

## Multiple Impacted Supernumerary Teeth: Review & Case Series

Dr. Rahul VC Tiwari<sup>1\*</sup>, Dr. Shanti Tenneti<sup>2</sup>, Dr. Irram Abbas<sup>3</sup>, Dr. Mohammed Mustafa<sup>4</sup>, Dr. Pooja Pandey<sup>5</sup>, Dr. Heena Tiwari<sup>6</sup>, Dr. Deepesh Mathur<sup>7</sup>

<sup>1</sup>Assistant Professor, FOGS, OMFS, Department of OMFS, Sri Sai College of Dental Surgery, Vikarabad, Telangana, India

<sup>2</sup>Assistant Professor, Department of Periodontist, SSCDS, Vikarabad & Consultant Periodontist, FMS Dental Hospitals, Panjagutta, Hyderabad, India

<sup>3</sup>Associate Professor, Department of Public Health Dentistry, Sri Sai College of Dental Surgery, Vikarabad, India

<sup>4</sup>Associate Professor, Department Of Conservative Dental Sciences, College Of Dentistry, Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia

<sup>5</sup>PG Student, Department of Conservative Dentistry & Endodontics, Vyas Dental College and Hospital, Jodhpur, Rajasthan, India

<sup>6</sup>BDS, PGDHHM, Government Dental Surgeron, CHC Makdi, Kondagaon, Chhattisgarh, India

<sup>7</sup>Bachelor of Dental Surgery, Admin, FMS Hospitals, Langar Houz, Hyderabad, India

\*Corresponding author: Dr. Rahul VC Tiwari

| Received: 28.05.2019 | Accepted: 05.06.2019 | Published: 18.06.2019

DOI:10.21276/sjm.2019.4.6.1

### Abstract

The aim of this article is to report three cases of multiple impacted supernumerary teeth and review the literature, analyzing their prevalence, etiology and classification. Supernumerary teeth are those that exceed the normal dental formula. They are more common in men, more common in the upper maxilla, and more prevalent in permanent dentition. Complications associated with supernumerary teeth include dental impaction, delayed eruption, ectopic eruption, overcrowding, spacing anomalies and the formation of follicular cysts. The treatment of supernumerary teeth depends on their type, position, and possible complications, detected clinically and radiographically. No clear consensus exists as to the best time to extract unerupted supernumerary teeth.

**Keywords:** supernumerary teeth, maxilla, radiographically.

**Copyright @ 2019:** This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

### INTRODUCTION

Supernumerary tooth (ST) is defined as “any tooth or odontogenic structure that is formed from tooth germ in excess of usual number for any given region of the dental arch” [1].

They may be unilateral or bilateral and single or multiple, in distribution, occur in any part of the tooth bearing areas in both dental arches, and may occur in primary and permanent dentition [2]. These ST could occur at any region of the dental arch and most commonly in premaxilla. There are several hypotheses which have been proposed to explain the occurrence of ST, and their etiology remains unclear [1, 3].

A combination of environmental and genetic factors has been proposed to explain ST occurrence [4]. Supernumerary teeth cause a range of complications varying from crowding to cyst formation. However, the position of ST is buccal or lingual or within the arch. Localization of ST plays a major role in diagnosis and treatment, especially if surgical intervention is needed [5]. Though, it is clear that early treatment can possibly prevent further complications, some authors anecdotally

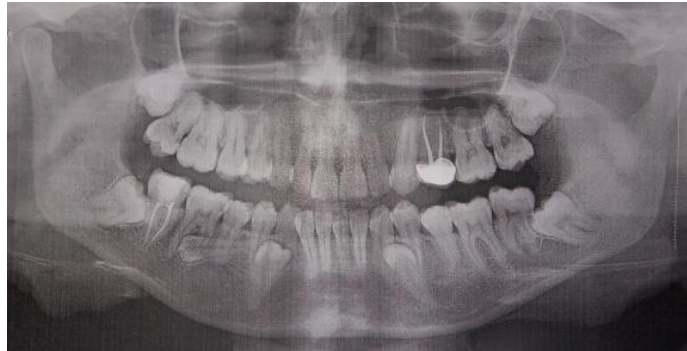
suggested that this approach is hazardous due to possible risk of damage to the developing tooth germs.

Location of ST must be established by different imaging techniques. Although, combinations of intraoral radiographs with panoramic radiographs are usually able to provide the required information, these procedures do not always provide sufficient information concerning the 3-dimensional (3D) relationship of the ST [1, 5, 6].

### Case Presentation

#### Case 1

A 21 year male patient reported to the clinic with a complaint of decayed and pain in relation to lower back tooth. On routine radiographic examination numerous impacted ST was revealed. On panoramic radiograph entire set of dentition was present with erupting third molars. Along with the normal dentition Two para premolar were impacted bilaterally whereas one para premolar horizontally impacted in relation to 44, 45 and 46. There was no history of clinical manifestation was associated with impacted ST (Fig-1).



**Fig-1: Impacted para premolar in mandible bilaterally and horizontally placed supernumerary tooth in relation to 45 and 45**

**Case 2**

26 year male reported to the clinic with a complaint of pain in relation with right lower back region of the jaw. On orthopantomogram mesioangular impaction with 48 was revealed along with numerous supplementary ST. There were three ST in anterior

maxilla in relation to 21 and 24 while five teeth were impacted in mandible in which one teeth was 44 and other two were bilateral ST. And other two was bilaterally impacted mandibular third molars for which he reported to the clinic (Fig-2).



**Fig-2: Missing 44 in occlusion with bilaterally impacted supernumerary teeth in relation to 34 and 45. Impacted mandibular third molar bilaterally**

**Case 3**

On routine dental radiographic examination of a 32 year old male patient there were 6 six ST were noticed. Four ST were in maxilla (two in each quadrant) while two ST were in mandible in third quadrant (Fig-3).

unremarkable. Complete blood count and routine blood chemistry were normal. On extra oral examination all three patients were moderately built and nourished male without physical abnormalities and deformities. To ensure optimum function and aesthetics an interdisciplinary approach were followed between oral surgeon, endodontist and orthodontist for management of these cases.

All three cases there were no familial history of impacted teeth. There medical history was



**Fig-3: Multiple impacted supernumerary teeth in anterior maxilla. Two impacted supernumerary teeth in relation to 34 and 35**

## DISCUSSION

The incidence of ST for males is higher than females [7-10]. Contrarily, Clayton [11] and Bäckman and Wahl in [12] reported more female predilection. Higher prevalence figures for ST were reported in Mongoloid groups than in other racial groups [13]. The conical ST in anterior region is the most common type of ST which was also seen in all our three cases. The incidence, location, and morphology may vary depending on gender. Mitchell [14] reported that females are more commonly affected than males with a 2: 1 ratio in permanent, while no significant difference was found in primary dentition. It has also been reported that subphenotypes of ST also presented gender, where males are commonly affected in midline and premolar regions and incisor and canine regions were in females [8]. The etiology of supernumerary teeth remains unclear and various theories have been postulated to explain how and why they develop. Various studies [15, 10, 16, 24] have claimed that they are the result of hyperactivity of the dental lamina where the epithelial cells that form supernumerary teeth remain for long periods. Other studies [17, 16] show that the main etiological factor is genetic predisposition, having to do with a disorder associated with a dominant autosomal gene. Elsewhere, they are thought to be associated with diverse syndromes or due to phylogenetic theory, environmental factors or tooth germ dichotomy.

Phylogenetic theory, although it has been discounted as it would only explain single anomalies of ectopic teeth [8], proposes that the presence of supernumerary teeth involves a regression towards now extinct ancestral tissues. While in the process of evolution dentition has passed from polyodonty to oligodonty, dental morphology has become more complex, evolving from homodonty to heterodonty [18]. With regard to environmental factors, in tooth germ dichotomy, an imbalance between molecules can cause the tooth germ to divide into two parts, of equal or different size, which will result in either two teeth of the same size or one normal and one dysmorphic tooth [19].

It is rare for hyperdontia to occur in isolation; it is usually associated with some other disorder such as harelip, cleft palate, or syndromes such as Gardner syndrome, Down syndrome, cleidocranial dysplasia, Zimmerman-Laby syndrome or Noonan syndrome (20).

A study (21) of 205 patients with harelip and cleft palate found a frequency of supernumerary teeth of 11.7%. Several other studies (22, 23) have observed cases of cleidocranial dysplasia with the presence of supernumerary teeth.

The gene responsible for cleidocranial dysplasia is the RUNX2 and mutations of this gene could explain the existing correlation between the

syndrome and the presence of supernumerary teeth (24).

## CONCLUSION

Dental history and radiographic examination excluded partial anodontia, and the medical and familial history with extra oral examination was not suggestive of any syndrome or metabolic disorder. Idiopathic multiple impacted teeth finding is a rare entity. These cases have to be addressed with multidisciplinary approach.

## REFERENCES

- Omer, R. S., Anthonappa, R. P., & King, N. M. (2010). Determination of the optimum time for surgical removal of unerupted anterior supernumerary teeth. *Pediatric dentistry*, 32(1), 14-20.
- King, N. M., Lee, A. M., & Wan, P. K. (1993). Multiple supernumerary premolars: their occurrence in three patients. *Australian dental journal*, 38(1), 11-16.
- Anthonappa, R. P., Omer, R. S., & King, N. M. (2008). Characteristics of 283 supernumerary teeth in southern Chinese children. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*, 105(6), e48-e54.
- Brook, A. H. (1984). A unifying aetiological explanation for anomalies of human tooth number and size. *Archives of oral biology*, 29(5), 373-378.
- Mallinen, S., Anthonappa, R., & King, N. (2011). Radiographic localization of supernumerary teeth in maxilla. *International Journal of Paediatric Dentistry*.
- Anthonappa, R. P., King, N. M., Rabie, A. B. M., & Mallinen, S. K. (2012). Reliability of panoramic radiographs for identifying supernumerary teeth in children. *International journal of paediatric dentistry*, 22(1), 37-43.
- Brook, A. H. (1974). Dental anomalies of number, form and size: their prevalence in British school children. *J. Int. Assoc. Dent. Child.*, 5, 37-53.
- Küchler, E. C., Costa, A. G. D., Costa, M. D. C., Vieira, A. R., & Granjeiro, J. M. (2011). Supernumerary teeth vary depending on gender. *Brazilian oral research*, 25(1), 76-79.
- von Arx, T. (1992). Anterior maxillary supernumerary teeth: a clinical and radiographic study. *Australian dental journal*, 37(3), 189-195.
- Rajab, L. D., & Hamdan, M. A. M. (2002). Supernumerary teeth: review of the literature and a survey of 152 cases. *International Journal of Paediatric Dentistry*, 12(4), 244-254.
- Clayton, J. M. (1956). Congenital dental anomalies occurring in 3,557 children. *J Dent Child*, 23, 206-208.
- Bäckman, B., & Wahlén, Y. B. (2001). Variations in number and morphology of permanent teeth in 7-year-old Swedish children. *International Journal of Paediatric Dentistry*, 11(1), 11-17.

13. Niswander, J. D., & Sujaku, C. (1963). Congenital anomalies of teeth in Japanese children. *American Journal of Physical Anthropology*, 21(4), 569-574.
14. Mitchell, L. (1989). Supernumerary teeth. *Dental update*, 16(2), 65-68.
15. De Oliveira Gomes, C. A. R. L. O. S., Drummond, S. N., Jham, B. C., Abdo, E. N., & Mesquita, R. A. (2008). A survey of 460 supernumerary teeth in Brazilian children and adolescents. *International Journal of Paediatric Dentistry*, 18(2), 98-106.
16. Diaz, A., Orozco, J., & Fonseca, M. (2009). Multiple hyperodontia: report of a case with 17 supernumerary teeth with non syndromic association. *Med Oral Patol Oral Cir Bucal*, 14(5), E229-31.
17. Rao, P. V., & Chidzonga, M. M. (2001). Supernumerary teeth: literature review. *Cent Afr J Med*, 47(1), 22-26.
18. Koussoulakou, D. S., Margaritis, L. H., & Koussoulakos, S. L. (2009). A curriculum vitae of teeth: evolution, generation, regeneration. *International journal of biological sciences*, 5(3), 226.
19. Munne, P. M., Felszeghy, S., Jussila, M., Suomalainen, M., Thesleff, I., & Jernvall, J. (2010). Splitting placodes: effects of bone morphogenetic protein and Activin on the patterning and identity of mouse incisors. *Evolution & development*, 12(4), 383-392.
20. Bayar, G. R., Ortakoğlu, K., & Sencimen, M. (2008). Multiple impacted teeth: report of 3 cases. *European journal of dentistry*, 2, 73.
21. Tereza, G. P. G., Carrara, C. F. D. C., & Costa, B. (2010). Tooth abnormalities of number and position in the permanent dentition of patients with complete bilateral cleft lip and palate. *The cleft Palate-Craniofacial Journal*, 47(3), 247-252.
22. Bufalino, A., Paranaíba, L. M. R., Gouvêa, A. F., Gueiros, L. A., Martelli- Júnior, H., Junior, J. J., ... & Coletta, R. D. (2012). Cleidocranial dysplasia: oral features and genetic analysis of 11 patients. *Oral diseases*, 18(2), 184-190.
23. Nagarathna, C., Shakuntala, B. S., Mathew, S., Krishnamurthy, N. H., & Yumkham, R. (2012). Cleidocranial dysplasia presenting with retained deciduous teeth in a 15-year-old girl: a case report. *Journal of medical case reports*, 6(1), 25.
24. Lee, K. E., Seymen, F., Ko, J., Yildirim, M., Tuna, E. B., Gencay, K., & Kim, J. W. (2013). RUNX2 mutations in cleidocranial dysplasia. *Genet Mol Res*, 12(4), 4567-4574.