

# Anterior bilateral supernumerary teeth in primary dentition: a case report

## Abstract

Human growth and development of dentition generally follows an orderly pattern of an eruption sequence of primary dentition of 20 teeth, followed by an interim time of mixed dentition and concluding with 32 permanent teeth. Tooth development is a continuous process with a number of physiologic growth processes and various morphologic stages interplay to achieve the tooth's final form and structure. Interference with the stage of initiation, a momentary event, may result in single or multiple missing teeth or supernumerary teeth. Early diagnosis and treatment of such cases is important to prevent complications. In case of supernumerary teeth in primary teeth the patient should be kept on strict regular follow up with respect to the path of eruption of succedaneous tooth.

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## Introduction

Tooth development is a chain of physiologic growth processes and different morphologic stages coordinated to get the tooth's final anatomy and structure. Disturbance at the stage of initiation, a momentary event, sometimes leads to single or multiple missing teeth (hypodontia or oligodontia respectively) or supernumerary teeth.<sup>1</sup> Primosch<sup>2</sup> sorted supernumerary teeth into two types according to shape. The ones with normal shape and size (eumorphic) i.e. 'supplemental', or 'incisiform', and the others of different shape and smaller size (dysmorphic), are named as 'rudimentary' and they include 'conical', 'tuberculate' and 'molariform' teeth. Supplemental supernumerary teeth (ST) are similar to one of the normal series of tooth and the phenomenon is termed as duplication. It is observed that such teeth are usually present distally in the tooth series. Many supernumerary teeth in deciduous dentition are of the supplemental type and very rarely get obstructed to erupt. Sometimes the supernumerary teeth are of irregular shape called odontomes which are more often to get impacted.

## Prevalance

Males have more predilection of prevalence of supernumerary teeth over females as per past studies, but it is without any reasonable explanation. In deciduous dentition incidence is comparatively lesser than in the permanent dentition which falls in the range of 0.3% and 0.8%, whereas in permanent dentition, it is observed between 0.1% and 3.8% in various populations. The location for Supernumerary conditions to happen can be any, but there is quite proclivity for the maxilla.<sup>4-6</sup> 76-86% of cases are estimated to occur as single tooth supernumerary.<sup>7</sup> Supernumerary teeth in the premaxillary region often challenge the diagnostic and managerial concerns of the practitioner.

## Theories of development of supernumerary teeth

The etiology of the supernumerary teeth remains unclear. The 'phylogenetic theory', the 'dichotomy theory', a Hyperactive dental lamina are some suggested theories for their manifestation. Also combination of genetic and environmental factors unifies their etiological explanation.<sup>8-10</sup> The 'phylogenetic theory' has been suggested that relates to the phylogenetic process of atavism (evolutionary throwback). Hyperdontia is the result of the atavism

and atavism is the return to the appearance of an ancestral condition or type. Phylogenetic evolution has led to decrease in both the count and the size of teeth and supernumerary premolars may be an atavistic appearance of the third or fourth premolars of the primitive dentition.<sup>11</sup> However this theory has not been accepted by many authors. The 'dichotomy theory' involves sprouting of supernumerary tooth due to dichotomy of the tooth bud. If a tooth bud splits into two parts it might result into two teeth which might be further be of equal sizes or one normal and the other dimorphic. As per hyperactive dental lamina the development of the supernumerary teeth is caused due to the localized and independent hyperactivity of dental lamina; it proposes that supernumerary teeth are formed due to local, independent, conditioned hyperactivity of the dental lamina.<sup>2,12</sup> According to this theory, the lingual extension of an additional tooth bud induces eumorphic tooth, while the proliferation of epithelial remnants of the dental lamina aroused by pressure of the complete dentition results in rudimentary form Sykaras.<sup>10</sup> As per Hattab<sup>1</sup> and co-workers' belief hyperdontia is a disorder with pattern of multifactorial inheritance originating from hyperactivity of dental lamina. An extra tooth can be formed by initiation of epithelial remnants of dental lamina i.e. Cell rests of Serre. This initiation by induction factors leads to formation of either a supernumerary tooth or odontome. Causes of congenital anomalies like supernumerary tooth, hypodontia, megadontia, microdontia are multifactorial including genetics and environmental as 2 major factors.

## Case report

A 3-year-old male patient was brought by his parents to the Department Pediatric and Preventive Dentistry, GNDDC Sunam having multiple decayed teeth in upper front teeth region. The clinical extra-oral examination did not show any different alteration while the clinical intraoral examination revealed the presence of excess teeth as of normal dental formula in maxillary anterior region. The patient had 22 teeth in the oral cavity showing normal pattern. Teeth present in the oral cavity were 55, 54, 53, 52, 51, 61, 62, 63, 64, 65 and 51 S, 61 S in maxilla and 75, 74, 73, 72, 71, 81, 82, 83, 84, 85 in mandible. No other anomalies were found, with exception to the tooth 51, 51S, 61, 61S had caries. His mother stated that the family had never noticed that he had double teeth. No further information obtained from familial and medical histories was related to the case.

Radiographic examination revealed those teeth 51, 51S, 61, 61S had their pulp chambers individualized with normal size suggesting supplemental supernumerary teeth. Occlusal radiograph and OPG were not possible because of patient's cooperation. The therapeutic conduct was restricted to the orientation of the mother about the preservation of the primary teeth. All carious teeth were restored and patient is being kept on regular follow-up. Patient's mother was informed about the condition and they were advised to keep regular follow-up to keep a check on eruption of succedaneous tooth (Figure 1–4).



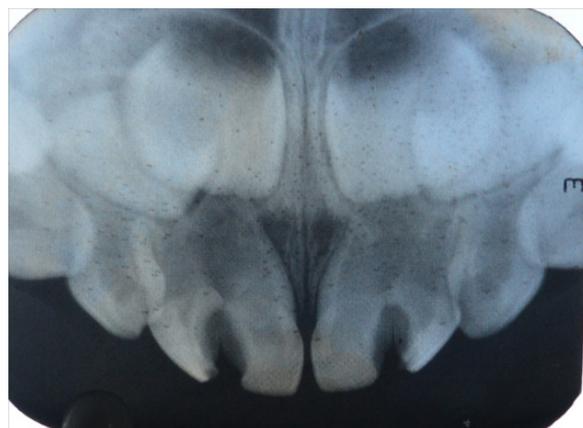
**Figure 1** Anterior intraoral view.



**Figure 2** Intraoral maxillary occlusal views.



**Figure 3** Intraoral mandibular occlusal view.



**Figure 4** Intraoral periapical radiographs of maxillary anterior teeth.

## Discussion

As per the literature, in deciduous dentition, supernumerary teeth are barely observed. Humerfelt et al.<sup>13</sup> pointed out that hyperdontia in primary dentition is often ignored as the additional teeth usually come up with normal shape and in proper alignment, as in the case reported above. While there are meager cases being reported of supernumerary deciduous teeth, it may partly be because of the fact that their reasonably normal eruption causes them to go overlooked. It is been noticed that until the germination of the permanent anterior teeth, many children do not undergo an initial dental check-up, which is very much adequate for supernumerary deciduous anterior teeth that have erupted and exfoliated normally to be detected to eradicate the root cause of further complications.<sup>14</sup> It's hard to differentiate between normal tooth and its auxiliary twin. ST may manifest deep palatal pit and coronal invagination. As the name implies, supplemental teeth refer to those teeth which are duplications of teeth in the normal series. Supplemental teeth in both primary and permanent dentition are most commonly located in the anterior maxillary region; however, whereas supplemental teeth in permanent dentition are most likely to appear as extra maxillary and mandibular lateral incisors, supplemental primary teeth are most likely to appear as upper central incisors.<sup>13</sup> As the name implies, supplemental teeth refer to those teeth which are duplications of teeth in the normal series. Supernumerary teeth may occur singly, multiply, unilaterally or bilaterally in the maxilla, mandible or both.<sup>2,14</sup> Bilateral cases make up only 8% of the total.<sup>15–18</sup> Multiple supernumerary teeth are reported to be associated with a number of syndromes, as cleft lip and palate, Gardner's syndrome, cleidocranial dysostosis, and Chondroectodermal dysplasia. No syndrome was identified in the case reported above, although the existence of multiple supernumerary teeth without being associated with any syndrome is extremely rare. The clinician should be cautious for the possibility of hyperdontia in the permanent dentition whenever there is a case of hyperdontia present in primary dentition. A careful radiographic survey of both dental arches can give a clear preview of any probable problems likely to evolve during the child's growth and development to both the clinician and the parents.<sup>19</sup> In the present case report, supplemental teeth in the primary dentition were not superseded by supplemental teeth in the same location in the permanent dentition as observed in the radiograph. There can be many complications due to supernumerary teeth. Impaction; delayed eruption, or ectopic eruption of adjacent teeth; crowding; development of median diastema;

eruption into the floor of the nasal cavity; formation of primordial or follicular cysts, with significant bone destruction; root resorption of adjacent teeth; and esthetic problems, including those associated with crowding are some of the significant issues resulting from ST.<sup>2,20,11</sup> In case of making decision while extracting extra teeth, if two teeth are equally well formed, the one with the most displacement is the one that should be extracted.<sup>22–24</sup>

## Conclusion

Supernumerary teeth can give origin to various complications during the eruption and alignment of normal dentition. However, undergoing early diagnosis and treatment can prevent such problems. In case of supernumerary teeth in primary teeth the patient should be kept on strict regular follow up with respect to the path of eruption of succedaneous tooth.

## Acknowledgements

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## Conflict of interest

The author declares that there is no conflict of interest.

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