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Case Report

A rare case of metachronous multiple supernumerary teeth in the bilateral premolar region of the mandible

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ABSTRACT

While supernumerary teeth are a common clinical phenomenon, metachronous supernumerary teeth in the same region are rare. A 12-year-old boy with multiple impacted supernumerary teeth in the mandible was referred to our hospital. A panoramic radiograph showed three impacted supernumerary teeth in the left incisor and bilateral premolar region of the mandible. All of the supernumerary teeth were extracted, and the dental follicles around the supernumerary teeth were removed. However, approximately two and half years later, two bilateral supernumerary teeth in the premolar region of the mandible were found in a routine panoramic radiograph. All of the supernumerary teeth were extracted again. The extracted teeth were similar in size and shape to the normal permanent premolars. A review of the previous literature suggests that this is a report of an extremely rare case of three impacted supernumerary teeth followed by metachronous bilateral supernumerary premolars. In addition, the supernumerary teeth that appeared after the first teeth extraction may have developed from the third dental laminae.

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1. Introduction

Supernumerary teeth are a well-recognized clinical phenomenon. The prevalence of supernumerary teeth in the deciduous and permanent dentition ranges from 0.3% to 0.8% and 1.5% to 3.5%, respectively [1–3]. The male-to-female ratio is approximately 2:1 [1–3]. Solitary supernumerary teeth are more frequently observed in the permanent dentition than the deciduous dentition, and the most common site of expression is in the anterior maxilla [2,4], with a reported prevalence of multiple supernumerary teeth of 4.6% [4]. However, while there are some reports of bilateral supernumerary teeth [5–7], cases with metachronous supernumerary teeth in the same region are extremely rare.

The etiology of supernumerary teeth remains unclear, and various theories have been postulated in previous reports [4,8,9]. In particular, many syndromes and developmental conditions have been found to be associated with additional tooth development, including multiple supernumerary teeth [10–12]. However, the appearance of multiple supernumerary teeth in the absence of a systemic condition or syndrome is a rare phenomenon.

In this report, we present a rare case of metachronous supernumerary teeth without any syndromes or developmental conditions in the same region of the mandible, which occurred after extraction of the initial supernumerary teeth in an Asian teenage male.

2. Case report

A 12-year-old Japanese boy with multiple impacted supernumerary teeth was referred to Kumamoto University Hospital by a general dental practitioner. He had no particular medical history, hereditary disease, or family history. No facial asymmetries, cervical lymphadenopathies, or other distinct extraoral findings were detected (Fig. 1A). An intraoral examination revealed that there were no deciduous teeth, and the left mandible canine and right mandible second premolar were delayed in eruption. His Hellman

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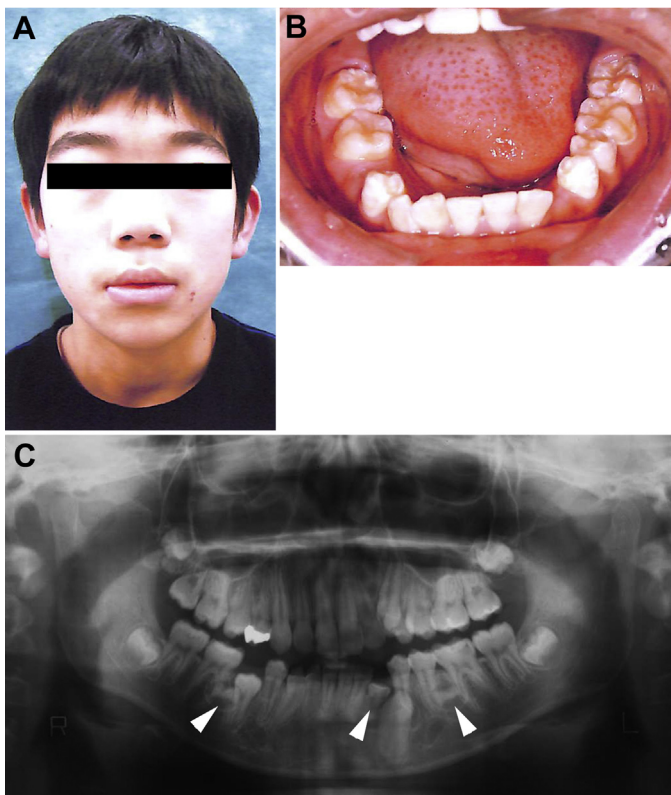


Fig. 1. Clinical photographs and a panoramic radiograph of the patient at the initial examination.

(A) There were no facial asymmetries, cervical lymphadenopathies, or other distinct extraoral findings. (B) There were no deciduous teeth, and the left mandible canine and right mandible second premolar were delayed in eruption. (C) A panoramic radiograph revealed three impacted supernumerary teeth in the left incisor and bilateral premolar region of the mandible (arrowheads).

Dental Age was IIIb (Fig. 1B). Panoramic radiography showed three impacted supernumerary teeth in the left incisor and bilateral premolar region of the mandible (Fig. 1C). Computed tomography (CT) showed that all of the supernumerary teeth were located in the lingual region of the mandible (Fig. 2A and B). Tooth extraction was carried out under general anesthesia. All of the supernumerary teeth were completely removed. The supernumerary teeth in the premolar region showed a normal crown shape similar to the permanent premolars. The crown shape of the supernumerary tooth in the incisor region was similar to that of the permanent incisor tooth.



Fig. 2. A computed tomography (CT) scans at the initial examination.

(A) A coronal CT scan. (B) An axial CT scan. Three supernumerary teeth were observed in the lingual region of the mandible (arrowheads).

The removal of all of the supernumerary teeth was confirmed in postoperative panoramic radiographs (Fig. 3).

Approximately two years and eight months after the initial operation, the patient was again referred to our institution due to the identification of two additional impacted supernumerary teeth. An intraoral examination revealed that all permanent teeth were erupted (Fig. 4A). Panoramic radiography showed the teeth in the bilateral premolar region of the mandible (Fig. 4B), and CT revealed the reappearance of impacted supernumerary teeth bilaterally in the lingual region between the first and second premolars in the mandible (Fig. 4C and D). Tooth extraction was again performed under general anesthesia. The supernumerary teeth showed a normal crown shape, similar to the permanent premolar and molar (Fig. 5A). The removal of all of the supernumerary teeth was confirmed in postoperative panoramic radiographs (Fig. 5B). His supernumerary teeth were completely removed, and no recurrent signs have been identified in the follow-up examinations in the two years since the second operation.

3. Discussion

A single supernumerary tooth is most commonly observed, and multiple supernumerary teeth are rare, accounting for less than 1% of all cases [13]. The upper maxilla presents supernumerary teeth more frequently than the mandible, and approximately 90% of supernumerary teeth occur in the central incisor region of the maxilla [5]. Hyun et al. reported that the presence of mandibular supernumerary premolars is an uncommon phenomenon, with an incidence of 0.029% [7]. Furthermore, the incidence of metachronous multiple supernumerary teeth that sequentially developed in the same region in the absence of an associated systemic condition or syndrome is regarded as rare [6]. Therefore, our case appears to be an extremely rare case, and clinicians, including oral surgeons, should recognize this rare entity.

In non-syndrome-associated multiple supernumerary teeth, Yusof and Awang reported that the mandibular premolar region was the most common site [14]. In addition, it has been reported that additional supernumerary teeth have also been found elsewhere in the maxillary canine or premolar region in patients with multiple supernumerary teeth bilaterally in the mandible [5–7,15]. However, in the present case, the additional supernumerary tooth was located in the incisor region in the mandible at the first examination (Fig. 1C). To our knowledge, there are no reports describing cases of concurrent supernumerary teeth in the incisor region of mandible in addition to bilateral supernumerary teeth in the premolars of mandible. Therefore, this is a report of an extremely unusual case with multiple supernumerary teeth in the mandible.

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