problems, diastema, and rotation.¹

The occurrence of multiple supernumerary teeth without any abnormal extraoral finding or syndrome (non-syndromic) is rare. This report presents four cases of multiple supernumerary teeth without any syndrome or developmental anomaly. All the cases were confirmed non-syndromic after eliciting family history and after consulting a general physician.

CASE REPORT

Case 1

A 16-year-old male patient came to our dental college with a chief complaint of spacing between the upper front tooth region since 5 years and wished to do orthodontic treatment. On examination, midline diastema with high maxillary frenal attachment and crowding was noted on both arches with buccally erupted 23 (Fig.1) and partially erupted 35 (Fig 2). Panoramic radiograph showed the presence of a missing tooth 48 with four impacted supernumerary teeth, one resembling premolar between 44 and 45; one resembling canine in the second quadrant displacing 23 buccally; two supernumeraries between 33 and 35, with the distal supernumerary impeding the eruption of 35 (Fig.3). After orthodontic and surgical



Fig.1: Intraoral photograph showing midline diastema, buccally erupted 23



Fig.2 Intraoral photograph showing partially erupted 35.



Fig 3: Panoramic view showing impacted Supernumeraries, in 23, 34,35, and 45 region, with distal supernumerary in 35 region preventing eruption of 45.

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consultation, it was decided to proceed with the extraction of all the impacted ST as one was impeding a tooth eruption and one displaced a canine buccally and also considering the risk of development of dentigerous cysts.

Case 2

A 21-year-old male patient reported to our Department with a chief complaint of a white tooth-like structure in the lower left back tooth region since 1 month. On examination, an ST was found erupting lingually between 34 and 35 (Fig.4). Intraoral periapical radiograph confirmed the presence of a fully formed ST between 34 and 35 (Fig.5). But, Panoramic view showed not only the presence of this supernumerary but also an additional ST, developing between 44 and 45 (Fig.6), thus emphasizing the need of additional radiographs even in such simple case. It was decided to extract the supernumerary in the third quadrant, after surgical consultation, to prevent root resorption of 35 and to keep observing the ST in the fourth quadrant, every year, for any cystic changes.



Fig.4: Intraoral photograph showing an erupting supernumerary in 34 35 region



Fig 5: Intraoral periapical radiograph showing a supernumerary tooth between 34, 35



Fig.6: Panoramic View showing a fully developed supernumerary in 34 35 region and a developing supernumerary in 44 45 region.

Case 3

A 21-year-old male patient visited our college with a chief complaint of sensitivity in the upper left back tooth region on having sweets since 3 months. On examination, a supernumerary was noted on both sides of the maxillary arch. The ST on first quadrant buccal to 16 and 17 was small and resembled the morphology of maxillary molar, which is a characteristic of the molariform type of paramolar. Whereas, the paramolar in the second quadrant, buccal to 26, 27, had caries, was rotated and resembled the morphology of premolar, which was peculiar to this case (Fig.7). Panoramic view and lateral cephalogram confirmed the presence of the supernumeraries (Fig 8, 9). The paramolar with caries was advised extraction, and as the other paramolar did not pose any problem to the patient at the time of visit, it was decided to review the case every 6 months.



Fig.7: Intraoral photograph showing two paramolars; molariform type in first quadrant and a paramolar resembling a premolar in second quadrant.



Fig.8: Panoramic View showing the presence of paramolars in 16,17 and 26,27 region



Fig 9: Lateral cephalogram depicting the paramolar in the first quadrant.

Case 4

A 41-year-old female patient reported with a chief complaint of broken teeth fragments in the upper back tooth region since 2 years. Medical, family history and extraoral examination were non-contributory. On examination multiple root stumps and multiple missing teeth were noted on both the arches along with a conical type of ST in the second quadrant palatally between 25 and 26 (Fig.10) and a molariform type of ST in the premolar region, distal to 34 and missing 35 regions (Fig.11), suggestive of parapremolar. Para-premolars usually erupt buccally. But, in this case, multiple parapremolars were present with different morphologies, and one erupted palatally. No radiographs were taken as the patient was not willing for radiation exposure. As the patient had no complaints with these teeth, the patient was referred for the extraction of other root stumps and advised to report if any symptoms occur.



Fig.10: Intraoral photograph showing a conical parapremolar palatal to 25, 26

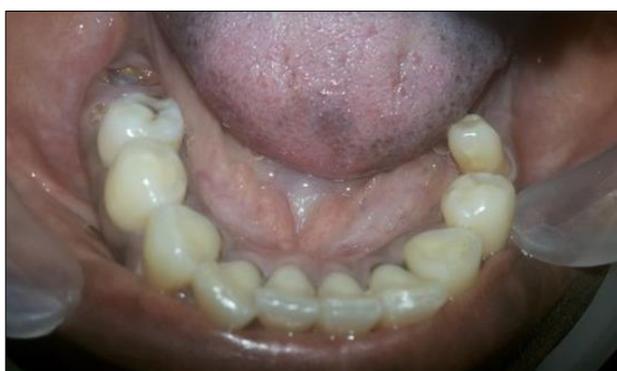


Fig.11: Intraoral photograph showing molariform parapremolar

RESULTS

All our cases supported the strong male predilection in a ratio 3:1 and showed the rudimentary variant of supernumerary teeth except the second case. Though Multiple nonsyndromic supernumeraries are common in the maxillary anterior region followed by maxillary molar region, different sites, mandibular premolar and maxillary anterior region were noted in Case 1, and maxillary and mandibular posterior region in Case 4. Different

morphologies of the paramolars were noted in Case 3 in the maxillary posterior region. Different morphology and location of parapremolars (conical type palatally, molariform type in the arch), were noted in Case 4. Out of the multiple supernumerary premolars in Case 2, one was an incidental finding in the radiograph.

DISCUSSION

Hyperdontia is defined as the existence of an excessive number of teeth in relation to the normal dental formula in the primary or permanent dentition, and they may develop at any location in either upper or lower dental arch or both.¹ Nonsyndromic Multiple Hyperdontia (NSMST), is a disorder that describes an excessive amount of teeth compared with 20 and 32 teeth in the primary and permanent dentition, respectively, without being part of another disease condition, such as cleidocranial dysplasia, Gardner's syndrome or cleft lip and palate.^{2,3} Although Batra et al (2005) and Yusof et al (1990) defined NSMST as the presence of 5 or more supernumeraries^{4,5}, Yagüe-García et al (2009) describe it as the involvement of 2 or more dental series by supernumerary teeth.⁶

Several theories have been postulated for supernumerary teeth (ST), such as the dichotomy of the tooth germ, phylogenetic theory, the theory of local, independent conditioned hyperactivity of dental lamina and a combination of genetic and environmental factors.^{4,7,8} The prevalence of supernumerary teeth in whites is between 0.1% and 3.8%, with a higher rate in Asian population⁹ and in nonsyndromic conditions is 0.08%.⁷ Supernumerary teeth are more frequently found in the permanent dentition than primary dentition, and the frequency in the deciduous dentition varies from 0.3 to 0.8%.^{3,9}

Nonsyndromic multiple supernumerary teeth are mostly seen in the maxillary anterior region followed by maxillary molar region.^{2,5,10} Multiple supernumerary premolars are more common in the mandible than in the maxilla, unilaterally than bilaterally. ST has a strong male predominance in a ratio 2:1.^{3,4}

Supernumerary teeth may erupt normally or may remain impacted or may show an abnormal eruptive pattern and can cause several problems like alteration in the neighbouring teeth, delayed eruption of permanent teeth, ectopic eruptions, diastema, rotation and resorption of adjacent teeth, cystic lesions.^{3,7,11}

Classification of Supernumerary teeth:

- Based on their morphology: rudimentary, supplemental, odontomes³
- Based on their location in the dental arch: mesiodens, parapremolar, paramolar and distomolar⁹
- Based on their shape: conical, tuberculate, molariform¹²

Rudimentary or dysmorphic defines teeth of abnormal shape and smaller size, including conical, tuberculate, and molariform types,⁵ whereas supplemental teeth is

characterized by the same form and function of adjacent teeth and present at the end of the particular tooth series.¹³ A conical supernumerary tooth is small, peg-shaped (coniform) tooth with normal root; tuberculate (multicusped) supernumerary tooth is short, barrel-shaped tooth with a normal appearing crown, or invaginated but rudimentary root. A mesiodens is a typical conical supernumerary tooth in the maxillary anterior incisor region. A paramolar is a supernumerary molar usually small and rudimentary, situated buccally or palatally to one of the maxillary molars.¹⁴ A distomolar is a fourth permanent molar, placed either distal or distolingual to the third molar and a parapremolar most commonly occurs in the interproximal space buccal to the upper first and second premolars.³

Multiple impacted supernumerary teeth may be associated with syndromes like Gardner's syndrome, Cleidocranial dysplasia, Trichorhinophalangeal syndrome, Fabry Andersons syndrome, Ellis van Creveld Syndrome.^{3,9}

Most of the non-syndromic cases of Hyperdontia are asymptomatic and identified by routine radiographs. Patients with non-syndromic hyperdontia who have ST without any functional or esthetic complications should be kept on periodic evaluation for cystic changes (dentigerous cyst) and those posing problems to the existing dentition should be considered for extraction.

CONCLUSION

The occurrence of multiple supernumerary teeth in non-syndromic patients is rare and usually asymptomatic. But if not associated with any complications or syndromes, they should be adequately evaluated both clinically and radiographically and can be kept under observation for pathologies.

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