An unusual distribution of supplemental teeth in the primary dentition

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Summary. Supernumerary teeth are more common in the permanent than the primary dentition [1]. In the latter, the majority occur in the maxillary lateral incisor region or as a mesiodens. Indeed, in one study conducted in the USA, all 26 cases of primary supernumerary teeth examined were found to be lateral incisors [2]. This report describes a case presenting with three erupted supernumerary (supplemental) teeth in the primary dentition, including, somewhat unusually, bilateral duplication of maxillary canines.

Introduction

Supernumerary teeth can be found in almost any region of the dental arch. Several theories surround their aetiology, hyperactivity of the dental lamina currently being that most widely supported by the dental literature. While there may be a genetic influence, this does not appear to follow a simple Mendelian pattern [1].

In 1974, Brook [2] reported that $2 \cdot 1\%$ of British children had supernumerary teeth in the permanent dentition, whereas only 0.8% had supernumerary teeth in the primary dentition. While this discrepancy may be the result of a difference in detection, with primary teeth being more likely to be missing because of exfoliation or early extraction, it has also been postulated that disturbances in interactions between epithelium and mesenchyme, which affect tooth development, are less likely to occur in primary teeth because of the more stable environment prior to birth [3]. Although studies have shown males to be more commonly affected than females [4], this difference rarely reaches statistical significance.

World-wide, few studies have measured the prevalence of supernumerary teeth in the primary

dentition [5], and statistics quoted in the dental literature are inconsistent. In their 1997 review of the literature, Scheiner & Sampson [6] suggested a prevalence of 0.3-1.7%. Previous, contemporary and subsequent studies have reported prevalence values at the lower end of this range. For example, Jarvinen & Lehtinen [7] showed a prevalence of 0.4% among children in Finland, while Miyoshi and coworkers [8] quoted one of 0.23-0.8% in Caucasians compared with 0.05% in Japanese, the very low prevalence in the latter group confirming the results of a previous study conducted by Yonezy and coworkers [9].

Based on a study conducted in New Zealand, Whittington & Durward [10] have suggested that the supplemental maxillary lateral incisor is the most commonly occurring supernumerary tooth in the primary dentition. Indeed, in this study, as in that reported by Gellin [11], all the supernumerary primary teeth examined were supplemental lateral incisors.

In an epidemiological survey conducted in Denmark [12], Ravn reported that only two out of 30 supernumerary primary teeth were canines, the remainder being mesiodens or lateral incisors. In support of this observation, only three reports of cases presenting with supplemental primary canines have appeared in more than 60 years of dental literature: Colyer & Sprawson [13] and Saad Ismail [14] have reported cases with bilateral duplication of primary canines, while Oehlers [15] has described

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Fig. 1. Maxillary and mandibular arches (anterior view).



Fig. 3. Mandibular arch (mirror view).



Fig. 2. Maxillary arch (mirror view).

a male patient with a unilateral supplemental primary canine.

Case report

BM, a Caucasian male, was referred to the emergency service provided by the Paediatric Dentistry Unit of the University Dental Hospital, Cardiff, UK. The referring general dental practitioner reported that BM had an 8-month history of biting inanimate objects (e.g. door stops) and, occasionally, his siblings. His mother had expressed concern that this might be attributable to the observed presence of multiple supernumerary primary teeth.

At his first attendance at the Paediatric Dentistry Unit, BM was noted to be a healthy 22-month-old with no relevant medical history. Intraoral examination revealed the presence of a complete primary dentition, together with a unilateral (right) supplemental maxillary primary incisor and bilateral supplemental maxillary



Fig. 4. Close up view of maxillary anterior primary teeth.

primary canines (Figs 1–4), i.e. the following teeth were present:

EDCCBBA ABCCDE EDCBA ABCDE

(55, 54, 53, 53, 52, 52, 51; 61, 62, 63, 63, 64, 65; 75, 74, 73, 72, 71; 81, 82, 83, 84, 85).

No family history of supernumerary teeth could be elicited.

In view of BM's age and likely cooperation, radiographic examination was considered unjustified. His mother was advised as to the possible consequences for the permanent dentition and reassured that this dental anomaly was unlikely to bear any relationship to the reported behavioural problems. BM remains under regular review within the Paediatric Dentistry Unit, with the aim of seeking radiographic evidence of the status of the permanent dentition as soon as it is possible to justify exposure to ionizing radiation on the basis of the likely attainable diagnostic yield.

Discussion

There is little evidence in the dental literature relating the presence of supplemental primary canines to the status of the permanent dentition. However, it should be noted that, in the case reported by Colyer & Sprawson [13], bilateral duplication of canines in the primary dentition was replicated in the permanent series. In contrast, there is ample evidence to demonstrate the effect of supernumerary lateral incisors in the primary dentition on the number of permanent successors. According to Gellin [2], when a supernumerary primary anterior tooth is identified, any one of the following consequences to the permanent dentition is possible:

- a normal complement of permanent anterior teeth will be present;
- a corresponding supernumerary permanent anterior tooth will be present; and/or
- a succedaneous anterior tooth will (rarely) be missing.

Gellin reported 24 cases presenting with a unilateral supernumerary lateral incisor. In 15 (63%) of these, a corresponding supernumerary permanent lateral incisor was also shown to be present. This observation is in accordance with the suggestion of Nik-Hussein & Majid [16] that a supernumerary primary tooth is followed by an analogous supernumerary permanent tooth in between 35% and 60% of cases.

Although no treatment of supernumerary teeth is recommended in the primary dentition, the parent should be informed of the range of possible consequences to the permanent dentition, even in the absence of radiographs of the affected area. Intraoral radiographs should be taken as soon as possible to allow the dentist to plan for treatment at the appropriate time.

The following points should be noted:

- This is only the third reported case of duplicate primary canines in over 60 years of dental literature.
- While there is little documentary evidence to relate the presence of supplemental primary canines to the status of the permanent dentition, it is important to bear in mind that this anomaly may be replicated in the permanent series.
- Parents should be informed of the range of possible consequences to the permanent dentition.
- Intraoral radiographs should be taken as soon as possible to allow the dentist to plan for treatment at the appropriate time.

What this case report adds

• A 22-month old boy presented with a unilateral supplemental maxillary incisor and bilateral supplemental maxillary canines.

Why this case report is important to paediatric dentists • The presence of supplemental primary canines is extremely rare.

• There is no clear relation to a supplemental permanent canine.

• No treatment of supernumerary teeth in the primary dentition is recommended. The parents should be informed about the possible consequences for the permanent dentition.

Résumé. Les dents surnuméraires sont plus fréquentes en denture permanente que temporaire. Dans cette dernière, la majorité survient dans la région incisive maxillaire latérale ou comme un mesiodens. Dans une étude menée aux USA, tous les 26 cas de dents temporaires surnuméraires examinés étaient des incisives latérales. Nous rapportons dans cet article le cas de trois dents surnuméraires (supplémentaires) ayant fait leur éruption en denture temporaire, incluant de façon assez inhabituelle une duplication bilatérale de canines maxillaires.

Zusammenfassung. Überzählige Zähne sind im bleibenden Gebiss Häufiger als bei Milchzähnen. Weiterhin ist die Mehrzahl dieser Zähne bei seitlichen Schneidezähne oder in Form des Mesiodens anzutreffen. In einer Studie aus den USA waren alle 26 überzähligen Milchzähne seitliche Schneidezähne. In diesem Fallbericht wird ein Fall dargestellt mit drei durchgebrochenen überzähligen Milchzähnen, darunter (ungewöhnlicherweise) eine beidseitige Verdoppelung der Oberkiefer Eckzähne.

Resumen. Los dientes supernumerarios son más frecuentes en la dentición permanente que en la dentición primaria [1]. En esta última, la mayoría ocurre en la región del incisivo lateral superior o en forma de un mesiodens. Efectivamente, en un estudio realizado en USA, se encontró que los 26 casos de dientes supernumerarios primarios examinados eran incisivos laterales [2]. Aquí informamos de un caso que se presenta con tres dientes supernumerarios en la dentición primaria, incluyendo (algo inusual) duplicación bilateral de los caninos superiores.

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