

# Supernumerary Teeth: Case Series with their Planned Management

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## Abstract

**Introduction:** Supernumerary teeth are extra teeth to normal dental formula. They are developmental anomalies which may have multiple etiologies. They may or may not erupt in the oral cavity and are mostly diagnosed incidentally. **Case Reports:** This is the presentation of case series of seven such different types of supernumerary teeth. Among these cases, the treatment of two cases has been shown along with their photographs. **Conclusion:** Their most common form is mesiodens which are commonly found in the maxillary anterior region creating unesthetic appearance for which patient seeks treatment. If not diagnosed and managed on time they can create complications such as malalignment, diastema, crowding, noneruption, delayed, or altered eruption of permanent tooth. This case series is an attempt to showcase the deleterious effect of supernumerary teeth and their varied clinical presentation along with their plan of management.

**Keywords:** Extra teeth, hyperdontia, mesiodens, diastema, polydontia, supernumerary tooth

## INTRODUCTION

Supernumerary teeth are a developmental anomaly that is defined as “any tooth or odontogenic structure that forms from tooth buds more than the usual number for any given region of the dental arch.”<sup>[1,2]</sup> This excess in teeth number then normal dental formula is known as hyperdontia. It can occur alone or may be multiple, be unilateral or bilateral, may affect one or both jaws.<sup>[3]</sup> They can be classified based on their position as mesiodens (present between maxillary incisors), paramolars (adjacent to a molar tooth), distomolars (distal to the last molar), or supplementary tooth (similar to adjacent permanent teeth morphologically).<sup>[4]</sup> The etiology of supernumerary teeth still remains unclear. Most common theories suggested are: (1) phylogenetic theory, (2) anomalous division of the dental germ, and (3) hyperactivity of the dental lamina; this is the most widely accepted, according to this supernumerary teeth are formed as a result of the hyperactivity of the dental lamina during initiation stage of dentition formation. Nevertheless, environmental and hereditary factors also play an important role.<sup>[1,4,5]</sup> Mesiodens may erupt normally, follow an abnormal path of eruption,

or stay impacted. Supernumerary teeth may be present as nonsyndromic individual anomaly or may be associated with any syndrome; most commonly, cleft lip and palate, Gardner’s syndrome, Cleidocranial dysostosis, Ehlers–Danlos syndrome, and Ellis–van Creveld syndrome.<sup>[6]</sup> This cases series represents seven nonsyndromic cases without any familial history with different clinical presentations of mesiodens and supplemental teeth along with their planned treatment.

## CASE REPORTS

### Case 1

A 14-year-old male presented with complain of extra tooth between his upper front two teeth. Clinical examination revealed a fully erupted mesiodens, conical in shape between maxillary central incisors. All other teeth were erupted according to his dental and skeletal age. No similar familial history was found. Orthopantomogram (OPG) examination did not show any pathology related to mesiodens or its adjacent central incisors. Patient was advised to go for extraction of the mesiodens and closure of obvious mid line diastema created.

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**Case 2**

A 19-year-old female presented with chief complain of irregularly placed upper and lower front teeth. [Figure 1-7] Clinical examination revealed fully erupted conical mesiodens and retained right maxillary deciduous canine along with normal eruption of all other dentition. Displacement of right maxillary lateral incisor palatally and canine buccally was creating bunching of teeth in that region. OPG findings were in accordance with clinical findings and no pathology was evident. Treatment plan was to extract mesiodens and retained deciduous canine and align the maxillary and mandibular arches orthodontically.

**Case 3**

An 11-year-old boy reported to the department with chief complaint of extra tooth from the inside of upper jaw. On clinical examination, palatally placed mesiodens was found



Figure 1: Case 2 intraoperative photographs

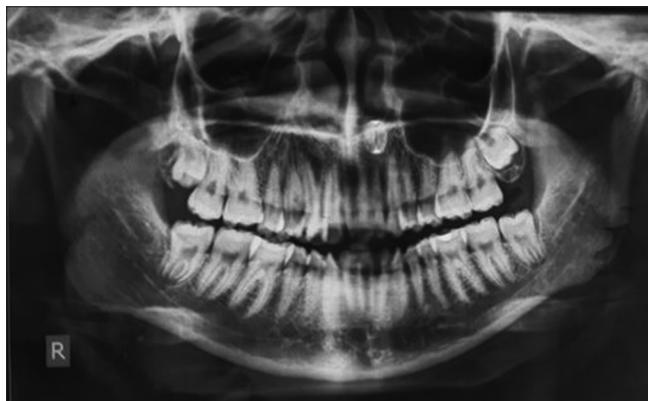


Figure 3: Case 2 pretreatment orthopantomogram



Figure 5: Case 2 posttreatment intraoperative photographs

between maxillary central incisors, creating mild amount of crowding between central incisors. Patient was in mixed dentition and therefore was advised for extraction of the mesiodens and to be on periodic follow-up.

**Case 4**

An 18-year-old male reported in the department with the chief complain of extra tooth inside the upper right front jaw. On clinical examination, palatally placed mesiodens were present between the maxillary central incisor. Interestingly, OPG revealed presence of an additional mesiodens which was impacted and inverted between the roots of maxillary central incisors. When two sequential intraoral periapicals (IOPAs) were taken using buccal object rule, it was found that impacted and inverted mesiodens was palatal in position. Extraction of only palatally erupted mesiodens was planned followed by periodic checkup for impacted mesiodens.

**Case 5**

An 8-year-old male reported in the department with chief complain of unerupted of the upper left front tooth. Clinical



Figure 2: Case 2 extraoperative photographs



Figure 4: Case 2 mid treatment intraoperative photographs



Figure 6: Case 2 posttreatment extraoperative photographs

examination revealed presence of mesiodens palatal to maxillary left central incisor. Rest of the dentition was normal. Patient was advised extraction of mesiodens with surgical exposure of the permanent central incisor with periodic follow-up.

### Case 6

A 13-year-old male presented in the department with chief complain of forwardly and irregularly placed upper front teeth. On clinical examination along with normal eruption of dentition, supplemental lateral incisor and retained deciduous canine in maxillary left quadrant were found. Medical history was noncontributory. OPG findings were in accordance with clinical findings. Patient was advised for extraction of supplemental lateral incisor, deciduous canine, and sequential treatment by fixed orthodontics.

### Case 7

A 13-year-old female reported with chief complain of irregularly placed upper front teeth and closed bite.



Figure 7: Case 2 posttreatment orthopantomogram



Figure 9: Case 7 pretreatment extraoral photograph



Figure 11: Case 7 mid treatment intraoperative photograph

[Figure 8-13] On clinical examination, all the teeth were normally present except for the missing mandibular left canine. Panoramic radiograph revealed interesting finding of impacted supernumerary tooth bud approximating mandibular right first premolar and impacted mandibular left canine. Treatment plan was to extract first premolars in all four quadrants along with surgical extraction of impacted supernumerary tooth bud followed by alignment of arches and traction of left mandibular canine to its clinical position by fixed orthodontic therapy.

## DISCUSSION

Supernumerary teeth are additional teeth to the normal complement which may occur both in primary and permanent dentition with the particular predilection for premaxilla.<sup>[7]</sup> They occur more frequently in the anterior maxilla (34.1%) than in other regions. These teeth also occur more frequently in the maxilla (76.9%) than in the mandible (23.1%).<sup>[7]</sup> Supernumerary teeth may or may not necessarily be accompanied by malocclusion. Unerupted supernumerary tooth may be an accidental finding during routine radiographic examination, without any harmful effect upon adjacent teeth. When a normal tooth is either delayed



Figure 8: Case 7 pretreatment intraoperative photograph



Figure 10: Case 7 pretreatment orthopantomogram



Figure 12: Case 7 posttreatment intraoperative photograph



Figure 13: Case 7 posttreatment extraoral photograph

or displaced in its eruption then also supernumerary teeth should be suspected. In general, supernumerary teeth, particularly in the maxillary anterior region, may cause clinical problems such as failure of eruption, displacement or rotation, crowding, abnormal diastema or premature space closure, dilacerations, delayed or abnormal root development of permanent teeth, cystic formation, and eruption into the nasal cavity. In most of the cases, a general clinical examination is sufficient to diagnose supernumerary teeth, but sometimes, radiograph and IOPA are pertinent as they help to reveal the status of the adjacent teeth or any pathology related to supernumerary tooth itself. However, many times patient comes for missing, altered or delayed eruption pattern of permanent tooth. In such cases clinician should examine for mesiodens (either erupted or impacted). In some cases supplementary tooth may be present which mostly remain undiagnosed until the patient seeks dental treatment for other dental ailment. According to the reported literature along with supplementary tooth, retained deciduous tooth may also be present.

### Management

Management of supernumerary teeth depends on its type, position, and problems associated with its adjacent teeth. In some cases, it is advisable to extract them immediately after being diagnosed or to delay the extraction or not to extract them at all.<sup>[8]</sup> Extraction is done immediately in situations such as inhibition or delay of eruption, displacement of the adjacent tooth, interference with orthodontic appliances, presence of pathologic condition, or spontaneous eruption of the supernumerary tooth.<sup>[8]</sup>

The cases present in this case series require extraction of supernumerary tooth/teeth present followed by orthodontic treatment. However, orthodontic treatment is not required in Cases 3, 4, and 5 after extraction of mesiodens at this point of time, but the patient was advised to be on follow-up visit. In Case 4, extraction of palatally placed mesiodens was advised, but that of impacted inverted mesiodens was not recommended as it does not cause any pathology to its adjacent structure. In Case 6 and Case 7 extraction of supernumerary tooth becomes mandatory as it is required for orthodontic treatment.

More simplified version of management has been explained by Amaral and Muthu<sup>[8]</sup> as depicted in decision support system [Figure 14].

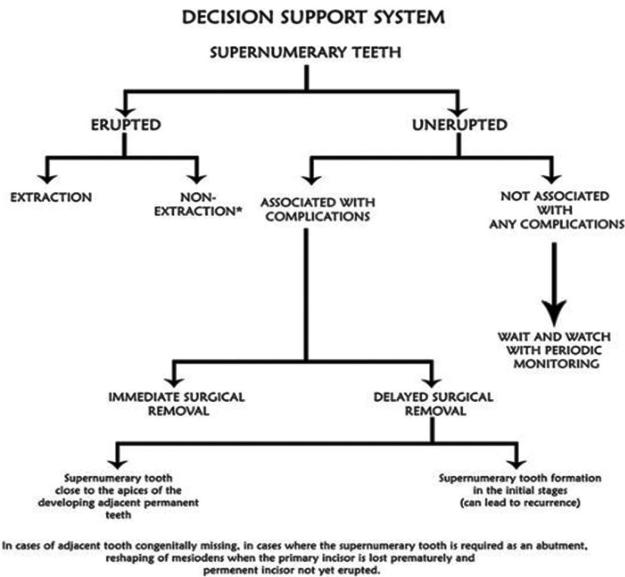


Figure 14: Decision support system

### CONCLUSION

Supernumerary teeth are quiet common dental anomaly that may result in various complications if not diagnosed and managed on time. Clinical examination, panoramic, and IOPA with buccal object rule are the gold standard for its diagnosis. However, cone-beam computed tomography can accurately diagnose the exact location and the possible secondary effects due to supernumerary teeth.<sup>[9]</sup> Some basic knowledge of their possibilities in different scenarios is very helpful for general practitioners. Mostly they are diagnosed incidentally when patient complains of extra tooth, noneruption or altered eruption pattern of permanent teeth, or presence of spacing or crowding. In such cases immediate intervention by extraction of supernumerary tooth followed by surgical or orthodontic or combination treatment is recommended in order to minimize unwanted side effects. This case series represent some of the possibilities, their sequence and their management so that general practitioners may have the overview of different consequences and to take decision if orthodontic referral is required in any case.

### 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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