

## Case Report

# Non-syndromic multiple unerupted supernumerary teeth

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## Introduction

Supernumerary teeth or hyperdontia is defined as the presence of one or more additional teeth in relation to the normal dental formula that may or may not mimic the normal shape<sup>1,2</sup>. They may occur as single or multiple teeth in one or both jaws and may be unilateral or bilateral. Rarely supernumerary teeth may occur in all four quadrants of the jaw bone as in the index case. Supernumerary teeth can be classified according to their 'form' and 'position' as shown in Table 1<sup>2,4</sup>.

**Table 1: Classification of supernumerary teeth**

By Form	By Position
Conical (supernumerary peg shaped teeth)	Mesiodens (present in the incisor region)
Tuberculate (more than one cusp or tubercle)	Parapremolar (present beside a premolar)
Supplemental (resemble normal teeth)	Paramolar (present beside a molar)
Odontome (a mass of dental tissue)	Distomolar (present distal to the last molar)

Impaction of a single tooth is not uncommon. However, development of multiple impacted teeth is rare and is often associated with developmental anomalies or syndromes such as Gardner syndrome, trichorhino phalangeal syndrome cleidocranial dysplasia, and cleft lip and palate<sup>3,4</sup>. However, supernumerary teeth can occur in patients without any associated syndromes or developmental anomalies.

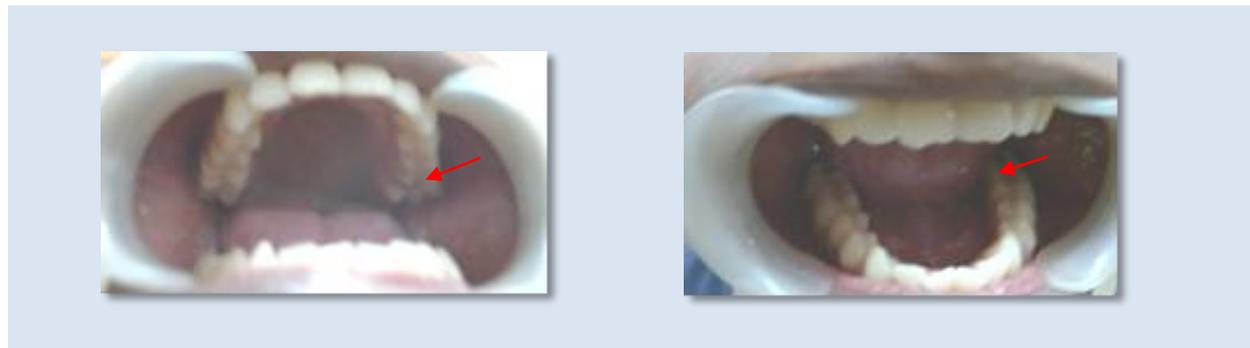
The exact aetiology of supernumerary teeth is still unknown. Several reasons such as abnormal reactions to a local traumatic episode, environmental factors, developmental anomalies and supernumerary teeth associated syndromes have been implicated as causative factors. Many theories have been proposed to explain their presence: According to the 'dichotomy theory of tooth germs', the tooth bud splits into similar or different sized parts, resulting in two similar teeth or a normal and a dismorphic tooth. The 'theory of hyperactivity of the dental lamina' and autosomal recessive or X- linked inheritance, are also widely accepted<sup>5,6,7</sup>.

The presence of supernumerary teeth can cause problems for development of a normal dentition such as, failure of eruption of adjacent permanent teeth, crowding and rotation, occlusal problems, dental malformations, displacement and ectopic eruption, formation of diastema, root resorption and dilacerations of adjacent teeth, loss of vitality and formation of dentigerous cysts. However, they can even be asymptomatic<sup>4,8</sup>.

The unerupted asymptomatic supernumeraries are better left as they are, without surgical intervention, to avoid any damage to the vital anatomical structures such as inferior dental nerve or mental nerve during surgical intervention. However periodical radiographic investigations are recommended for early detection of cystic degenerative changes. If such changes are evident surgical removal is recommended. Nevertheless, it is necessary to carry out additional clinical examination to rule out possible syndromes.

### Case report

A 23-year-old male visited the Department of Restorative Dentistry with a complaint of pain in relation to decayed teeth in left upper and lower posterior region. The patient was generally healthy looking. His family's medical and dental history was noncontributory. Intraoral examination confirmed that the upper left first molar (#26) and lower left second molar (#37) had deep dentinal caries (Figure 1).



**Figure 1: carious upper left first molar (#26) and lower left second molar (#37)**

The intra-oral-periapical (IOPA) radiographs of tooth 26 & 27 were obtained as a baseline investigation prior to dental treatment. The radiographs revealed presence of multiple supernumerary teeth in relation to both upper and lower arches (Figure 2). Dental panoramic tomography (DPT) was performed to identify all the unerupted supernumerary teeth. The DPT radiograph revealed a total of fourteen (14) supernumeraries in all four quadrants and all of them were unerupted. There was no evidence of cystic degeneration around unerupted supernumeraries or any other abnormality (SUE) (Figure 3). The dental formula is given in Table 2.



**Figure 2: Intra-Oral-Periapical (IOPA) radiographs in relation to both carious teeth**

**Table 2: Dental formula showing locations of unerupted supernumeraries (S<sup>UE</sup>)**

S <sup>UE</sup> S <sup>UE</sup> 18 <sup>UE</sup> 17 16 15 14 S <sup>UE</sup> S <sup>UE</sup> 13 12 11	21 22 23 S <sup>UE</sup> 24 25 S <sup>UE</sup> S <sup>UE</sup> 26 27 28 <sup>UE</sup>
48 <sup>UE</sup> 47 46 S <sup>UE</sup> 45 S <sup>UE</sup> S <sup>UE</sup> 44 43 42 41	31 32 33 S <sup>UE</sup> 34 S <sup>UE</sup> S <sup>UE</sup> S <sup>UE</sup> 35 36 37 38 <sup>UE</sup>



**Figure 3: dental panoramic tomography (DPT)**

A comprehensive clinical examination was performed by a specialist in oral medicine to rule out the presence of any syndromes. Based on the history, clinical examination and radiographic investigations, diagnosis was confirmed as non-syndromic multiple supernumerary teeth.

All the teeth were vital except the upper left first molar (#26). Indirect pulp capping and temporary filling was done on the lower left second molar (#37) and endodontic treatment was planned for the non-vital upper left first molar (#26). Patient was advised on the importance of visiting the department of restorative dentistry once in every two years for necessary radiological investigations.

## Discussion

Non-syndromic multiple supernumerary teeth itself is a rare condition and involvement of all four quadrants of the jaw is even more rare. The lower arch premolar region is the most common site of occurrence of supernumerary teeth<sup>9</sup>. This case shows the presence of multiple (fourteen (14)) supernumerary teeth in the premolar area in all four quadrants. The occurrence of non-syndromic supernumerary teeth is more common in the maxilla than in the mandible<sup>10</sup>, and in males than in females<sup>1</sup>, in permanent dentition than in primary dentition<sup>12</sup>, and unilaterally than bilaterally<sup>12</sup>.

The presence of single supernumerary teeth is common in the general population and is often associated with a family history. Multiple supernumerary teeth are associated with some syndromes such as cleidocranial dysplasia and Gardner syndrome<sup>13</sup>. Even though, it is rare to find multiple supernumeraries in individuals with no other associated diseases or syndromes, non-syndromic supernumerary teeth may be related to hereditary factors. Therefore patient's pedigree is important in evaluation of dental complications associated with supernumerary teeth. According to the reported literature the presence of these teeth could lead to a number of complications such as, caries due to plaque accumulation, periodontal disease, impaction of adjacent teeth, delayed eruption, root resorption, undesirable

aesthetics, malocclusions (e.g. spacing/ crowding/ cross bite) due to altered eruption patterns, and endodontic complications due to possible aberrant pulpal and root canal anatomy<sup>14</sup>.

The prevalence of supernumerary teeth in permanent dentition ranges from 0.15% to 3.8%, while the reported incidence of supernumerary teeth in the deciduous dentition is only 0.3% to 1.7%<sup>15,16</sup>. The presence of five or more teeth in addition to the normal dentition is considered as multiple supernumerary teeth with a reported incidence of less than 1%. According to reported supernumerary teeth, 68.6% are single, 20.3% are double and only 11.1 % are multiple. Although nearly 75% of supernumerary teeth are impacted, they remain asymptomatic and are often diagnosed as a coincidental finding during radiographic examination<sup>17</sup>.

Herath *et al* evaluated 219 cases of erupted supernumerary teeth, of which 82.5% presented with one supernumerary tooth and 17.5% with two supernumeraries. In this study 99% supernumeraries were seen in the maxilla and only 1% in the mandible. Most of them were found in the region of premaxilla followed by canine, premolar and molar regions. The commonest shape was conical, followed by tuberculate and odontome. The main problems associated with supernumeraries were malocclusions (59.6%) and delayed eruption (6.6%). In others (33.8%) there was no clinically significant malocclusion<sup>18</sup>.

Early diagnosis as well as maintenance of good oral hygiene is important to minimize the risk of complications resulting from unerupted supernumerary teeth. Surgical intervention is recommended in cases of delay, non-eruption or displacement of permanent teeth, root resorption of adjacent teeth and the presence of cystic changes.

Prior to surgical removal of symptomatic multiple unerupted supernumeraries it is important to inform the patient regarding the risk of damage to adjacent teeth and vital anatomical structures. For asymptomatic unerupted supernumerary teeth, long term radiological follow up is recommended for early diagnosis of any pathological changes. When multiple supernumeraries are associated with other dental anomalies or syndromes, the relevant clinical problems must be prioritized before treating the complications arising from supernumerary teeth.

## References

1. Leco Berrocal MI, Martín Morales JF, Martínez González JM. An observational study of the frequency of supernumerary teeth in a population of 2000 patients. *Med Oral Patol Oral Cir Bucal* 2007; 12 : E134-8. PMID:17322802
2. Sohinderjit Singh, Prerna, Prikshit Gupta. Multiple Supernumerary Teeth: A case report. *Indian Journal of Dental Sciences* 2009; 01:1-4.
3. Santosh M, Freny RK, Subodh S, Kaustubh S. Supernumerary teeth in non-syndromic patients: *Imaging Science in Dentistry* 2012; 42: 41-5. <http://dx.doi.org/10.5624/isd.2012.42.1.41> PMID:22474647 PMCID:PMC3314836
4. Ramsaran AS, Barclay S, Scipio E, Ogunsalu C. Non-Syndromal Multiple Buried Supernumerary Teeth: Report of two cases from the English-speaking Caribbean and a review of the Literature: *West Indian Med J* 2005; 54 (5):334-6. <http://dx.doi.org/10.1590/S0043-31442005000500012> PMID:16459518
5. Liu JF. Characteristics of premaxillary supernumerary teeth: A survey of 112 cases. *ASDC J Dent Child* 1995; 62:262-265. PMID:7593884
6. Sedano HO, Gorlin RJ. Familial occurrence of mesiodens. *Oral Surg Oral Med Oral Pathol* 1969; 27: 360-1. [http://dx.doi.org/10.1016/0030-4220\(69\)90366-1](http://dx.doi.org/10.1016/0030-4220(69)90366-1)

7. Rao PV, Chidzonga MM. Supernumerary teeth: literature review. *Cent Afr J Med* 2001; 47 : 22-6. PMID:11961855
8. Hurlen B, Humerfelt D. Characteristics of premaxillary hyperodontia. A radiographic study. *Acta Odontol Scand* 1985; 43 :75-81.  
<http://dx.doi.org/10.3109/00016358509046490> PMID:3863448
9. Yusof WZ. Non-syndrome multiple supernumerary teeth: literature review. *J Can Dent Assoc* 1990; 56 : 147-9. PMID:2407326
10. Garvey MT, Barry HJ, Blake M. Supernumerary teeth – an overview of classification, diagnosis and management. *J Can Dent Assoc* 1999; 65 : 612-6. PMID:10658390
11. Giancotti A, Grazzini F, De Dominicis F, Romanini G, Arcuri C. Multidisciplinary evaluation and clinical management of mesiodens. *J Clin Pediatr Dent* 2002; 26 : 233-7.  
PMid:11990044
12. Mishra MB. Types of hyperodontic anomalies in permanent dentition: report of 5 cases. *Int J Clin Dent Sci* 2011; 2 : 15- 21
13. Batra P1, Duggal R, Parkash H. Non-syndromic multiple supernumerary teeth transmitted as an autosomal dominant trait. *J Oral Pathol Med.* 2005 Nov;34(10):621-5.  
<http://dx.doi.org/10.1111/j.1600-0714.2005.00271.x> PMID:16202084
14. Fonseka MCN, Wettasinghe KA, Wettasinghe. Fusion of a Supplemental Premolar a Rare Presentation – A Case Report. *J of Oral Surgery, Oral Medicine, Oral Radiology*, 2015, Vol. 3, No. 1, 15-19.
15. Taylor GS. Characteristic of supernumerary teeth in the primary and permanent dentitions. *Dent Pract Dent Rec* 1972; 22: 203–8. PMID:4506832
16. Mitchell L. Supernumerary teeth. *Dent Update* 1989; 16:65-9. PMID:2599248
17. Açıkgöz A, Açıkgöz G, Tunga U, Otan F. Characteristics and prevalence of non-syndrome multiple supernumerary teeth: a retrospective study. *Dentomaxillofac Radiol* 2006; 35: 185-190  
<http://dx.doi.org/10.1259/dmfr/21956432> PMID:16618853
18. Herath EMUCK, Jayawardena JACK, Nagaratne SPNP. Characteristics of erupted supernumerary teeth and their effects on development of occlusion: a survey of 219 cases. *Peradeniya University Research Sessions, Sri Lanka.* 2009; 14; 82-84