**CASE REPORT**

# Nonsyndromic multiple supernumerary premolars: Report of three cases

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## ABSTRACT

Supernumerary teeth are those which occur in excess of the usual number of teeth. Occurrence of single supernumerary tooth is very common. Development of multiple supernumerary teeth is relatively uncommon. Multiple supernumerary teeth most frequently develop in mandibular premolar region. Sometimes multiple supernumerary teeth are associated with syndromic condition. Here, we report three cases of non-syndromic multiple supernumerary teeth in mandibular premolar region. The article includes delineation of clinico-radiological details of the cases, elaboration of etiology of hyperdontia and syndromic conditions associated with supernumerary teeth. Clinical problems associated with the presence of excess number of teeth and treatment options are also discussed.

**Key words:** *Impacted, Premolars, Supernumerary*

## INTRODUCTION

The development of an increased number of teeth is known as hyperdontia and the additional teeth are termed as supernumerary teeth.[1] Supernumerary teeth may be single or multiple, unilateral or bilateral, erupted or impacted and in one or both jaws. The condition is more common in permanent dentition than in deciduous dentition. Majority cases of hyperdontia show only one additional tooth in a normal series. Supernumerary teeth may occur in isolation or as part of a syndrome or developmental abnormality, such as cleidocranial dysplasia, Gardner's syndrome or cleft lip and palate. Many authors have also reported familial occurrence of supernumerary teeth.[2,3,4] Thus occurrence of multiple supernumerary teeth is relatively uncommon without any associated disease, syndrome or familial tendency.[5]

Supernumerary teeth can be classified on the basis of location or morphology. According to location they can be classified as mesiodense, paramolars, distomolars and parapremolars. Various morphological forms of supernumerary teeth are conical, tuberculate, supplemental and odontome.[5] Occurrence of multiple supernumerary teeth may suggest the diagnosis of a syndrome. Their presence may create various clinical problems such as crowding, delayed eruption, diastema, rotations, cystic lesions and resorption of adjacent teeth. It is important to correctly diagnose such conditions and institute suitable treatment to these patients at appropriate time. We report three cases showing multiple supernumerary teeth (mandibular parapremolars) occurring as an isolated non-syndromic trait. These patients reported at the department of oral medicine and radiology, Manubhai Patel dental college and hospital, Vadodara, during a span of one year (2011-2012).

## CASE 1

A 37-year-old female, presented with the complaint of decayed right lower back tooth. Intraoral examination revealed two supernumerary teeth in right mandibular premolar region, one of which was erupted on lingual aspect of 44 and 45, and was the decayed tooth. The other was present posterior to 45. Another supernumerary tooth was present on contralateral side posterior to 35, thus comprising three completely erupted supernumerary teeth in oral cavity. Both mandibular first molars were extracted before 2 years due to extensive carious involvement (Figure 1A).



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Medical and family history was non-contributory. General physical and extra-oral examination showed no evidence of any other abnormality. Thus the diagnosis of hyperdontia related syndromic condition was excluded. The panoramic radiograph showed an impacted supernumerary tooth in each mandibular premolar region (Figure 1B). This resulted in the dentition comprising a total of 35 teeth (30 normal + 5 supernumeraries, Table 1). All supernumeraries were truly supplemental as they were morphologically and radiologically identical to adjacent premolars. Treatment involved extraction of decayed supplementary tooth followed by restoration of adjacent carious premolar. All other supernumeraries were left in situ because they were asymptomatic.

**Table 1: Distribution of supernumerary teeth in Case 1**

| | Supernumerary teeth | | | Normal dentition | Missing | Total |
|---|---|---|---|---|---|---|
| | Erupted | Impacted | Total | | | |
| **Maxilla** | 00 | 00 | 00 | 16 | 00 | 16 |
| **Mandible** | 03 | 02 | 05 | 14 | 02 | 19 |
| **Total** | 03 | 02 | 05 | 30 | 02 | 35 |

**Figure 1A:** Two supernumerary teeth in right lower premolar region and a single supernumerary in left lower premolar area, thus comprising a total of three completely erupted supernumerary teeth in oral cavity.

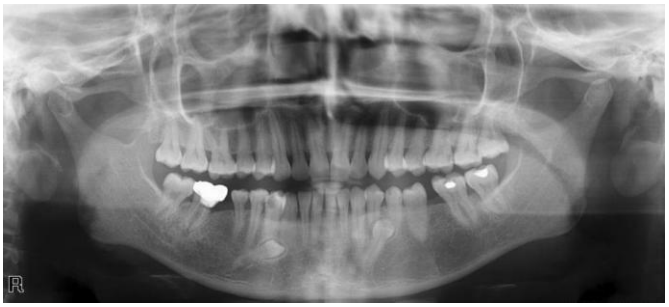

**Figure 1B:** Panoramic radiograph of case I showing bilaterally impacted supernumerary teeth in mandibular premolar regions.

## CASE 2

A 53-year-old male patient reported with complaint of pain in left mandibular molar region. Intraoral examination revealed two supernumerary teeth erupted on the lingual aspect of 34 and 35. Retained deciduous maxillary canines were present on both sides. Right maxillary first premolar was missing.

There was no evidence of any associated systemic illness. No additional abnormalities were detected on general examination, thus the diagnosis of any genetic syndrome associated with hyperdontia was excluded. A panoramic radiograph revealed impacted right maxillary first premolar and an impacted supernumerary tooth in right mandibular premolar region (Figure 2). Thus in this case the dental formula for permanent teeth comprised a total of 35 teeth (32 normal + 3 supernumeraries, Table 2).

**Table 2: Distribution of supernumerary teeth in Case 2**

| | Supernumerary teeth | | | Normal dentition | Total |
|---|---|---|---|---|---|
| | Erupted | Impacted | Total | | |
| **Maxilla** | 00 | 00 | 00 | 16 | 16 |
| **Mandible** | 02 | 01 | 03 | 16 | 19 |
| **Total** | 02 | 01 | 03 | 32 | 35 |

**Figure 2:** Panoramic radiograph showing an impacted supernumerary tooth in right lower premolar region and two completely erupted supernumerary teeth in left mandibular premolar region.

## CASE 3

A 17-year-old boy reported with pain in right lower third molar region. Intraoral examination revealed partially impacted 48 and completely erupted other permanent teeth. The panoramic radiograph showed two developing supernumerary teeth in the right mandibular premolar region. Both supernumerary teeth showed completely developed crowns with incomplete roots (Figure 3).

Presence of two supernumerary teeth resulted in a dental formula of 34 permanent teeth (32 normal + 2 supernumeraries, Table 3). Both supernumerary teeth were asymptomatic and incompletely developed. Their removal was not attempted considering the possibility of damaging the apices of adjacent normal premolars, during the surgical procedure. The patient is under follow-up and will be monitored periodically by clinical and radiographic examination.

**Table 3: Distribution of supernumerary teeth in Case 3**

| | Supernumerary teeth | | | Normal dentition | Total |
|---|---|---|---|---|---|
| | Erupted | Developing | Total | | |
| **Maxilla** | 00 | 00 | 00 | 16 | 16 |
| **Mandible** | 00 | 02 | 02 | 16 | 18 |
| **Total** | 00 | 02 | 02 | 32 | 34 |

**Figure 3:** Panoramic radiograph showing developing supernumerary teeth near the apices of mandibular premolars and first molar on right side.

## DISCUSSION

Various studies have shown the prevalence of single supernumerary teeth in 76-86%, double supernumeraries in 12-23% and multiple supernumeraries in less than 1% of cases. Single supernumerary tooth most commonly arise in maxillary incisor region. However, mandibular premolar region is the most frequent site for the development of multiple supernumerary teeth.[1,6] The etiology for supernumerary teeth remains unclear. Both genetic and environmental factors are considered as the etiology of supernumerary teeth. Accordingly, various concepts have been suggested for their occurrence, such as, heredity, atavistic tendency, dichotomy of the tooth bud, genetic syndromes, 'post permanent' dentition and dental lamina hyperactivity.[3,8,9] Localized and independent hyperactivity of the dental lamina is the most accepted theory for the development of supernumerary teeth.[10]

Some studies also report a high rate of bilateral occurrence of multiple supplementary premolars.[11] The discovery of supernumerary tooth is often an incidental finding on routine clinical or radiographic examination.[10] Thus the detection of a single supernumerary tooth in one quadrant is a clear indication for radiographic examination of other quadrants. As evident in our cases, the formation of supernumerary teeth in mandibular premolar region is often delayed (case 3), and these teeth generally develop on the lingual aspect of the normal premolars (Case 1 and 2). [10] Thus the presence of single supernumerary tooth suggests the possibility of development of more number of supernumerary teeth.

Supernumerary teeth may erupt normally or remain impacted. Their presence may lead to various clinical problems. Commonly seen among these are crowding due to increased number of teeth, ectopic eruption, diastema, rotation of adjacent teeth, malocclusion, resorption or dilaceration of adjacent roots, impaction of normal teeth and development of dentigerous cyst.[2,8,11] Dental anomalies, such as hypodontia, taurodontism, gemination, macrodontia, dens evaginatus have also been reported concomitant with multiple supernumerary teeth.[8,12] Bodin et al., reported that only 2% of the supernumerary premolars are likely to undergo pathological changes.[13] Nevertheless, the most commonly encountered complications with these teeth are dentigerous cyst and root resorption with adjacent teeth.[10] More than 20 genetic syndromes and developmental conditions have been shown to be associated with supernumerary teeth.[1] The presence of syndrome associated with hyperdontia should be ruled out in such cases because there may be significant implications for patients general health. For example, multiple polyps of large intestine in Gardner's syndrome are considered premalignant. Dental practitioner may be the first person to clinically evaluate such cases. Thus the knowledge of such associated conditions is essential for their early diagnosis and management. Since our patients showed no abnormalities of facial appearance, skeleton and evidence of mental retardation, most of the syndromic conditions were excluded. Some authors also reported the familial occurrence of multiple supernumerary premolars. [2,3,4] No such anomalies, clinical problems, pathologies or genetic conditions were found in any case of present series. Thus the present series shows true sporadic cases of multiple supernumerary teeth (parapremolars) in mandible.

Whenever supernumerary teeth are diagnosed, single or multiple, a decision regarding the appropriate management should be made carefully. Treatment of the supernumerary teeth can be achieved with either of the following options: 1. Removal of the supernumerary teeth, if complications are found or anticipated. 2. Leaving the supernumerary teeth in situ with periodic follow-up, if they are asymptomatic and without any associated pathology. However, the removal of supernumerary teeth is not without risk. Surgical removal of impacted supernumerary teeth may cause damage to the important adjacent structures, such as inferior alveolar or mental nerves and roots of adjacent teeth. In all such cases the risk-benefits of surgery must be carefully considered. If the risks of surgery outweigh the benefits of removal, the teeth may be left in situ.

## CONCLUSION

Clinical problems attributed to the presence of supernumerary teeth, such as, caries in adjacent teeth, resorption of roots of adjacent teeth and malocclusion were observed in present cases. The present series can serve as an example of sporadic occurrence showing non-syndromic multiple supernumerary teeth in mandibular premolar region. Surgical intervention is the appropriate method for the treatment of supernumerary teeth. However, impacted supernumerary teeth that are asymptomatic and do not affect the dentition should be followed rather than removed.

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