



RESEARCH ARTICLE

SUPPLEMENTAL CENTRAL INCISOR IN PRIMARY DENTITION WITHOUT A PERMANENT SUCCESSOR: A RARE CASE REPORT

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ABSTRACT

Background: Anomalies of the dentition may involve either number or morphology and can occur either in the primary and/or permanent teeth. Based on the anomalies relating to number, supernumerary teeth are most common.

Case Description: This article presents a rare case of a six year old boy with supplemental primary maxillary central incisor without a permanent successor. Clinical and radiographic examination revealed the presence of a supplemental (type of supernumerary) primary central incisor in the maxillary arch.

Conclusion: Occurrence of supernumerary supplemental maxillary primary central incisor without a successor in the permanent dentition is a rare phenomenon.

Clinical Significance: Recognition anomalies of teeth related to number are important during routine dental examination. Its detection requires the careful counting and identification of each tooth in the dental arch. Dentists should be aware of this condition when unusual crowding and/or displacement are seen. Early diagnosis may provide a better opportunity for optimal outcome of treatment.

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INTRODUCTION

Supernumerary teeth may be described as any tooth or tooth substance in excess of the usual configuration of twenty deciduous and thirty - two permanent teeth. (Schulze, 1970) Four different morphological types of supernumerary teeth have been described (Barry, 1999):

- Conical
- Tuberculate
- Supplemental
- Odontome

The supernumerary tooth which bears resemblance to the tooth with which it is associated is called supplementary teeth. It was Tomes who first used the term supplemental tooth more than a century ago referring to an extra tooth resembling a tooth of the normal series of the dentition. (Tomes, 1887) Supplemental maxillary incisors are much less common than conical or tuberculate supernumerary teeth in the anterior region (Nuvvula et al., 2011). A study by Marinelli et al (Marinelli et al., 2012), reported there is an increased likelihood of repetition anomalies in the succedaneous

permanent dentition if the primary dentition is associated anomalies. Primosch in 1981 reported that the majority of primary extra teeth are supplemental, mostly lateral incisors. (Beere et al., 1990). Whittington & Durward conducted a study in New Zealand (Whittington et al., 1996) have suggested that the supplemental maxillary, lateral incisor is the most commonly occurring supernumerary tooth in the primary dentition. With these observations in mind, the present case is a rare one, as the involved tooth was a primary maxillary central incisor (PMCI) without the presence of a permanent successor.

Case Report

A 6-year-old boy visited the Department of Pedodontics and Preventive Dentistry at Rajarajeswari Dental College and Hospital with the chief complaint of decayed teeth. The patient's medical history and family history was non-contributory, there was no previous trauma to the teeth or jaws and extra oral examination revealed no abnormality. Soft tissue examination showed marginal gingivitis in the mandibular anterior region and hard tissue examination revealed presence of supplemental primary central incisor in the anterior region of the maxilla and proximal caries in relation to primary maxillary right first and second molars and primary mandibular left first molar. On the left side, there were three

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incisors, one of which was slightly rotated in a mesiolingual version. All the incisors were of similar morphology (Figure 1 and 2). Intra oral periapical radiograph confirmed the presence of a supplemental PMCI with no permanent successor in the maxillary anterior region.

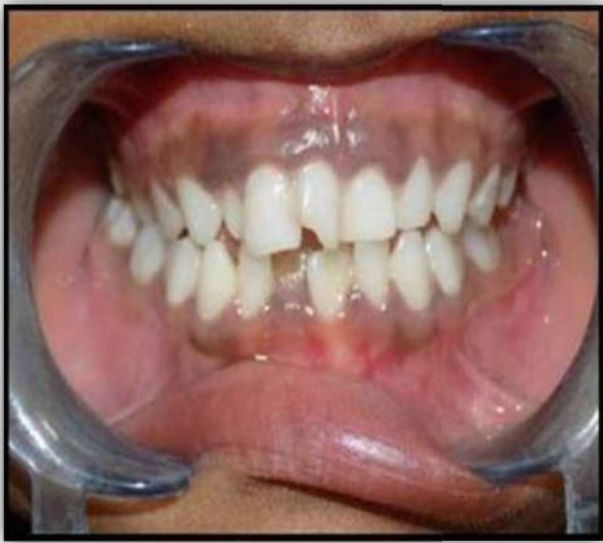


Figure 1. Intraoral view of supplemental central incisor



Figure 2. Occlusal view of supplemental central incisor

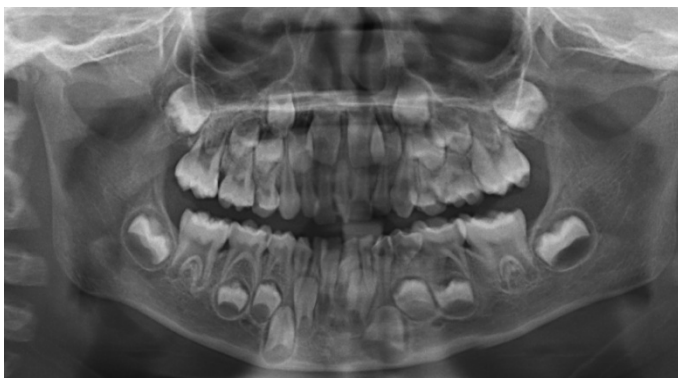


Figure 3. Orthopantomograph confirming presence of supplemental tooth

The supplemental PMCI had an individual root with a single root canal. An orthopantomograph confirmed presence of supplemental tooth resembling PMCI with no presence of its

permanent successor (Figure 3). No other abnormalities were detected in the orthopantomograph. Dental treatment included oral prophylaxis and restoration of the decayed teeth with Glass Ionomer Cement. The parents were cautioned that this supplemental tooth might cause future problems in terms of delayed or ectopic eruption of underlying permanent teeth, crowding, and might need to be extracted if it does not exfoliate by itself. The patient was advised to maintain good oral hygiene and to get periodic dental check-up every six months.

DISCUSSION

Evidence in dental literature relating the presence of supplemental PMCI to the status of the permanent dentition is little. The pathogenesis of supernumerary teeth in general is still debated. While phylogenetic theories are of historical value (Giudice *et al.*, 2008), currently, environmental factors are considered and dichotomy of the tooth bud is suggested as a possible etiological factor in the development of supernumerary teeth. (Rajab *et al.*, 2002) In the literature the frequency of supernumerary and supplemental teeth is reported to be higher in males than females and the proportion in the primary dentition the ratio is 1:1 (Giudice *et al.*, 2008) Supplemental teeth are less common than other supernumerary teeth and are often overlooked because of their normal shape and size. (Bahadure *et al.*, 2012). Based on a study of 8,500 school children, eight supplemental maxillary lateral incisors and only one central incisor was found (Tinn, 1940). Usually it is difficult to distinguish the normal tooth from its supplemental twin (Bahadure *et al.*, 2012). Supplemental teeth may cause esthetic problems, delayed eruption and crowding and they require early diagnosis and treatment to prevent complications. According to Gellin (Brook, 1974), 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.

The significance of the present case lies in the presence of supplemental PMCI was not accompanied by its permanent successor, which is in contrast to usual findings reported. Radiographic examination did not reveal any supplemental tooth or any other missing tooth in the permanent dentition. The presence of the supplemental PMCI did not cause any esthetic problem nor was it considered responsible for delayed eruption of permanent incisors, hence they were not extracted but maintained in the arch. It is imperative to inform the parent about the range of possible consequences to the permanent dentition due to the presence of the supplemental PMCI.

Conclusion

We as clinicians must be aware about the presence of supernumerary teeth of any type, as they not uncommon in primary dentition. These teeth can interfere with normal eruption and also can be an esthetic concern and a cause of various malocclusions of permanent teeth. If asymptomatic no treatment is recommend and can be left as such.

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