Nonsyndromic Multiple Supernumerary Teeth: A Case Report of 11 Supernumerary Teeth

Balaji Krishnan, Balaji Narasimhan, C Nirupama

ABSTRACT

Hyperdontia is an odontostomatologic anomaly characterized by an excess in both erupted and non-erupted teeth number. A 23-year-old female patient reported to us with a chief complaint of malaligned teeth and inability to maintain oral hygiene. Extraoral examination did not reveal any abnormality. Intraoral examination revealed multiple supernumerary teeth in maxillary and mandibular premolar region. The teeth present were: 11, 12, 13, 14, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48. Apart from these teeth there were. One half erupted supernumerary tooth, distal to 14, one supernumerary tooth palatal to 14, one supernumerary tooth buccal to 15, one supernumerary tooth lingual to 34, one supernumerary tooth lingual to 36, one supernumerary tooth mesial lingual to 45, one supernumerary tooth distolingual to 45. The panoramic radiograph was taken to study the presence of impacted teeth. It revealed: Two supernumerary teeth in 1st quadrant, three supernumerary teeth in 2nd quadrant, three supernumerary teeth in 3rd quadrant, one impacted mesial to 36, three supernumerary teeth in 4th quadrant, one impacted mesial to 46. Whenever, supernumerary teeth are diagnosed, a proper decision regarding the appropriate management should be made carefully. In our opinion, the management of multiple supernumerary teeth poses a great challenge to clinicians. Therefore, it vital to for an interdisciplinary approach for the treatment.

Keywords: Hyperdontia, Gardner's syndrome, Ectodermal dysplasia.


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INTRODUCTION

Hyperdontia is an odontostomatologic anomaly characterized by an excess in both erupted and nonerupted teeth number. Supernumerary teeth are defined as any supplementary tooth or tooth substance in addition to usual number of teeth, otherwise it is ‘false’ if caused by a delay in shedding of primary dentition beyond the transition period. It can be described as ‘real’ if determined by an increased number of teeth, otherwise it is ‘false’ if caused by a delay in shedding of primary dentition beyond the transition period.2-5 Hyperdontia is reported quite frequently (males:females, around 2:1),3 and it seems to occur more often in patients with hereditary factors concerning this anomaly.6 The prevalence of multiple supernumerary teeth ranges from 8 to 27% of cases.7,8 The most frequent locations for 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.9 The crowns of supernumerary teeth may show either a normal appearance or different atypical shapes and their roots may be completely or incompletely developed.10 The most frequent complication of having supernumerary teeth is the dental malposition2-4 of teeth of the normal series (erupted or not) which in turn leads to clinical consequences of orthodontic and/or surgical nature; more rarely, impacted supernumerary teeth are the cause of follicular cysts, neuralgic manifestations, dysodontiasis of permanent teeth.2,4 The etiology is unknown, although a number of theories have been proposed: Atavism, tooth germ dichotomy, hyper-activity of the dental lamina, and genetic factors comprising a dominant autosomal trait characterized by low penetrance.11,12 Numerous hereditary syndromes have been described in association with hyperdontia, such as cleidocranial dysplasia, Crouzon syndrome, Ehlers-Danlos syndrome, Gardner syndrome, Nance-Horan syndrome and cleft lip and palate.13 Mutations in the genes RUN X2, APC and NHS are associated with the etiology of cleidocranial dysplasia, Gardner and Nance-Horan syndrome respectively.14 However, no mutations providing nonsyndromic supernumerary teeth have been discovered yet.15 The present article highlights a case of multiple impacted supernumerary teeth not associated with any disorder.

CASE REPORT

A 23-year-old female patient reported to us with a chief complaint of misaligned teeth and inability to maintain oral hygiene. Extraoral examination did not reveal any abnormality. Intraoral examination revealed multiple supernumerary teeth in maxillary and mandibular premolar region. The teeth present were: 11, 12, 13, 14, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48. Apart from these teeth there were (Figs 1 to 5):

1. One-half erupted supernumerary tooth, distal to 14
2. One supernumerary tooth palatal to 14
3. One supernumerary tooth buccal to 15
4. One supernumerary tooth lingual to 34
5. One supernumerary tooth lingual to 36
6. One supernumerary tooth mesiolingual to 45
7. One supernumerary tooth distolingual to 45.

Conflict of interest: None declared
The panoramic radiograph (Fig. 6) and the occlusal radiographs (Figs 7 and 8) were taken to study the presence of impacted teeth. It revealed:
1. Two supernumerary teeth in 1st quadrant.
2. Three supernumerary teeth in 2nd quadrant.
3. Three supernumerary teeth in 3rd quadrant, one impacted mesial to 36.
4. Three supernumerary teeth in 4th quadrant, one impacted mesial to 46.

The proposed treatment plan consists of extraction of retained and erupted supernumerary teeth in order to initiate orthodontic treatment. At present, the patient is under orthodontic treatment and is under regular clinical and radiological examinations.

**DISCUSSION**

The etiology of supernumerary teeth remains unclear, but several theories have been suggested for their incidence. The localized and independent hyperactivity of the dental lamina is the most accepted cause for the development of supernumerary teeth. Some proposed that supernumerary teeth are formed as a result of local, independent, conditioned hyperactivity of the dental lamina.16-18 It also seems that Asians are more affected with supernumeraries than others.19-21 Supernumerary teeth may erupt normally or remain impacted, but in either case their presence may
lead to clinical problems. Most problems associated with supernumeraries are because of their potential to interfere with normal occlusal development or with orthodontic mechanics such as crowding, separation, impaction, or delayed eruption of permanent teeth, malocclusion, rotations, retained deciduous teeth, palatally displaced permanent canines, abnormal eruption sequence, and compromised space closure. In addition to these, supernumerary teeth can also cause cystic formation or they can erupt into the nasal cavity or in the maxillary sinus.17,22-27

The apparently morphologically normal finding of multiple supernumerary teeth in the absence of an associated systemic condition or syndrome is an uncommon phenomenon. In our case, the most common site with supernumerary teeth were mandibular premolar region, which is consistent with findings of Yusof,28 who reviewed most of the published cases in the English language literature and found that when nonsyndromal multiple supernumerary teeth are present,29 the most common site affected is the mandibular premolar region, followed by the molar and the anterior regions, respectively. Solares and Romero17 found that 74% of supernumerary teeth are located in the mandibular premolar region. Recent case reports of multiple supernumerary teeth confirm this finding.22,30 In our case there were 6 supernumerary teeth in the mandibular premolar region.

Review of literature shows only a few reported cases of nonsyndromic multiple supernumerary teeth. Sivapathasundharam and Einstein (2005)31 have reported 12 impacted supernumerary teeth similar to premolars in a 20-year-old male. Srivatsan and Aravindha Babu (2007)32 have reported occurrence of 10 supernumerary teeth. Leslie (1984)33 reported a case of nonsyndrome multiple impacted supernumerary teeth that resembled regular mandibular premolar teeth. It has been stated that in nonsyndromic cases, mandibular premolar region is the preferred site of occurrence.34 But in the case presented here, supernumerary teeth were found in both right and left premolar region of both maxilla and mandible.

Whenever, supernumerary teeth are diagnosed, a proper decision regarding the appropriate management should be made carefully. In our opinion, the management of multiple supernumerary teeth poses a great challenge to clinicians. Therefore, it is vital for an interdisciplinary approach for the treatment.

Mostly, supernumerary teeth are managed surgically, often due to retention of the permanent teeth in the region.35 Surgical removal of the teeth may cause damage to adjacent structures.22 In patients with the supernumerary teeth not causing alterations in the eruption, position or integrity of the permanent dentition, a conservative approach is preferred.35 Each case must be therefore analyzed individually concerning its management taking into account untoward developments like malocclusion, retention of permanent teeth or tendency for cyst formation, etc. Regular clinical examination with periodic radiographic examination is recommended.

REFERENCES

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ABOUT THE AUTHORS

Balaji Krishnan (Corresponding Author)
Professor, Department of Orthodontics and Dentofacial Orthopedics Tagore Dental College and Hospital, Chennai, Tamil Nadu, India
Phone: 9840400990, e-mail: kbalaji1@yahoo.com

Balaji Narasimhan
Lecturer, Department of Oral Medicine and Radiology, Tagore Dental College and Hospital, Chennai, Tamil Nadu, India

C Nirupama
Reader, Department of Orthodontics and Dentofacial Orthopedics Karpaga Vinayaga Institute of Dental Sciences, Chennai Tamil Nadu, India