

## Case Report

## Bilateral supplemental maxillary central incisors: a case report

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**Abstract:** Hyperdontia is a developmental anomaly that is hypothesized to arise from multiple causes. Supernumerary teeth may remain embedded in the alveolar bone or can erupt into the oral cavity. When such teeth remain embedded, they may cause disturbances to developing teeth. Erupted supernumerary teeth can cause aesthetic or functional problems, especially when situated in the maxillary anterior region. Before a definitive diagnosis and treatment plan can be developed, it is essential to clinically and radiographically enumerate and identify supernumerary teeth. Supplemental central incisors are rare and bilateral cases are even rarer: only five cases have been reported in the literature to date. We describe a case of bilateral supplemental maxillary central incisors and discuss the management of supernumerary teeth. (*J Oral Sci* 53, 403-405, 2011)

Keywords: supernumerary; anomaly; supplemental.

### Introduction

Supernumerary teeth are defined as those that appear in addition to the normal series. Reported prevalence ranges from 0.3% to 0.8% in the primary dentition and from 0.1% to 3.8% in the permanent dentition. Males are affected approximately twice as often as females (1). Supernumerary teeth can occur as singles, multiples,

unilaterally or bilaterally, and in the maxilla, mandible, or both (1). In individuals with one or two supernumerary teeth, the most common region affected is the anterior maxilla, followed by the mandibular premolar region. There are differences in the reported relative frequencies of supernumerary teeth in other regions (1). Supernumerary teeth are estimated to occur in the maxilla 8.2 to 10 times as frequently as in the mandible and most commonly affect the premaxilla (1).

Supernumerary teeth can be classified on the basis of position or form (2). Positional variations include mesiodens, paramolars, distomolars, and parapremolars. Variations in form consist of conical, tuberculate, and supplemental teeth, and odontomes (2). Also, the site and number of such teeth vary greatly (2).

The cause of hyperdontia is unclear, but it is believed to result from atavism (i.e. reversion to a more primitive type of dentition); continued proliferation of remnants of the dental lamina, producing a "third dentition"; and/or dichotomy of the tooth germ, which produces two or more separate units. According to the dichotomy theory, which seems the most plausible, the tooth bud splits into two parts of equal or unequal size. This results in two teeth of equal size or one normal and one abnormal tooth, respectively. The phenomenon of gemination, which is assumed to be a similar, incomplete process, lends support to this idea (3).

### Case Report

An 18-year-old male presented to our outpatient dental department with pain in the lower left back region, which had persisted for one month. His medical and dental histories were noncontributory. The patient's siblings were also examined, and no related findings were observed.

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Fig. 1 A clinical image shows four maxillary central incisors.



Fig. 2 A clinical image shows four maxillary central incisors (palatal aspect).

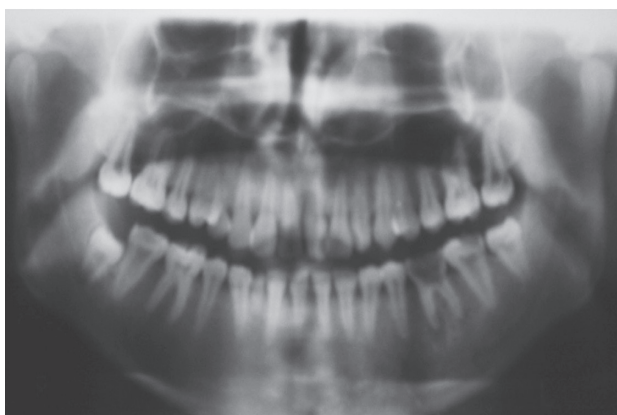


Fig. 3 An orthopantomogram shows four maxillary central incisors and the absence of the succedaneous tooth beneath the right deciduous canine.

Extraoral examination revealed no abnormalities, and intraoral examination revealed a deep carious lesion in the mandibular left first and second molars. On further clinical examination, four maxillary central incisors were found (Fig. 1). The central incisors towards the midline

were termed supplemental central incisors because they were morphologically similar to adjacent normal central incisors. These supplemental central incisors were slightly rotated because of a discrepancy in arch length (Fig. 2). An orthopantomogram (OPG) showed four maxillary central incisors, and the succedaneous tooth beneath the right deciduous canine was absent (Fig. 3). The OPG also showed that the roots of the supplemental central incisors were smaller than those of the normal central incisors. All four incisors elicited a positive response to thermal and electric pulp testing. The patient was informed of the diagnosis but declined treatment.

### Discussion

It is essential to clinically and radiographically enumerate and identify supernumerary teeth before definitive diagnosis and development of a treatment plan. Supplemental central incisors are rare, and bilateral cases are even rarer. Indeed, only five cases have been reported in the literature to date (4-8). Most supplemental teeth remain unerupted (4), and unerupted supplemental teeth have been associated with several pathological conditions, such as widened follicular space, dentigerous cyst formation, dental pulp necrosis, pulp canal obliteration, root resorption, and ankylosis (4). Disturbance of eruption, diastema formation, and rotations of permanent teeth are common complications (5). The first stage of management is the localization and identification of complications associated with supernumeraries (4). If complications are present, the teeth are usually extracted, which typically involves surgery. Early extraction of supernumeraries that cause incisor impaction may minimize loss of eruptive potential, space loss, and centerline displacement (5). Even in cases in which the unerupted incisors are severely rotated, early removal of the causative supernumerary tooth can result in self-correction and correct alignment (6). The greatest concern regarding early removal is the risk of affecting the formation of adjacent roots (6). However, delayed eruption of maxillary central incisors can result in mesial movement of the lateral incisors, space loss, and diminished development of dentoalveolar height (1). Furthermore, when a supernumerary tooth prevents the eruption of an incisor, the eruptive potential of the incisor might be lost if intervention is delayed. After removal of supernumerary teeth, the time required for the unerupted tooth to erupt varies from six months to three years (1).

Factors affecting the time required include the displacement distance of the unerupted tooth, the space available in the dental arch, and the stage of root development in the permanent tooth (1). The patient's age

and the availability of space in the dental arch are the two critical factors in determining whether spontaneous eruption will occur after removal of supernumerary teeth (2). If a supplemental tooth is present and erupted, it may be difficult to determine which tooth is supplemental and which is part of the normal dental series. In these circumstances, if both teeth are healthy, it is logical to extract the tooth that is most displaced from the line of the arch, so as to relieve crowding.

Orthodontic problems and dental pathology associated with supernumerary teeth can be avoided by early detection and management, which are necessary aspects of preventive dentistry. Thus, the importance of early radiographic assessment of suspected cases cannot be overstated.

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