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Missing C, supplemental D and supplemental premolar all in one quadrant: a case report

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Summary. This case report describes a non-syndromic Caucasian patient who presented with a missing upper right primary canine and a supplemental upper right primary first molar. Later, a supplemental premolar developed in the upper right quadrant. The report highlights the importance of early diagnosis of dental anomalies and a multidisciplinary approach to treatment planning. A regular review and radiographic examination are essential.

Introduction

Hypodontia is defined as the absence of some teeth. It is more common in the maxilla than the mandible [1]. Hypodontia in the primary dentition is rare and had been reported to have a prevalence 0·1–0·9% [1] in the Caucasian population, with equal prevalence between males and females [1,3]. Management of this condition relies on its severity, but it is unusual to find that it requires treatment in the primary dentition. Gellin [3] reported that the only missing anterior primary tooth in 18 cases of hypodontia was the primary lateral incisor. There is no mention in the literature of a case of a missing primary upper canine in a non-syndromic patient.

Supernumerary teeth are extra teeth to the normal set, and these can occur in both the primary and permanent dentitions [1,2,5]. Supernumerary teeth have a prevalence of 0·2–0·8% in the primary dentition [4], with up to 50% of supernumerary teeth forming in the premaxilla [5]. They are usually classified according to their location or form [5]. Those which resemble the form of the normal dentition are called supplemental teeth. Most supernumerary teeth in the primary dentition are of the supplemental type [5]. The prevalence of supernumerary teeth in the permanent dentition is 1·5–3·5% [4].

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The following case report presents a case of a non-syndromic patient with three different dental anomalies which occurred in both the primary and permanent dentition.

Case report

A non-syndromic Caucasian male aged 4·5 years was referred to the Glasgow Dental Hospital, Glasgow, UK, by his general dental practitioner (GDP) because of the failure to erupt of tooth 53. The patient had no history of dental trauma or extractions, nor was there a family history of dental anomalies. On examination, all the primary teeth had erupted apart from 53, which was missing, and there was also a supplemental 54. The dentition was caries-free (Fig. 1). A dental panoramic tomogram (orthopantomograph, OPT) (Fig. 1) and periapical views (Fig. 2) were taken, which confirmed the clinical findings. The supplemental primary first molar and premolar were of normal tooth morphology and development. Radiographically, all permanent teeth appropriate to the patient's age were developing.

The patient was kept under regular yearly review. At the age of 7 years, the upper right lateral incisor (12) and permanent canine (13) started to erupt. An orthodontic opinion was sought, and the extraction of the supplemental upper right first molar was advised to create enough space to relieve localized crowding and encourage spontaneous alignment of the erupting permanent teeth (Fig. 3).

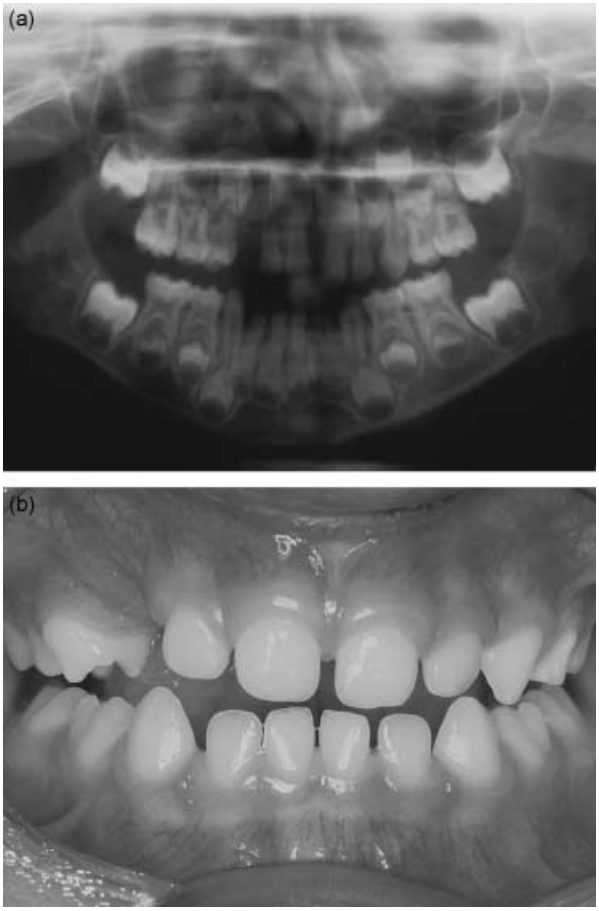

Fig. 1. Orthopantomograph taken at the initial consultation, when the patient was 4·5 years old, showing a missing 53, a supplemental 54 and developing permanent dentition.

Fig. 2. Periapical view showing a 54 with its supplemental first primary molar and a missing 53.

This was carried out by the patient's GDP under local analgesia.

By the age of 12 years, the presence of a late-developing supernumerary tooth in the upper right

Fig. 3. Orthopantomograph taken when the patient was 7 years old showing 12 and 13 erupting.

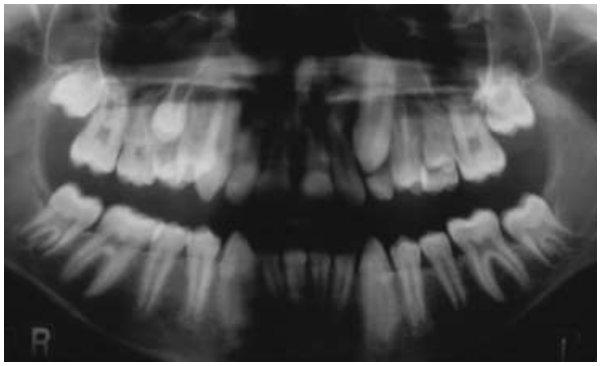

Fig. 4. Orthopantomograph taken when the patient was 12 years old showing the development of a supernumerary premolar in the upper right quadrant.

permanent premolar area became evident radiographically (Fig. 4). Clinically, the developing tooth was palpable palatally. It was decided to await the eruption of the supplemental premolar and to extract the more palatal premolar, provided the one in line of the dental arch was of normal coronal and root morphology and development.

Discussion

This case report describes a missing primary upper canine, which might be the first to be reported in the literature. It also describes the development of supplemental primary first molar and the later development of a supplemental premolar, all of which presented in the same quadrant of a non-syndromic Caucasian child.

Hypodontia in the primary dentition most commonly affect the lateral incisors [1–3]. In a study

of British school children [2], the prevalence of dental anomalies in 741 subjects aged 3–5 years and 1115 aged 11–14 years was reported. In the primary dentition, the prevalences of hypodontia and supernumerary teeth were 0·3% and 0·8%, respectively. There was no difference found between the two sexes. In the permanent dentition, the prevalence of supernumerary teeth was 2·1%, and it was higher in females than males; however, it was not as high as other reports. The prevalence of developing permanent supernumerary teeth in children in the 3–5-year-old age group was found to be 1·6%. The difference between the two age groups could be caused by the late development of supernumerary teeth, which has been described in a number of case reports [6,7]. Gellin [3] made an interesting conclusion with regard to the sequelae of missing an anterior primary tooth on the development of its permanent successors. In the absence of an anterior primary tooth, the above author observed the development of four, five or six anterior permanent teeth.

This case report confirms a number of common findings in supernumerary cases. It is reported that supernumerary teeth occur more frequently in the maxilla than the mandible. The condition is more prevalent in males than females, with 2:1 being the reported ratio in the permanent dentition [1,5]. When it occurs in the primary molar or permanent premolar regions, it is likely to be of the supplemental type.

The aetiology [4] of this anomaly is still not confirmed. Theories which explain the origin of extra teeth include: (1) excessive growth of the dental lamina; (2) proliferation of remnants of the dental lamina; (3) division of tooth germ; and (4) genetic factors. Conditions which have been associated with supernumerary teeth include cleft lip and/or palate, cleidocranial dysostosis, and Gardner's syndrome [1,5], but none of these conditions was present in this patient.

The permanent upper right canine has developed despite the absence of its predecessor. The tooth was of normal morphology, size and site of eruption; however, the tooth started to erupt earlier than the contralateral canine and was also precocious in comparison to the average eruption dates of upper canines.

One of the very important points highlighted in this report is the value of early diagnosis, regular review and serial radiographic reviews of dental anomalies cases [1,4–7]. This greatly aids the appropriate treatment and management of each case.

Conclusion

Hypodontia in the primary dentition does not necessarily result in hypodontia in the permanent dentition. Early diagnosis by GDPs and referral to specialists is important. Treatment planning should involve a multidisciplinary approach. Regular clinical and radiographic reviews are of paramount importance in order to detect any late-developing supernumerary teeth, and thus to facilitate early intervention.

Résumé. Ce rapport concerne un patient caucasien sans syndrome présentant une canine temporaire droite maxillaire manquante ainsi qu'une première molaire temporaire droite supérieure surnuméraire. Une prémolaire supplémentaire s'est développée plus tard dans le quadrant maxillaire droit. Ce rapport illustre l'importance d'un diagnostic précoce des anomalies dentaires et la nécessité d'une approche multidisciplinaire dans la prise en charge. Un suivi et un examen radiographique réguliers sont essentiels.

Zusammenfassung. In diesem Fallbericht wird ein kaukasischer Patient vorgestellt, bei welchem ein oberer rechter Milcheckzahn fehlte und ein überzähliger erster Milchmolar vorkam. Später kam es zu einem Durchbruch eines überzähligen bleibenden Prämolaren in diesem Quadranten. Dieser Fallbericht belegt die Bedeutung einer Diagnostik von Zahnanomalien sowie der interdisziplinären Therapieplanung. Regelmäßige Kontrollen und angemessene röntgenologische Diagnostik sind nötig.

Resumen. Se trata del informe de un caso de un paciente caucásico no sindrómico que presentaba la ausencia de un canino temporal superior derecho y un primer molar temporal superior derecho suplementario. Más tarde se desarrolló un premolar suplementario en el cuadrante superior derecho. Este informe subraya la importancia del diagnóstico precoz de las anomalías dentarias y de una aproximación multidisciplinaria al plan de tratamiento. Son esenciales una revisión regular y un examen radiográfico.

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