Case Report

Received : 08-10-13
Review completed : 03-12-13
Accepted : 12-12-13

SUPPLEMENTAL MAXILLARY LATERAL INCISOR IN PRIMARY AND PERMANENT DENTITION: A CASE REPORT

Prasanna Kumar Bhat, * Navin H. K., ** Rohit Srikanthan, *** Niharika Rai †

* Senior Lecturer, Department of Pedodontics & Preventive Dentistry, Rajarajeswari Dental College and Hospital, Bangalore, Karnataka, India
** Reader, Department of Pedodontics & Preventive Dentistry, Rajarajeswari Dental College and Hospital, Bangalore, Karnataka, India
*** Reader, Department of Oral and Maxillofacial Surgery, Rajarajeswari Dental College and Hospital, Bangalore, Karnataka, India
† Post Graduate Student, Department of Pedodontics & Preventive Dentistry, AECS Maaruti College of Dental Sciences and Research Centre, Bangalore, India

ABSTRACT

Supernumerary teeth occur frequently in permanent dentition, but they are rarely found in primary dentition. Supernumerary teeth of orthodox shape and size that resemble normal dentition are called 'supplemental teeth'. Supplemental teeth are less common than supernumerary teeth and are often overlooked because of their normal shape and size. They may causes esthetic problems, delayed eruption and crowding, and they require early diagnosis and treatment to prevent complications. The case reported here presents unilateral supplemental primary and permanent maxillary lateral incisor impeding the eruption of permanent maxillary lateral incisor and also emphasizes the importance of early diagnosis and treatment of the same.

KEYWORDS: Supplemental teeth; Primary dentition; Permanent dentition

INTRODUCTION

Supernumerary teeth are defined as teeth in excess of the normal dental formula.[1,2] They may be single or multiple; unilateral or bilateral; erupted or unerupted; in one or both jaws. It may closely resemble the teeth of the group to which it belongs, i.e. molars, premolars or anterior teeth, or it may bear little resemblance in size or shape to which it is associated. Supernumerary teeth can be classified according to their form and location. Primosch classified supernumeraries into two types according to their shape: supplemental and rudimentary.[1] Supplemental refers to supernumerary teeth of normal shape and size and may also be termed incisiform. Rudimentary defines teeth of abnormal shape and smaller size, including conical, tuberculate and molariform. Positional variations include mesiodens, paramolars, distomolars and parapremolars.[1] The prevalence of supernumerary teeth in permanent teething oscillates to 0.5-3.8%, in comparison to 0.3-0.6% in primary teething.[3] 35%–50% of supernumerary teeth in primary dentition are superseded by extra teeth in the same location in the permanent dentition. It has been found that approximately 25% of the permanent supernumerary teeth are erupted and the remainder are unerupted, whereas 73% of the primary supernumerary teeth are erupted. Supernumerary teeth appear with a higher frequency in men than in women, with a ratio of 2:1. The most frequent location of supernumerary teeth is in the maxilla, on the anterior medial region. More rarely, they can be located in the superior distomolar zone, inferior premolar, superior premolar, inferior distomolar, superior lateral incisor, canine and inferior incisor zone.[4] The exact etiology of supernumerary teeth is unknown, however, several theories have been postulated to explain their presence. The phylogenetic theory as a regression to the anthropoids whose dental arch had more teeth, the autonomic recessive inheritance or linked to the X chromosome, an abnormal reaction to a local traumatic episode, environmental factors, dichotomy of the tooth germ and the theory of hyperactivity of the dental lamina, are the most accepted.[5] Supplemental teeth, as the name implies, refer to teeth that are duplications of teeth in the normal series. Supplemental teeth in both primary and permanent dentition are most commonly located in the anterior maxillary region. Supplemental teeth in permanent dentition

Fig. 1: Showing Developing Anterior Crossbite irt 11/41 and Supplemental Primary Right Lateral Incisor

Fig. 2: Showing Pre op Maxillary Arch

Fig. 3: Showing Pre op Maxillary Anterior Occlusal Radiograph

Fig. 4: Showing Pre op Intra Oral Periapical Radiograph irt 12

Fig. 5: Showing Extracted Supplemental Primary & Permanent Maxillary Lateral Incisor

Fig. 6: Showing Post op Maxillary Arch

Fig. 7: Showing Post op Intra Oral Frontal View

Fig. 8: Showing Post op Maxillary Anterior Occlusal Radiograph

is most likely to appear as extra maxillary and mandibular lateral incisor, whereas in primary dentition it is most likely to appear as upper central incisor.[6]

This case report emphasizes the importance of early diagnosis and treatment in the clinical management of unilateral supplemental primary and permanent maxillary lateral incisor

CASE REPORT

A 10 year old male child reported to the Department of Pedodontics and Preventive Dentistry with a chief complaint of over retained milk teeth in the upper anterior region. The patient's medical and family histories were non-contributory and extraoral examination revealed no abnormality. Intraoral examination showed late mixed dentition with over retained 51 and associated palatally erupting 11 which was in cross bite relation to 41 (Fig. 1 & Fig. 2). The presence of unilateral right supplemental primary maxillary lateral incisor was noticed (Fig. 2). Other findings revealed grossly decayed teeth in relation to 54, 64, 75; root stumps in relation 55, 65, 74, 84, 85; deep carious lesion with pulpal exposure in relation to 46, which was tender on vertical percussion and dental caries in relation to 53, 16, 26 and 36. Maxillary anterior occlusal radiograph and Intra oral periapical radiograph in relation to 12 revealed unilateral right supplemental permanent maxillary lateral incisor (Fig. 3 & Fig. 4). All carious teeth were restored. Grossly decayed teeth, root stumps and over retained deciduous teeth were extracted and endodontic therapy was carried out for 46. The right primary maxillary lateral incisor was extracted to facilitate the correction of anterior cross bite in relation to 11/41 along with the tongue blade therapy for 2 weeks. Extraction of supplemental primary maxillary lateral incisor was carried out following which a mucoperiosteal flap was elevated and the impacted right supplemental permanent maxillary lateral incisor was extracted to facilitate the eruption of permanent right maxillary lateral incisor (Fig. 5). The mucoperiosteal flap was closed with interrupted sutures and the sutures were removed 1 week following extraction. The patient was recalled for tri-monthly clinical and radiographic examinations in order to closely follow the eruption pathways of the remaining teeth (Fig. 6 & Fig. 7). The treatment was uneventful and the third month recall showed erupting permanent right maxillary lateral incisor with mesiolingual rotation (Fig. 8). Patient is now under regular review regarding future orthodontic treatment.

DISCUSSION

Supernumerary teeth are infrequent developmental alterations that may manifest in any zone of the dental arches and involve any tooth. They may be associated with a syndrome or they can be found in non-syndromic patients.[4] Supernumerary teeth can be either eumorphic or supplemental and dysmorphic: conical, tubercular or mixed.[2] Supernumerary teeth are less common in the deciduous dentition with a reported incidence of 0.3 percent to 0.6 per cent of the population. Possible explanations for the less frequent reporting of deciduous supernumerary teeth include less detection by parents, as the spacing frequently encountered in the deciduous dentition may be utilized to allow the supernumerary tooth or teeth to erupt with reasonable alignment. Also, many children have an initial dental examination following eruption of the permanent anterior teeth so anterior deciduous supernumerary teeth which have erupted and exfoliated normally would not be detected.[7] Humerfelt *et al.*, pointed out that hyperdontia in primary dentition is often overlooked because the additional teeth often erupt normally, are of normal shape and appear to be in proper alignment, as in the case reported here.[8] Distinguishing between a normal tooth and its supplemental 'twin' may be difficult. A supplemental tooth may exhibit deep palatal pit and coronal invagination.[8] In the case reported here, the supplemental teeth were unilateral right primary and permanent maxillary lateral incisor.

Hyperdontia observed in primary dentition should alert the clinician to the possibility of hyperdontia in the permanent dentition. A careful radiographic survey of both dental arches will provide the clinician and the parents with a preview of any potential problems likely to develop during the course of the child's growth and development. In the case reported here, supplemental teeth in the primary dentition was superseded by supplemental teeth in the same location in the permanent dentition. Taylor *et al.*,[7] found that 88.5% of the patients with supernumerary teeth had clinical complications. Various complications are associated with supernumerary teeth, including impaction, delayed eruption, or ectopic eruption of adjacent teeth; crowding; development of median diastema; eruption into the floor of the nasal cavity; formation of primordial or follicular cysts, with significant bone destruction; root resorption of adjacent teeth; and esthetic problems, including those associated with crowding.[1,2,9] In the case report

here supplemental permanent lateral incisor caused distolingual rotation of permanent right central incisor and delayed eruption of permanent right lateral incisor. Controversy exists regarding the optimal treatment of delayed eruption due to supernumerary involvement. The options include removal of the supernumerary only, removal of the supernumerary and orthodontic treatment to re-establish sufficient space for the delayed tooth, with or without surgical exposure of the unerupted tooth at the time of supernumerary tooth removal. Spontaneous eruption following supernumerary removal is suggested to be in the range of 54%[20] to 75 %.[10] DiBiase[10] suggests that most teeth experiencing delayed eruption will spontaneously erupt within 18 months of supernumerary removal alone, providing the delayed eruption teeth are not excessively displaced. In the present case reported here, spontaneous eruption of permanent right lateral incisor took place within 3 months of removal of supernumerary teeth. Timing of surgical removal of supernumerary teeth has also been contentious. Hogstrum and Andersson[9] suggested two alternatives exist. The first option involves removal of the supernumerary as soon as it has been diagnosed. This could create dental phobia problems for a young child and has been said to cause devitalization or deformation of adjacent teeth. Secondly, the supernumerary could be left until root development of the adjacent teeth is complete. The potential disadvantages associated with this deferred surgical plan include; loss of eruptive force of adjacent teeth, loss of space and crowding of the affected arch and possible midline shifts. The presence of an extra tooth also has great potential to disrupt normal occlusal development, and early intervention to remove it is usually required to obtain reasonable alignment and occlusal relationship. Thus early diagnosis and treatment of patients with supernumerary teeth are important to prevent or minimize complications.

CONCLUSION

Supernumerary tooth may resemble any tooth in the arch. Careful clinical and radiographic examination may provide us to find out that such rare entities helps us to detect other dental anomalies or syndromes and the associated clinical problems which should be appropriately treated. Early diagnosis of supernumeraries is crucial for minimal complications, timely intervention and a favourable prognosis. Close observation with regular radiographic controls is recommend.

BIBLIOGRAPHY

1. Primosch RE. Anterior supernumerary teeth-Assessment and surgical intervention in children. Pediatr Dent. 1981;3:204-15.
2. Garvey MT, Barry HJ, Blake M. Supernumerary teeth-An overview of classification, diagnosis and management. J Can Dent Assoc. 1999;65:612-6.
3. Gibson N. A late developing mandibular premolar supernumerary tooth. Austr Dent J. 2001;46:51-2.
4. Leco Berrocal MI, Martín Morales JF, Martínez González JM. An observational study of the frequency of supernumerary teeth in a population of 2000 patients. Med Oral Patol Oral Cir Bucal. 2007;12:134-8.
5. Rao PV, Chidzonga MM. Supernumerary teeth: literature review. Cent Afr J Med. 2001;47:22-6.
6. Sharma A. Mandibular midline supernumerary tooth: a case report. J Indian Soc Pedo Prev Dent. 2001;19:143-4.
7. Taylor GS. Characteristics of supernumerary teeth in the primary and permanent dentitions. Dent Pract Dent Rec. 1972;22:203-8.
8. Humerfelt D, Hurlen B, Humerfelt S. Hyperdontia in children below four years of age: A radiographic study. J Dent Child. 1985;52:121-4.
9. Hogstrom A, Andersson L. Complications related to surgical removal of anterior supernumerary teeth in children. ASDC J Dent Child. 1987;54:341-3.
10. DiBiase D. The effects of variations in tooth morphology and position on eruption. Dent Pract. 1971;22:95-108.

Source of Support: Nil
Conflict of Interest: Nil