

Supernumerary Tooth in the Primary Molar Region: A Case Report

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ABSTRACT

Supernumerary teeth are among the most common dental anomalies affecting the primary and permanent dentition. They are usually found in the anterior maxilla and occur infrequently in the primary dentition. The purpose of this paper was to report a case diagnosed with primary supernumerary tooth in the primary second molar region. The crown and root shape of the primary supernumerary tooth resembled that of the primary first molar. On radiographic examination, the primary supernumerary tooth was followed by a permanent supernumerary successor with an unusually big crown. The primary supernumerary molar was immediately extracted to avoid interference with the development of the second premolar's tooth bud. This dental anomaly is rarely observed, as only primary supernumerary teeth in the anterior region have been reported in the dental literature. (*J Dent Child* 2007;74:151-3)

KEYWORDS: SUPERNUMERARY TOOTH, PRIMARY MOLAR, TOOTH ANOMALY

Supernumerary teeth are a frequently observed dental anomaly. They are more common in the permanent than in the primary dentition. The prevalence reported in the primary dentition ranged from less than 1% to approximately 2%,^{1,2} while that in the permanent dentition ranged from less than 1% to approximately 4%.³ No difference could be seen between males and females.⁴ The ratio of occurrence of these teeth in the maxilla to the mandible is approximately 8:1, with the most common site in the maxillary arch being the premaxillary region.³ A total of 35% to 60% of cases of primary supernumerary teeth are followed by a supernumerary permanent successor.⁵

The etiology of supernumerary teeth is still unknown, but genetic factors play an important role in the occurrence of supernumerary teeth. These teeth may be single or multiple. A survey of the literature provides evidence that there seems to be an ethnic influence in the prevalence of supernumerary teeth in the primary dentition.⁶ Multiple supernumerary teeth are a feature of certain genetic syndromes like Cleidocranial dysplasia and Gardner's syndrome.⁷

Primary supernumerary tooth are rarely seen in the primary molar region, probably because only primary supernumerary teeth in the anterior region are mostly reported. The purpose of this paper was to report a case that presented with primary supernumerary teeth in the molar region.

CASE REPORT

A Japanese girl—who first presented to the Department of Pediatric Dentistry, Nihon University School of Dentistry at Matsudo, Matsudo, Japan, at the age of 4 years, 1 month—was referred by a general practitioner for observation of her dentition's long-term development. She had undergone a previous operation at 7 months for the removal of a unilateral hallucal polydactyly. The girl was generally healthy, with no other notable features in her past medical history. She was mentally fit with normal intelligence. The patient's parents were both healthy, and there were no relevant points in the family history after an uneventful full-term pregnancy.

On oral examination, the patient was in the primary dentition stage of development. The oral hygiene was reasonable, and the patient was caries free. The patient had a primary supernumerary tooth on the palatal side of the upper left primary second molar (Figure 1). The primary supernumerary tooth's crown resembled that of the contralateral primary first molar, with a mesiodistal diameter

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of 6.5 mm. The second primary molar's crown resembled that of the first primary molar with a small crown, and was rotated and dislocated to the buccal side in the dental arch. The upper left first molar had already erupted at the age of 4 years, 1 month.



Figure 1. Intraoral view of the maxilla's left side showing the primary supernumerary molar on the second primary molar's palatal side with a small crown (mirror image).

Upon radiographic examination, the orthopantomogram revealed that the primary supernumerary teeth were followed by a permanent supernumerary successor, which was unusually big and had developed early (Figure 2). The early development of the upper left first molar was evident in the permanent dentition.

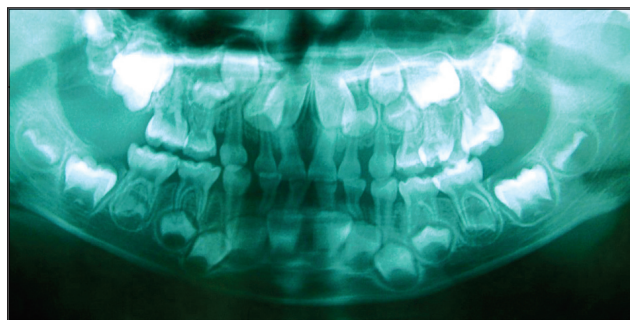


Figure 2. Orthopantomogram showing the maxillary primary supernumerary molar's left side followed by the supernumerary permanent successor, which was unusually big, and the early development of the upper left first molar.

When examined with computed tomography, the supernumerary primary tooth appeared clearly separate from the primary second molar, excluding germination (Figures 3a and 3c) and had 3 roots and 3 root canals (Figure 3b). These two teeth had a symmetrical form. The second premolar's tooth bud was pushed by the supernumerary primary tooth and the permanent supernumerary successor (Figures 3b and 3c).

The primary supernumerary tooth was extracted immedi-

ately to avoid interference with the development of the second premolar's tooth bud. The patient was called for a preventive program and follow-up to monitor development of the second premolar and the supernumerary permanent successor.

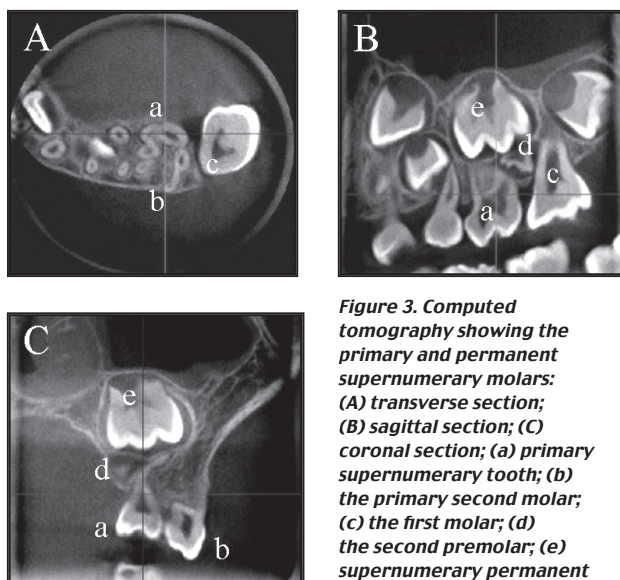


Figure 3. Computed tomography showing the primary and permanent supernumerary molars: (A) transverse section; (B) sagittal section; (C) coronal section; (a) primary supernumerary tooth; (b) the primary second molar; (c) the first molar; (d) the second premolar; (e) supernumerary permanent successor.

DISCUSSION

The prevalence of primary supernumerary teeth have been reported to be generally low among Japanese children.¹ Supernumerary teeth in the primary dentition show a predilection for the maxillary lateral incisor region.⁷ Yonezu et al¹ studied 2,733 3-year-old Japanese children and reported an incidence of less than 1% (two children), with supernumerary erupted teeth in the upper anterior region. Ravn⁸ surveyed 4,564 children from 3 to 3.5 years of age in Denmark and found 26 children (1%) with primary supernumerary teeth. The anomaly was found in the anterior maxilla in 24 cases, and 2 cases in the anterior mandible. Jarvinen et al⁹ examined 1,141 3- to 4-year-old Finnish children for supernumerary primary teeth and reported a prevalence of 0.4%, with all teeth located at the maxillary incisor area. Humerfelt et al⁴ reviewed hyperdontia in children younger than age 4 and reported 45 primary supernumerary teeth located at the premaxillary region. Previous studies confirm that supernumerary primary teeth in the molar region, as reported here, are extremely rare.

Numerous etiologies of supernumerary teeth have been proposed. These include locally disturbed odontogenesis, microform of cleft palate, and localized hyperactivity of the dental lamina.¹⁰ The occurrence of supernumerary teeth indicates that proliferation of extra teeth buds may be initiated by various factors.⁴ In the present case, if the primary second molar developed independently from the supernumerary teeth bud, the primary second molar would develop a normal crown shape. Therefore, a single tooth bud of the primary second molar may possibly divide into two during development and form a symmetrical tooth form. Then, development of the supernumerary permanent tooth

may be derived from a supernumerary primary tooth. In addition, the early development of the upper left first molar may be influenced by hyperactivation in this region.

Based on the oral and digital abnormalities, the patient was suspected to have mild oral-facial-digital syndrome (OFDS) type I (Mendelian Inheritance in Man, MIM 311200). Supernumerary teeth and polydactyly of the foot, which were found in our patient, have been reported as features of OFDS type I.¹¹ However, the patient did not exhibit any facial manifestations nor did she show characteristic features of OFDS type I, such as lobulated tongue, hyperplastic frenula, polycystic kidney disease, or brachydactyly.^{12,13} Therefore, the diagnosis of OFDS type I was ruled out. Supernumerary teeth are also a feature of cleidocranial dysplasia. The diagnosis of cleidocranial dysplasia was ruled out because characteristic skeletal anomalies such as patent fontanels, late developing secondary dentition, short stature, and rudimentary clavicles were not reported in this case.¹⁴

Supplementary teeth in the primary dentition may produce various complications, including delay in eruption of permanent teeth, crowding, diastema, rotation, resorption of adjacent teeth, or dentigerous cyst.⁷ A supernumerary tooth basically should be extracted immediately if any of the aforementioned complications are present.¹⁵ In the present case, the primary supernumerary tooth interfered with the development of the second molar's tooth bud. Therefore, extraction of the supernumerary tooth was reasonable. Even if the primary supernumerary tooth is removed, however, the second molar might not develop normally because of the supernumerary permanent successor. In the future, substituting the supernumerary permanent tooth after extraction of the second premolar is one of the possibilities for management.

In the present case the provisional plan is to observe the development and eruption of the second premolar and the supernumerary permanent successor and render appropriate treatment when required.

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