

Dens in Dente Supernumerary Teeth: A Rare Case Report

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Abstract

Case Report

Supernumerary teeth are regarded as an anomalous increase in the number of naturally occurring teeth. It can be found in any region of the dental arch. It is a developmental anomaly and has been argued to appear from multiple etiologies. These teeth may remain embedded in the alveolar bone or can erupt into the oral cavity. Dens in dente are one of the rare forms of supernumerary teeth. The present case report described a thirteen-year-old male who had bilateral supernumerary teeth in the anterior region of the maxilla which had a malformed morphology type dens in dente and they caused impaction of the two upper central incisors. A surgical treatment was performed to remove the supernumerary dens in dente teeth.

Keywords: Supernumerary teeth, Dens in dente, Uneruption, Cone beam computed tomography, surgical removal.

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INTRODUCTION

Supernumerary teeth are regarded as an anomalous increase in the number of naturally occurring teeth. They have been reported in both the primary and the permanent dentition. Its prevalence rates vary between 0.1% and 3.6% in the permanent dentition depending on the respective population. However, in deciduous teeth, the prevalence is lower amounting to 0.3 – 0.8% [1]. Males are affected approximately twice as often as females [2]. Their etiology is still not clearly understood. They may occur in any region of the dental arch with a particular predilection for the premaxilla. Supernumerary teeth may occur singly, multiply, unilaterally or bilaterally, and in one or both jaws [3]. Dens in dente are one of the rare forms of supernumerary teeth [4].

In this paper, we presented a case showing this type of anomaly in the maxillary anterior region and the surgical intervention to remove them.

CASE REPORT

A thirteen-year-old male consulted the Pediatric Dentistry Department, Dental Clinic of Monastir, Tunisia. His mother was anxious about the uneruption of his two maxillary anterior front teeth. The family medical histories were noncontributory and the patient had no record of orofacial trauma.

Intraoral examination revealed mixed dentition comprising only the central deciduous upper right incisor. The second permanent molars had already been erupted.

Panoramic examination (Figure 1) showed the presence of the two central incisors germs with incomplete apices. We also noted the presence of two structures with dental opacity in the eruption path of the incisors.

A cone beam computed tomography images were requested to accurately diagnose and locate the morphology of the supernumerary teeth and the radicular formation of the permanent maxillary central incisors (Figure 2).



Fig-1: Panoramic radiograph showing the impacted permanent upper central incisors and the presence of two supernumerary teeth

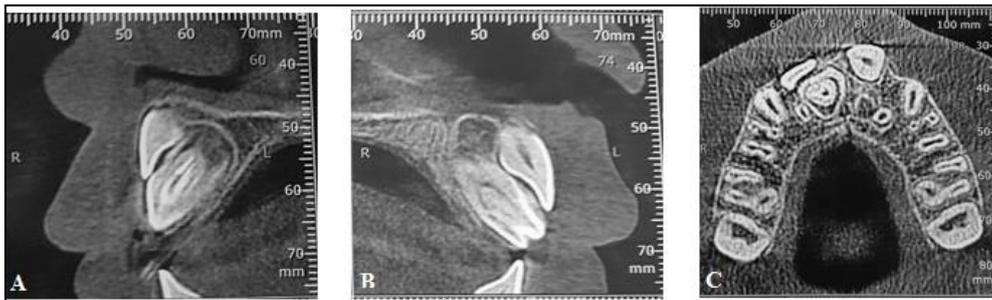


Fig-2: Cone beam computed tomography

A- Sagittal section of the right odontoma, B- Sagittal section of the left odontoma, C- Axial section of the two odontoma

Both supernumerary teeth were in a palatal position. They were larger than the size of the incisor crowns. Their shape was also atypical. They looked like dens in dente.

The treatment was surgical. The patient was administered local anesthesia. Intra-sulcular and supra crestal incisions were performed from the right premolar to the left one. Using a mucoperiosteal elevator, full thickness labial and palatal flaps were raised. The supernumerary teeth were luxated and

removed. They have an atypical shape and size. They looked like dens in dente. Then, hemostasis was achieved and the flaps were replaced back and sutured. (Figure 3)

Post-chirurgical instructions were explained to the patient along a prescription of antibiotic and analgesic treatment. The recall visits were scheduled for the following week to remove suture and evaluate the healing process.



Fig-3: Surgical steps A- Incision from premolar to premolar, B- Palatal discharge, C- After extraction of supernumerary teeth, D- The two supernumerary teeth (Dens in dente), E- After sutures

After nine months of follow up, we noticed a good healing and a spontaneous eruption of tooth number 21. Tooth number 11 remained under the bone. (Figures 4, 5) An orthodontic treatment will be programmed with a possible traction of tooth number 11.



Fig-4: Clinical follow up (after 9 months)



Fig-5: Radiographic follow up (after 9 months)

DISCUSSION

Supernumerary teeth are considered to be one of the most significant dental anomalies affecting the primary and early mixed dentition. They may be single or multiple, unilateral or bilateral, malformed morphologically or normal in size and shape, and erupted or impacted [4].

In the present case, there were bilateral supernumerary teeth in the anterior region of the maxilla which had a malformed morphology type dens in dente and they caused impaction of the two central upper incisors. Dens invaginatus, also known as dens in dente, is a rare anomaly affecting human dentition. The condition results in invagination of an amelodental structure within the pulp [5].

Various causes of this condition have been proposed which include focal growth retardation, infection, rapid proliferation of a part of the inner enamel epithelium into the dental papilla, increased localized external pressure, fusion of two tooth germs, trauma, distortion and protrusion of the enamel organ during tooth development and absence of signaling

molecules for morphogenesis. Therefore, genetic factors are involved [6-8].

Anterior maxillary supernumeraries in young patients are of great concern to both dentist and parents because of many complications that can be associated with supernumeraries, including impaction, delayed eruption, or ectopic eruption of adjacent teeth, crowding, formation of primordial or follicular cysts [9]. Early diagnosis of this anomaly is crucial. Clinically, the presence of supernumeraries should be suspected if there is a significant delay in the eruption of the maxillary permanent central incisors. Supernumerary teeth should be extracted immediately when any of the above-cited complications is present. But surgical removal of these teeth in the primary dentition is not usually recommended because of the risk of displacing the permanent tooth during the operation [10].

For preoperative examination, panoramic radiography has been used. However, such a technique is insufficient for determining the exact location of supernumerary and impacted teeth because of superimposed images [11]. In this case, the CBCT provided valuable information that helped us to determine the morphology and the exact 3D position of the supernumerary teeth and the permanent maxillary impacted central incisors.

The optimal time for surgical removal of unerupted maxillary anterior supernumerary is controversial. Some authors advocate immediate removal of the supernumerary teeth as soon as they are diagnosed, while others favor postponement of surgical intervention until the age of eight to ten years, when the root development of the central and lateral is nearly completed. Four factors were found to have an effect on the time taken for the unerupted tooth to emerge: The type of the supernumerary tooth, the degree of displacement and inclination of the unerupted tooth, the space available for eruption and time of diagnosis and surgical intervention. The patient's chronological age, the degree of root maturity, inclination and curvature are proved to have little influence on the eruption rate. In cases where spontaneous eruption fails to occur, surgical exposure of the unerupted permanent incisor is indicated by the following: lack of eruptive movement after the removal of the supernumerary and after six-month observation period and existence of sufficient arch-space for eruption. A less conservative approach advocated by some authors entails removal of the supernumerary and exposure of the unerupted tooth at the same time [12].

The majority of delayed permanent incisors erupt spontaneously if sufficient space is created at the time of removal of the supernumerary tooth [13]. However, if there is not space for delayed tooth, we have to re-establish it by orthodontic treatment. A

spontaneous eruption of the impacted permanent maxillary central incisor following supernumerary removal is suggested to be in the range of 54–75% and within 16–18 months of the removal of the supernumerary tooth [14, 15].

A retrospective analysis of factors influencing the eruption of delayed permanent incisors after supernumerary tooth removal revealed that spontaneous eruption occurred in 89.4% of delayed permanent teeth. The average time needed for eruption is 9.2 months (median = 7 months) [16].

CONCLUSION

Dens in dente are one of the rare forms of supernumerary teeth. Their frequency and their deleterious effects on normal occlusal development justify the radiographic examination of pre-school children. Early diagnosis allows early intervention, more favorable prognosis and minimal complications.

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