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Unusual multiple natal teeth: case report

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Abstract

An 18-month-old Japanese boy with multiple natal teeth was examined. Fourteen hard structures were reported to have been present at birth at the regions of the anterior teeth and first primary molars in both jaws. The structures were excessively mobile and 11 of the structures had exfoliated successively since 5 months of age. The three structures remaining at the regions of the first primary molars had bonelike appearance and color, and were smaller in overall dimension than the corresponding primary teeth. Radiographic examinations showed that the structures had neither roots nor pulp chambers and their radiopacity corresponded to that of mandibular bone. Furthermore, there were no permanent successors except for the upper central incisors and left lateral incisor at the regions where the structures were situated. Histological examinations revealed that the specimens consisted of dentin with tubular structure, osteodentin-like structure, and cementumlike structure.

Introduction

Natal teeth are defined as the teeth that are present in the mouth at birth, and are fairly rare in occurrence, with a frequency of one case in 1400–3500 births (Kates et al. 1984; Leung 1986). The teeth involved most often are the lower central incisors. Natal teeth affecting the canines and molars also have been reported (Ronk 1982; Brandt et al. 1983). In most instances, natal teeth are poorly developed with hypoplastic enamel and dentin, poor in texture, and have poor or absent development of roots (Chow 1980; Ooshima et al. 1986). Multiple natal teeth are extremely rare. The purpose of the present report is to describe a case in which 14 primary teeth with malformed structure had erupted at birth and exfoliated successively, with most of the teeth having no permanent successors.

Case Report

An 18-month-old Japanese boy was admitted to Osaka University Dental Hospital for the examination of three hard structures at the regions of the first primary molars. The child, born after 39 weeks' gestation, weighed 3075 g, after a normal pregnancy. His mother had not taken any medications during the pregnancy. At birth, he appeared to be physically normal except for 14 toothlike structures in the oral cavity. There was no familial history of any similar oral manifestation. There were no abnormal findings in routine examinations performed at 22 months of age except for his skeletal age, which was advanced by about six months. According to the consulting dentist who had observed the case since one month of age, 14 toothlike structures were present at birth in both jaws, and were excessively mobile. Eleven of the structures had exfoliated since 5 months of age.

Oral examination revealed three toothlike structures at the regions of first primary molars. The structures were bonelike in appearance and color, and were smaller in overall dimensions than the corresponding primary teeth (Fig 1). The structures were excessively mobile. The maxillary canines and three second primary molars had erupted and had normal color and appearance, but each second primary molar had a concavity in the center of the occlusal surface. No other primary teeth were erupted.

Fig 1. Natal tooth at the mandibular left first primary molar region. The natal tooth photographed at 1 year and 6 months of age has bone-like appearance and color (arrow). The second primary molar has concavity in the center of the occlusal surface.

Lateral radiographs of the molar regions at 19 months of age illustrated that the structures had neither roots nor pulp chambers and the radiopacity of the structures corresponded to that of mandibular bone. The maxillary left second primary molar was erupting and tooth buds of the first permanent molars were developing. No tooth buds of permanent premolars were noted. Radiographic examination at 22 months of

Fig 2. Panoramic radiograph at 3 years and 7 months of age. Four first permanent molars, maxillary central incisors, and left lateral incisor are developing.

age showed that tooth buds of the maxillary central incisors and left lateral incisor were present. No tooth buds were observed in the lower anterior region. Tooth buds observed in the region of the maxillary incisors appeared to be malformed. Panoramic radiographs exposed at 3 years, 7 months of age showed root formation of four second primary molars and maxillary canines as almost completed, and the four first permanent molars, maxillary central incisors, and left lateral incisor were developing (Fig 2). Neither premolar buds nor lower anterior buds were present. His dental age, based on the stage of the development of lower first permanent molars, corresponded to his chronologic age (Moorrees et al. 1963).

The bonelike structures at the regions of the mandibular first primary molars were composed of a short, bone-colored crown and a rootlike structure. Ground sections of 50 µm thickness and decalcified sections of 3 µm thickness were prepared and stained with hematoxylin and eosin (H & E), and subjected to histological and microradiographic examinations, as described in a previous study (Abe et al. 1988).

Microscopic examination showed that the root portion could not be distinguished histologically from the coronal portion. The greater part of the structure consisted of dentin with a relatively regular tubular structure, a part of which was surrounded by hard tissue with sparse tubular structure and many inclusions. At the outer part of the dentin, the normal continuous enamel layer was absent, but a highly calcified enamellike deposit was observed. At the central portion of the tubular dentin, there was no pulp chamber, but instead, irregular hard tissue with many inclusions.

Histological examination of decalcified sections stained with H & E showed that the specimen consisted of a) dentin with relatively regular tubular structure, b) osteodentinlike tissue, and c) cementumlike tissue (Fig 3). In higher magnification, several defects were seen along the tubules in relatively normal dentin. There were neither predentin nor odontoblast layers on the inner surface of the tubular dentin. Vascular inclusions were observed in the osteodentinlike structure in which endothelial cells could not be found. Cementumlike hard tissue with many lacunae appeared to be hypertrophied cellular cementum covered with acellular cementum.

Discussion

Darwish et al. (1987) have reviewed 50 studies from the literature involving 458 cases of natal teeth and summarized the type, the possible etiology, and any association with systemic disease. In their review, only six cases were reported as multiple natal teeth; four of these cases included molars. Most of them were associated with systemic disorders, such as Ellis-van Creveld syndrome or Hallerman-Streiff syndrome.

In the present case, 14 hard structures were reported to be present congenitally at the regions of the anterior teeth and first primary molars, with most of them exfoliating successively since 5 months of age. Histological examinations showed that the hard structures were composed mainly of dentin with regular tubular structure. These bonelike structures probably were multiple natal teeth. However, the present case is different in several respects from the typical cases of natal teeth previously reported (Massler and Savara 1950; Hals 1957). First, the natal teeth in the present case had exfoliated successively since 5 months of age. In general, natal teeth are lost in the first 4 months, since these teeth become increasingly mobile because they lack the root structures. When natal teeth survive beyond four months, they have proved to have a good prognosis (Kates et al. 1984). Second, most of the present natal teeth had no permanent successors. In addition, the permanent successors found at the region of upper

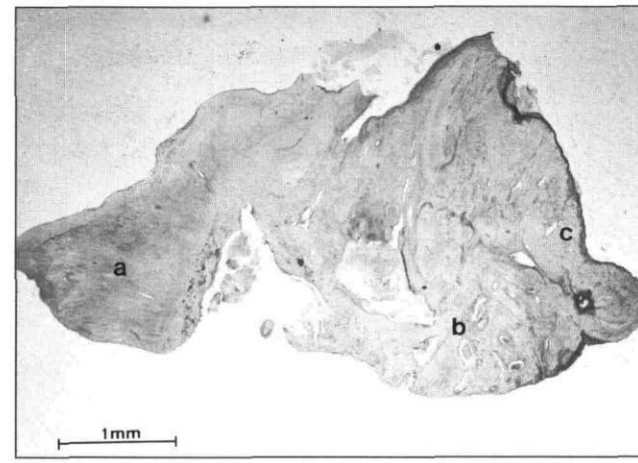

Fig 3. Decalcified section of the hard structure stained with H-E (magniiication 30x). The specimen consists of 3 parts, (a) dentin with relatively regular tubular structure, (b) osteodentin-like tissue, and (c) cementum-like tissue.

central incisors and left lateral incisor appeared to be malformed. Permanent successors have been reported to be present even when the natal teeth are lost by exfoliation or extraction (Spouge and Feasby 1966). Third, the present natal teeth had neither pulp chambers nor continuous enamel tissue. Only a highly calcified deposit could be seen at the outer part of dentin in the microradiograph, and in the area corresponding to the pulp chamber, which was osteodentinlike hard tissue. In general, the pulp chamber of the natal tooth is wider than that of normal primary teeth and the pulp tissue shows normal structure (Bodenhoff and Gorlin 1963; Southam 1968; Darwish et al. 1987). On the other hand, the enamel covering of natal teeth is reported to be thin and usually hypoplastic with various degrees of hypomineralization (Anneroth et al. 1978; Darwish et al. 1987). When the tooth erupts prematurely, the uncalcified enamel matrix occasionally wears off. However, natal teeth with no enamel formation are extremely rare; there has been only one case reported in which cartilaginous like teeth erupted prematurely at birth (Horton 1924). Because of the histological irregularity of the hard structures, one may be reminded of the malformation of odontomas. Certainly, a microscopy of complex odontoma would show an irregular arrangement of dentin, enamel, cementum, and pulplike connective tissue, each tissue albeit being regularly formed. The structures in the present case, however, showed an irregular mass of malformed dentin devoid of enamel, suggesting different structures from odontomas.

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Anorexia nervosa may lead to broken bones

Anorectic women may be at increased risk for bone fracture due to decreased bone mass, according to a study published in the March 6, 1991 issue of the *Journal of the American Medical Association*. The study followed 27 women with anorexia nervosa for a median of 25 months (range 9–53 months).

"At study entry, cortical bone density...was low," wrote Nancy A. Rigotti, MD, of the General Internal Medicine Unit of Massachusetts General Hospital, with colleagues. Two patients had clinically apparent fractures before they participated in the study; three patients suffered four additional fractures during the study. The incidence of clinical fractures was significantly higher than has been reported in normal young women or female college athletes, according to the authors.