

## **A Rare Case of Supplemental Maxillary Central Incisor in Midline**

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### **Abstract**

**Introduction:** Supernumerary teeth are common developmental anomaly in which their presence may result in various forms of clinical problems. Maxilla are more commonly affected. Clinical problems may include impaction, delayed eruption, ectopic eruption, overcrowding, etc. Single supernumerary tooth may be conical, tuberculate or supplemental according to their morphology. Multiple supernumerary teeth may be non-syndromic or syndromic. Its management depends on their type and position after proper clinical and radiographic examinations.

**Case details:** This article presents a case report with three permanent maxillary central incisors. It was identified as unilateral left supplemental central incisor located in the midline. Treatment plan involved extraction of the supplemental central incisor followed by fixed orthodontic treatment (MBT prescription 0.022" × 0.028" slot) using for closing the space and correction of the malalignment.

**Conclusion:** It is a very rare condition in which a proper clinical examination and radiographic examination are needed. A comprehensive treatment protocol must be carried out to minimise its complications and esthetic problems.

**Keywords:** Developmental anomaly; Mesiodens; Midline diastema; Supernumerary teeth; Supplemental teeth

### **Introduction**

Supernumerary teeth are defined as any structure or teeth that are present in excess to the normal dentition. They may be impacted or ectopically erupted resulting in malalignment of teeth [1]. Their etiology is not well understood and there are many theories that explain regarding the etiology. Some important theories are hyperactivity theory, theory of dichotomy of tooth bud, heredity, etc. [2,3].

Supernumerary teeth are classified based on their number, morphology and location. Depending on number, they may be single or multiple. Single supernumerary tooth may be conical, tuberculate or supplemental according to their morphology. Multiple supernumerary teeth may be non-syndromic or syndromic. Most common syndromic multiple supernumerary teeth are seen in cleft lip and palate patients [2-4]. Supplemental tooth is characterized by the same morphology with no difference in anatomy from the normal adjacent teeth. Most of the supplemental maxillary central incisor teeth are seen in primary dentition [4,5].

This case report explains the rare presence of supplemental maxillary central incisor in the midline in permanent dentition. Fixed orthodontic treatment following extraction of the tooth, is considered as its best treatment option.

### **Case Presentation**

A twelve-year-old female patient reported to the Department of Orthodontics and Dentofacial Orthopedics with the chief complaint of extra tooth in upper front region. There was no family history. No significant medical and dental history present.

Extra oral examination revealed a symmetric, mesoprosopic facial type and mesocephalic head form. Soft tissue profile indicated a straight profile with potentially competent lips. Intra oral examination revealed crowding in the upper anterior segment with presence of supernumerary supplemental maxillary central incisor in the midline having similar morphology to permanent maxillary central incisor and class I molar relationship bilaterally (**Figure 1**).

On radiographic examinations, it was ruled out as left supplemental maxillary central incisor located in the midline (**Figure 2**).

Hence the case was diagnosed with Angle's Class I Dewey's modification Type 1 malocclusion. Treatment planning included fixed mechanotherapy following extraction of the supplemental tooth using preadjusted edgewise appliance (MBT prescription 0.022" × 0.028" slot) only in the upper arch (**Figure 3&4**).



Figure 1: Intra-oral view showing three central incisors.

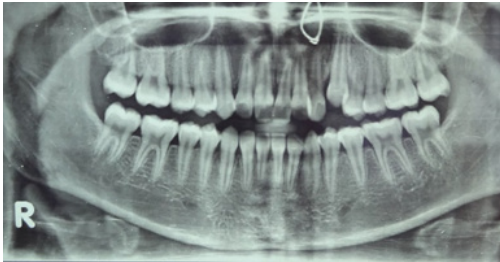


Figure 2: Pre-treatment orthopantomogram showing supplemental maxillary central incisor in the midline.



Figure 3: Intra-oral view at the start of treatment.



Figure 4: Intra-oral view at the end of treatment before appliance removal.

## Discussion

This case report is a quite rare condition of supernumerary teeth. Usually, the most common supernumerary tooth appears in the maxillary midline and are known as Mesiodens. Treatment of any supernumerary teeth should be considered in a comprehensive protocol depending on the type, number and location, whether erupted or impacted, associated pathology, and its effect to the adjacent teeth with consideration of oral hygiene and esthetic problems [1-3].

Like the present case, Tagade P et al [5] also discussed a rare case of fully erupted unilateral supplemental maxillary central incisor. There was crowding due to its presence and extraction of the most distal upper right central incisor was advised with orthodontic correction. In the present case central incisor in the midline was extracted followed by fixed orthodontic treatment for closing of the midline diastema. There was no associated

pathology in both the cases.

Lo Giudice G et al [5] presented a case of bilateral supplemental permanent maxillary lateral incisors and impacted mesiodens with clinical evidence of malocclusion. Treatment planning was done in two phases as first surgical phase for extraction of the supernumerary teeth, and secondly, orthodontic therapy for the correction of malocclusion aiming to obtain Class I molar relationship bilaterally. Similarly, the present case also considered first surgical extraction of the supernumerary tooth followed by orthodontic correction aiming to close midline diastema and maintain Class I molar relationship.

Gkantidis N et al [6] mentioned surgical extraction of mesiodens soon after diagnosis without causing injury to the adjacent teeth followed by orthodontic management of diastema. They also added that after proper diagnosis with radiographic examination, a combined treatment approach must be performed and permanent retention for stable long-term results. Meighani G et al [7] considered mesiodens as the most prevalent form of supernumerary teeth in permanent dentition, though the present case reported a rare supplemental maxillary permanent central incisor in the midline. In both the cases, the treatment approach consisted of extraction and closing of midline diastema with alignment of adjacent teeth.

Oesterle LJ et al [8] emphasized on development of differential diagnosis after considering the contributing factors to the cause of midline diastema (supernumerary teeth, underlying pathology, etc) for most effective treatment. Though the present case revealed no pathological condition.

## Conclusion

A proper clinical examination and radiographic examination should be considered as primary step to rule out any impaction or whether the supernumerary/supplemental tooth are associated with any underlying pathology or not.

A comprehensive treatment protocol should be a combination of surgical extraction and orthodontic correction followed by long term retention depending on their type, number, location and possible complications including esthetic consideration.

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