

Supernumeraries: No more an added number, but an added advantage

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Received - 13 January 2020

Initial Review - 28 January 2020

Accepted - 13 February 2020

ABSTRACT

In today's world, extraction of an extra tooth is the rule of thumb and retention is never thought of. Here, we present a case series of two cases in which supernumeraries in the anterior region were retained to the advantage of the patient, for preventing malocclusion, retaining space, and enhancing esthetics of the individual. Supernumerary tooth refers to any tooth in excess of the usual configuration of the normal number of primary or permanent teeth. Its prevalence in permanent dentition is between 0.5% and 5.3% and between 0.2 and 0.8% in the primary. Treatment options involve surgical or conventional extraction. Complications associated with supernumeraries make it important to recognize and manage them early so as to prevent malocclusions and malalignments in permanent dentition. In the first case, supernumeraries were maintained until the eruption of permanent central to preserve space. In the second case, the supernumerary tooth was brought down with orthodontic traction and reshaped to simulate the contralateral tooth.

Key words: *Esthetics, Space maintenance, Supernumerary, Surgical exposure, Traction, Unerupted tooth*

Supernumerary teeth refer to any teeth in excess of the usual configuration of the normal number of primary or permanent teeth. Its presence can cause a delayed eruption of the successor (26–52%), displacement or rotation of permanent teeth (28–63%), resorption of the adjacent tooth roots, diastema, dentigerous cysts, premature space closure, altered alignment, and appearance of a child and psychological trauma to parents [1,2]. Their presence is detected during clinical or radiographic examination, usually in the early mixed dentition period, without there being an association with pathology in 7–20% of the cases.

According to various studies, the prevalence of supernumerary teeth in primary dentition ranges from 0.5% to 5.3% and about 0.2–0.8% in permanent dentition. No significant gender predilection was found in primary dentition; whereas, it was found to occur twice more in males as compared to females in permanent dentition. Commonly found to occur at around 7–9 years in the anterior maxilla in 80–90% of the cases; genetic and environmental factors have always been considered to play a role in the etiology of supernumerary teeth.

Supernumeraries are usually managed through conventional or surgical extraction. Spontaneous alignment of the adjacent permanent teeth occurs if the intervention is done in the early mixed dentition [3]. Crowding in the primary dentition can cause crowding in the permanent dentition too [4]. Here, we report a case series of two cases where supernumerary teeth have been preserved for the advantage of the child patient to prevent malocclusion and improve esthetics.

CASE REPORT

Case 1

A 6-year-old boy reported with the chief complaint of crowding in relation to the upper front region. On examination, it was seen that the boy had a repaired cleft of the palate and a crowded, constricted maxillary arch. The primary anterior teeth showed crowding and were in a scissor bite. The presence of supernumerary supplementary laterals was interposed in a primary dentition, i.e., distal to 51 and distal to 61 (Fig. 1). Since the permanent central incisors showed more mesiodistal width than that of the primary anterior, crowding of teeth would increase if the supernumeraries were extracted at that stage.

An intraoral periapical radiograph showed that the primary central incisor, lateral incisors, and the supernumeraries had sound root structure. The treatment was decided to retain and align the supplementary teeth as space maintainers until the eruption of the maxillary permanent central incisors. The crossbite and crowding were corrected using a slow expansion appliance. The periodic recall was carried out until the exfoliation of 51, 61 and eruption of 11, 21. A follow-up radiograph revealed that the mesiodistal width of 11, 21 was much more than the space available for its eruption. The supplementary teeth were then extracted along with the primary central incisors to accommodate the erupting maxillary central incisors (Fig. 2). The erupting permanent teeth were also found to be in crossbite which was later corrected by an appliance therapy (Fig. 3).

Case 2

A 9-year-old female child came to the department with the chief complaint of unerupted upper left central incisor even after the eruption of its right counterpart. A detailed history revealed a history of trauma at the age of 4 years. Clinical examination showed the absence of the left permanent central incisor. The contralateral central incisor and the right and left lateral incisors had erupted. An occlusal radiograph showed the presence of a supernumerary tooth in the region with the unerupted central incisor lying in close contact to it (Fig. 4a). The central incisor had a well-formed crown but the root was dilacerated as seen in consequent radiographs. The supernumerary tooth exhibited good root structure and was favorably positioned to be brought down with orthodontic traction to the area of the missing central incisor (Fig. 4b).



Figure 1: (a) Intraoral occlusal view showing supplemental lateral incisors distal to maxillary left and right primary central incisors; (b) Frontal view showing the presence of supplemental lateral incisors found in between maxillary right primary central incisor and lateral incisor

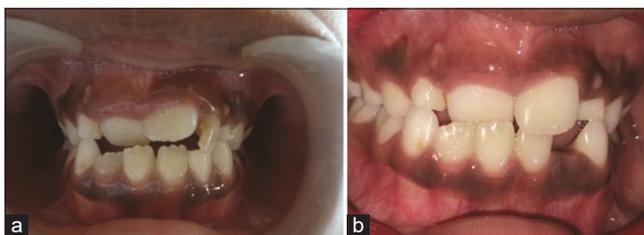


Figure 2: Photograph showing (a) maxillary permanent central incisors erupting into the oral cavity; (b) maxillary right central incisor erupting in crossbite in the lower incisors



Figure 3: Post-operative photograph after the correction of crossbite

Surgical exposure of the mesiodens was done and orthodontic bracket fixed onto it. Traction was applied to direct it to the correct position (Fig. 5a). Surgical extraction of the dilacerated central incisor was delayed until traction was completed to avoid injury to the root of the supernumerary tooth. The supernumerary tooth was then reshaped with composite restoration to simulate the right maxillary central incisor (Fig. 5b).

DISCUSSION

Every tooth in a man's mouth is more valuable than a diamond. However, unfortunately, in today's world, when we see an extra tooth in a mouth, the first line of treatment is extraction. Why not think out of the box? Why could it not be nature's choice to have an added tooth as an added advantage. Here stands the relevance of these case series of two cases in which the supernumeraries in the anterior region were retained to the advantage of the patient.

Two similar case reports of concomitant occurrence of both hypo-hyperdontia (simultaneous presence of missing teeth and supernumerary teeth in the same individual) were reported by Nagaveni *et al.* in 2014. One of the cases exhibited bilateral occurrence of mesiodens in the midline along with agenesis of both permanent central incisors and taurodontism in the permanent molars. The other case exhibited the presence of two supernumerary teeth in the mandibular anterior region along with an absence of permanent mandibular central incisors [5].

Sneha *et al.* in 2014 have reported the case of a 4-year-old boy with twin conical mesiodens; one erupted at the position of the upper right central incisor region and the other palatal to the primary upper left central incisor. The treatment plan executed

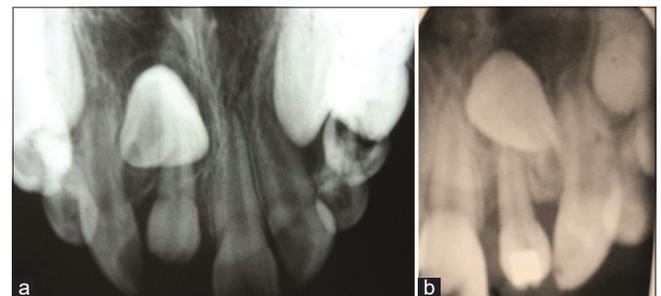


Figure 4: (a) Intraoral occlusal radiograph showing unerupted rootless maxillary left central incisor and supernumerary lying adjacent to it; (b) radiograph showing the supernumerary being brought down by orthodontic traction



Figure 5: (a) Photograph showing the supernumerary brought down in position of unerupted maxillary left central incisor; (b) post-operative photograph after reshaping the supernumerary to mimic the adjacent central incisor

was reshaping of the right mesiodens into a primary right central incisor using strip crown technique and preserving it as a natural space maintainer and extraction of the other mesiodens present palatal to the left central incisor [6].

Tewari *et al.* in 2017 have presented two case reports on this rare clinical entity. The first one revealed two conical supernumeraries in relation to permanent maxillary central and left lateral incisor along with the absence of all the permanent maxillary and mandibular third molars and permanent mandibular left second premolar. The 2nd case revealed a conical supernumerary tooth in relation to permanent maxillary central incisors with complete development of root [7].

Difficulties and complications associated with supernumeraries make it important to recognize and manage these in primary dentition as early as it is seen to prevent malocclusions and malalignments in permanent dentition. Supernumerary teeth in deciduous dentition are rare, mostly go unnoticed and can affect the eruption and alignment of permanent teeth. An important step in the management of supernumerary tooth is its identification and localization. Teeth can be localized using the vertical or horizontal parallax technique.

A periapical radiograph taken using the paralleling technique gives the most detailed assessment compared to other radiographic views. Occlusal radiographs, orthopantomograph, and cone-beam computed tomography can also be advised to localize the supernumeraries [8]. There are two schools of thought on the extraction of supernumerary, the delayed approach, and the immediate approach [3]. The immediate approach calls for the removal of supernumerary soon after the initial diagnosis, while delayed approach recommends intervention after the apical maturation of central and lateral incisors, at around 8–10 years of age of the child [9]. If the supernumerary teeth are causing no potential complications and lie beyond the dental apices and not likely to interfere with orthodontic tooth movement, they can be monitored with the yearly radiographic review with the patient and parent being warned of complications like cystic change, migration with damage to nearby tooth roots.

Immediate removal of mesiodens is usually indicated (surgically) when there is an inhibition in the eruption of the permanent successor, displacement of the adjacent tooth, interference with orthodontic appliances, presence of a pathologic condition, or spontaneous eruption of the supernumerary tooth [2,3]. Recently, Omer *et al.* conducted a study to identify the changes that may occur to the adjacent teeth in relation to their root development stages with regards to the time of removal of the supernumerary tooth, hence, to identify the optimum time for the surgical removal. According to them, surgical removal of unerupted supernumerary teeth when the permanent teeth are at stage C of Demirjian (4–5 years old) exhibited minimal complications. When a supernumerary tooth was removed at approximately 5–6 years of age (Stage D), arrested

root development was most likely to occur. If it was done at 6–7 years (Stage E), it causes a minimal risk of arresting the root development of the adjacent permanent teeth [10].

In the first case presented here, supernumeraries were maintained until the exfoliation of erupting permanent central incisors and extracted later, to preserve space for the erupting teeth and prevent space loss. In the second case, the supernumerary was brought down with orthodontic traction, reshaped and then the malformed central incisor was extracted to prevent damage to the supernumerary tooth. The root development was almost complete. Hence, according to Demirjian stages, its removal would cause minimal complications. The reshaping was done to mimic the adjacent central incisor as it exhibited a good root structure and was favorably positioned in the arch.

CONCLUSION

It is not always mandatory to extract a supernumerary tooth every time we see it. They can be utilized constructively to the advantage of the patient for purposes such as preventing malocclusion, retaining space, and enhancing esthetics of an individual.

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Funding: None; Conflicts of Interest: None Stated.

How to cite this article: Aswathi TM, Ephraim R, Ayilliath A, Chandrashekhar S. Supernumeraries: No more an added number, but an added advantage. *Indian J Case Reports*. 2020;6(2):81-83.

<https://doi.org/10.32677/IJCR.2020.v06.i02.013>