Multiple supernumerary teeth in a nonsyndromic association: Rare presentation in three siblings

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INTRODUCTION

Multiple supernumerary teeth is defined as the existence of any excessive number of teeth in relation to the normal dental formula (i.e., 20 in deciduous dentition and 32 in the permanent dentition).¹ It is common to primary as well as permanent dentition and can occur in maxilla or mandible. This anomaly was first reported between AD 23 and 79.²

Brook reported that supernumerary teeth were present in 0.8% of primary dentitions and 2.1% of permanent dentitions when 2000 school children were surveyed.³ Luten reported that the prevalence of supernumerary premolars in permanent dentition is between 0.075% and 0.26% and that supernumerary premolars account for only 10% of all the supernumerary cases.⁴ He suggested the following order of decreasing frequency: upper incisors (50%), mesiodens (36%) and upper central incisors (11%) followed by bicusps (3%) in the primary and mixed dentitions.⁵ In permanent dentition, the most frequent location for the presence of supernumerary teeth are: the midline of the maxilla, palatal area of upper incisors, lower premolar area and distal of the upper and lower third molars.⁴

According to morphology, supernumerary teeth could be supplementary (they duplicate the anatomy of the teeth) or rudimentary (dysmorphic, tubercular or conoid).⁶

They can be either syndrome-associated or nonsyndrome associated. Those associated with syndromes have been reported with Gardner’s syndrome, Cleidocranial dysplasia, Fabry-Anderson syndrome, Ehler Danlos syndrome, Crouzon’s disease, Hallermann-Streiff...
syndrome, Down syndrome, Ectodermal dysplasia and Orodigito Facial Dystosis. However, nonsyndromic multiple supernumerary teeth are very rare with the incidence of <1%.[7,8]

The case reports presented here are showing the presence of multiple supernumerary teeth in three siblings. The authors could find only two reported cases in literature regarding the presence of supernumerary teeth in family members making it a rare case.

**CASE REPORTS**

**Case 1**
A 30-year-old male patient presented to the Department of Periodontology, Faculty of Dentistry, Jamia Millia Islamia, New Delhi, India, with the chief complaint of pain in the right upper posterior region for the past 2 weeks. The patient was medically fit. The extraoral examination did not reveal any abnormality. On intraoral examination, deep proximal caries was observed in tooth 3 which was the offending tooth. Tooth #4 and #20 were grossly decayed, and carious lesion was seen in tooth #19. The patient had Angle's Class I malocclusion and gave a history of extraction of a mandibular left premolar 3 years ago. Further examination of the oral cavity revealed a total of six supernumerary teeth: four supernumerary teeth in the mandibular premolar region (2 on each side) and two supernumerary teeth in the maxillary premolar region (1 on each side) [Figures 1 and 2]. The supernumerary teeth were of different types: Supplementary type in tooth #4 and tooth 29, #30. Rudimentary type (conoid) was present in relation to tooth #12, #13 and #20, #21 (tooth #20 was extracted earlier).

An orthopantomogram (OPG) was taken. It revealed the presence of 4 impacted supernumerary teeth (2 in each quadrant of maxillary arch which resembled premolars) which were observed in relation to canines. This was an incidental finding as the patient had no complaints regarding the same throughout his life. Thus, there were a total of 10 supernumerary teeth in premolar region, without any associated syndrome [Figure 3].

The patient was educated regarding his radiographic findings. He was advised extraction of grossly decayed teeth and restoration with tooth 19. The offending tooth (no. 3) was treated with endodontic therapy. All these treatments were completed. Following which the patient was advised for extractions of all the erupted supernumerary teeth and further orthodontic correction for malocclusion. However, the patient did not agree for any further dental treatment.

During these treatment visits, the patient disclosed about a similar condition in two of his siblings: a sister and brother. As these people were not available for clinical examination, we could not collect all the relevant data. The OPG of brother could be obtained with his intraoral photographs.
Due to religious reasons, the OPG of patient’s sister could not be obtained. Only, her intraoral photograph was collected.

Case 2
The details of the patient’s sister were as follows: She was the second child who had a full complement of teeth. There were three supernumerary teeth (supplementary type) in mandibular premolar region (2 in the right quadrant and one in the left quadrant). Maxillary arch did not show the presence of any extra teeth. She had got a tooth extracted (tooth no. #28). Thus, she has a total of 34 teeth [Figure 4].

Case 3
The findings of the patient’s brother were as follows: The eldest sibling had the presence of one supernumerary tooth (rudimentary type) in the maxillary left quadrant in the premolar region. There were a total of 31 permanent teeth as tooth #30 was extracted. There was no supernumerary tooth in mandibular arch [Figures 5 and 6].

DISCUSSION
Non-syndrome associated multiple supernumerary teeth are a rare occurrence. There are only a few published cases of nonsyndromic association of multiple supernumerary teeth. A single supernumerary tooth occurs in 76%–86% of cases; double supernumeraries occur in 12%–23% of cases and multiple supernumerary teeth in <1% of cases.[7] Rajab and Hamdan further report that the percentage of cases having 5 or more supernumerary teeth is <1%. The first case reported here falls in this 1% cases. The other two cases are not unusual as they are having <5 extra teeth except that they are present in the patient’s siblings. The authors could find only two cases of nonsyndromic multiple supernumerary teeth in siblings.[9,10] The cases reported by Desai and Shah had multiple supernumerary teeth in two brothers.[9] Another case reported by Inchingolo et al. reported the presence of multiple supernumerary teeth in three siblings. This was similar to our cases.[10]

Yusof and Açikgöz et al. reported that mandibular premolar region is the most common site for supernumerary teeth, especially in nonsyndromic association.[8,11] However, in our case, there were more number of supernumerary teeth in maxillary arch.

The etiology of multiple supernumerary teeth is not totally understood. Numerous theories have been proposed for their development like the Dichotomy theory[12] and Hyperactivity theory.[13] The dichotomy theory states that there is a splitting of the tooth bud into two equal or different sized parts resulting in the formation of two teeth of equal size or one
Supernumerary teeth may erupt normally or may be impacted in the jaws. They can be at heterotopic positions or at times can show abnormal eruptive patterns. Pathological conditions such as delayed eruption or noneruption, displacement of permanent teeth, malformation or resorption of adjacent roots or cyst formation can be associated with these teeth. They can be seen at varied places such as nasal cavity, maxillary sinus, maxillary tuberosity, incisive suture and between orbit and brain.

It is usually an incidental finding during dental visits as these teeth do not create any symptoms. Usually, if these teeth are asymptomatic, they can be left in place, and the patient can be kept on observation. The surgical extraction should only be considered if they develop pathological symptoms or pose any risk of development of pathology. In our case, we carried out his dental treatment related to his symptoms and complaints. However, the patient did not agree for extraction of teeth or for orthodontic correction. Hence, he was kept on recall visits.

Supernumerary teeth are associated with genetic syndromes but rarely occur as isolated nonsyndromic trait. Since our patients were not mentally retarded and their appearance was normal, there was no possibility of the syndromic condition. Thus, the present case report represents a rare form of hyperdontia which requires thorough clinical and radiological investigations to reach a diagnosis and determine an effective treatment plan.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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