Double teeth in primary dentition: Report of two clinical cases

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Abstract
Odontogenic anomalies can occur as a result of conjoining or twinning defects. These include fusion, gemination and concrescence. This article presents two case reports of double teeth. In the first case reported, a 4 -year-old white boy presented primary double teeth associated to the absence of the right permanent mandibular lateral incisor. In the second case, a 5-year-old white girl had a family history of anomaly in primary dentition. The girl and her mother presented double teeth in the primary dentition. Her mother showed hypodontia in the permanent dentition. Extra and intra oral clinical examination was made in both cases. Radiographic analyses showed the involvement of the permanent tooth. Authors conclude that double teeth in primary dentition have to be carefully analysed as they may be associated with anomalies in the permanent dentition. Correct diagnosis of the condition implicates in a better prognosis for the patient.

Key words: *Dental pathology, double teeth.*

Introduction
Dental anomalies of number and forms may occur in the primary and permanent dentitions. The terms 'double teeth' (1-4), double formations', 'joined teeth' (2) 'fused teeth' (2,5,6) or 'dental twinning' (7) are often used to describe fusion or gemination, both of which are primary development abnormalities of the teeth.

Traditional terminology classifies fusion as a union of two separately developing tooth germs typically leading to one less tooth than normal in the affected arch. Radiographically two root canals and one or two roots may be evident (7 -9). In cases where it is found union of a normal tooth bud to a supernumerary tooth germ, the number of teeth is also normal and differentiation from gemination may be very difficult. In geminated teeth, division is usually incomplete and results in a larger tooth crown that has a single root and single canal. The phenomenon of gemination occurs when two teeth develop from one single bud leading to a larger tooth. The patient may present a normal number of teeth in the mouth (7) or a reduced number when hypodontia is associated.

It is supposed that pressing or physic strength can produce the contact between the teeth and depending upon the stage of development at the time of fusion, the union may be total or partial and may occur between a normal and a supernumerary tooth (10). It is important to observe that supernumerary teeth are not uncommon and they appear in 0.3 to 3.8 percent of the population (11). Supernumerary teeth occur most often as mesiodens, followed by premolars and fourth molars or distal molars (11-13). Almeida et al. (13), 1995 reported the occurrence of mesiodens in three siblings.

The present article describes two clinical cases of similar double teeth with a review of literature.

Case reports

Case report - 1

A 4-year-old white boy was brought to the Department of Bioscience and Oral Diagnosis because his tooth presented "mobility". The clinical extra oral examination did not show any different alteration. The clinical intra oral examination revealed the presence of double teeth (crowns 81 and 82). The patient had 15 teeth and oral structures showing normal pattern. No other anomalies were found, with exception to the tooth 51 that presented a slightly degree of mobility. His mother stated in the anamnesis that the mobility observed was related to a traumatic event occurred approximately 8 months before and that the family had never noticed that he had double teeth.

No further information obtained from familial and medical histories was related to the case. Radiographic examination revealed that teeth 81 and 82 had their pulp chambers individualised with normal size (Fig.1). The occlusal radiograph allowed the observation of the enlargement of the crown of tooth 41 and the absence of tooth 42.

The therapeutic conduct was restricted to the orientation of the mother about the preservation of the primary teeth. She had been told about the absence of the permanent mandibular right lateral incisor tooth.

Fig. 1. Case 1: Periapical radiograph illustrating mandibular primary double tooth showing individualised pulp chambers and normal size.

Case report – 2

A 5-year-old white girl was referred for examination of double teeth. No extra oral alteration had been observed in the clinical examination. Intra oral examination revealed double teeth, crowns 81 and 82 (Fig. 2). Oral and dental structures had a normal pattern obeying the chronology of eruption. Periapical radiographs of the region revealed that the teeth roots involved had two evident pulp chambers. In these radiographs it was possibly to visualise the presence of three teeth buds, two were compatible to 43 and 44, the third one represented the 42.

The girl's mother stated in the anamnesis that she had the same alteration in her primary dentition and the double teeth were removed due to an eruption delay of the permanent tooth. Clinical and radiographic exams from the mother revealed hypodontia of the permanent tooth 42 related to the double teeth in the primary dentition (Fig. 3).

Fig. 2. Case 2: Clinical aspect of mandibular primary double tooth (crowns of teeth 81 and 82) of the 5-year-old girl.

Fig. 3. Case 2: Panoramic radiograph of the mother showing an anomaly of permanent dentition (hypodontia of tooth 42).

Discussion

Double teeth are the most common type of dental anomalies in the primary dentition. Nik-Hussein and Abdul Majid (4), 1996, in their analysis of 65 children with dental anomalies in the primary dentition, observed that double teeth performed 75% of cases, where 94% were fusion and 6% were gemination. Both gemination and fusion are prevalent in primary dentition, with incisors being more affected (8, 10, 14). Hamasha and Al Khateeb (15), 2004 found that the incisors are also more affected in adults. But in some cases, it is very difficult to distinguish the differences between these two kinds of anomalies that have no clinical relevance (6). Signals of fusion/germination is minimum, being reduced fundamentally to esthetic damages, and the occupation of spaces, that can lead to dental crowding and difficulty in eruption of other dental pieces (14).

The importance is to identify the anomaly to organize a conservative individualized treatment plan (16). Hashim (17), 2004 suggest the orthodontic treatment to a case of a fused and rotated central incisor followed by a complementary esthetic treatment, to preserve the health and restore esthetic.

Aguiló et al. (1) showed that double teeth were mostly unilateral, involving two adjacent teeth, and no difference was found in the proportion of double teeth in either the maxilla or mandible, or on the left or right side. In both cases reported, in our study, the double teeth were localized in the region of incisors of the mandible.

It is very important to consider the complementary exams, such as periapical, occlusal and panoramic radiographs that allow the dentist to plan the treatment at proper time. The clinical interest for the appearance of double teeth in the primary dentition is the clinical problems associated with them, including caries (1), delayed exfoliation (2), and anomalies in the permanent dentition such as impaction of the successors (1), supernumerary teeth (2, 5, 4), permanent double teeth (4) or aplasia of teeth (1- 4, 18). The anomalies of permanent dentition are strongly associated with anomalies in the primary dentition (4). Therefore, early diagnosis of the anomaly has a considerable importance and it should be followed by careful clinical and radiographic observations that will allow surgical intervention at appropriate time (2, 7,14,16). According to Fernández Montenegro et al. (12), 2006 from 147 supernumerary teeth identified in the oral cavity of patients 145 were extracted.

The presence of double primary tooth can also cause delayed resorption of root due to greater root mass and increased area of root surface relative to the size of the permanent successor crown (2). This may lead to delayed or ectopic resorption of the permanent successor (3). It is also very important to prevent the possible damage choosing the right conduct. As Chaudhry et al. (7), 1997 concluded that dental twinning anomalies influence tooth alignment and interdigitation, arch symmetry, appearance, and associated periodontal tissues. In this way, it is important to recognize the dental anomalies that will allow us to plan a careful treatment, including endodontic (19), conservative, prosthodontic, periodontal and orthodontic considerations, when it is required (15). The patients' expectations and degree of compliance must also be accurately assessed when determining suitable management. Nik-Hussein and Abdul Majid (4), 1996 stated that the presence of double teeth in primary dentition is associated with finds in the permanent dentition in approximately 60% of the cases seen. The most common problem related to double teeth is hypodontia of the permanent dentition and it has been observed in 50% of affected subjects. Tooth agenesis is one of the most common craniofacial malformation. Its prevalence in permanent dentition reaches 20% and its expressivity ranges from only one tooth, usually a third molar, to the whole dentition (20).

Studying the family history of the second case reported in this article, we could observe that double teeth have been detected in the same teeth of the patient's mother. In the girl's mother radiographic exam it had been observed that she also had dental hypodontia of the permanent tooth. Brook and Winter (2), 1970 reported that half of the deciduous double teeth have been followed by an anomaly in the permanent dentition and family histories of hypodontia or supernumerary teeth were found in some cases. But, the aetiology of twinning defects may not be conjectured (7). Kolenc-Fusé (20), 2004 observed that genetic linkage and molecular biology studies allowed the identification of mutations responsible for some patterns of syndromic and nonsyndromic tooth agenesis.

As some authors (1-4, 17) report, in the first clinical case reported the patient had primary double teeth associated to the absence of the right permanent mandibular lateral incisor tooth.

In this way, fusion and gemination are not usual conditions, but they are important dental anomalies. Recognizing the condition will facilitate the establishment of a right treatment with multidisciplinary view.

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