Clinical complications associated with supernumerary teeth: report of two cases

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The presence of supernumerary teeth can interfere in normal occlusal development. The pediatric dentist should diagnose them as soon as possible, as most of the time they are asymptomatic. The objective of this paper is to show the presence of that dental anomaly in two pediatric patients, as well as the associated clinical complications with treatment.
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INTRODUCTION

There are a series of factors that can influence the normal development of the occlusion, interfering in correct alignment of the teeth and harmonic relationship with the adjacent and antagonistic elements. Beyond these, are dental anomalies of number, such as supernumerary teeth.[18]

It is believed that these teeth are the result of the continued permanent or deciduous dental sheet proliferation, which results in the appearance of a supernumerary tooth.[21,22] Even so, other theories have been proposed for this occurrence, such as: differentiation; concrescence; dicotomy and atavism.[8,9] The etiology of these elements was not completely defined.[8] It is believed that other factors can be involved, such as; hereditary factors, diseases as palatine clefts, traumas[15] and Gardner's syndrome.[1] According to Dean *et al*.[7] the differentiation phase of the dental germ will determine the appearance of a supernumerary tooth, an odontome or a cyst.

The prevalence of supernumerary teeth is between 0.15 and 1% in permanent dentition, with predilection of 2:1 for male sex.[8,19,21,22] In deciduous dentition, this varies from 0.3%[6] to 0.66%.[18] According to discoveries of Primo *et al*.[18] the frequency of these erupted teeth was 47.14%, while at non erupted was 52.86%.

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Although these teeth can be found in any location, seemingly they have a predilection for the distal of third molars and between the maxillary central incisors, which is called mesiodens. They are more frequently observed in permanent dentition than in deciduous dentition, with predilection for the upper arch than lower arch in a proportion of 10:1.[19,21] The supernumerary can present as a normal looking tooth or conical appearance. It is located in a normal or inverted position in dental arch, generally in palatine area of the maxillary central incisors.[5,17,22]

According to some researchers[9,10] the supernumerary teeth can be diagnosed through radiographic findings or by clinical signs that suggest an association with pathological conditions. However, many times they are asymptomatic.

The most frequent complications generated by the presence of supernumerary teeth are: prolonged retention of deciduous teeth;[11,12] delayed eruption of permanent teeth[4,14] absence of permanent teeth eruption;[5] ectopic eruption;[23] malocclusion;[11] spaces between incisors;[11,16] cyst development;[13] roots reabsorption of adjacent teeth[14] and esthetic factors.

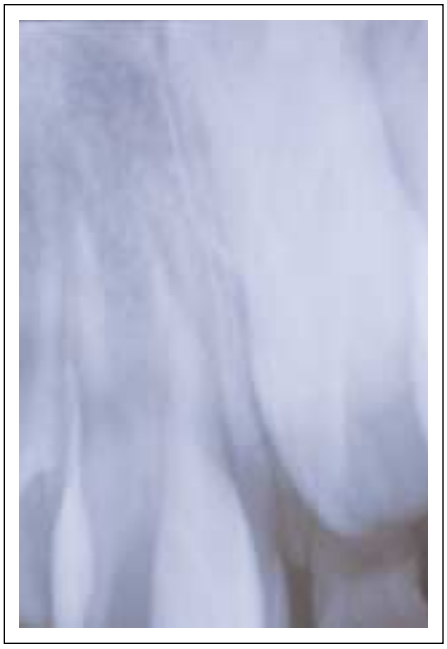
The objective of this paper is to show the presence of supernumerary teeth in two pediatric patients, as well as the associated clinical complications and the different methods of treatment.

CASE 1

An 8-year-old Hispanic girl, came to the Pedodontic Clinic of a Dental School with main complaint of an "extra tooth that was came into her mouth". During the consultation any alteration was verified in general and dental health of the child, although she, in spite of her age, had never gone to the dentist.

Initially, the patient and her mother were educated about diet habits and oral hygiene. During the clinical exam, the presence of a conical mesiodens could be observed in anterior part of the maxilla,

Case 1. Figure 1. Supernumerary occlusal view



Case 1. Figure 2. Supernumerary radiograph

Case 1. Figure 3. Extraction of the supernumerary and deciduous teeth

Case 1. Figure 4. Occlusal view after a year

located in palatal area of the permanent right maxillary central incisor. The patient presented an unfavorable positioning of the supernumerary, over retention and a premature contact of the deciduous left maxillary central incisor, which was affecting her esthetics (Figure 1).

Radiographically, the supernumerary presented completed root formation and maintained close contact with the permanent right maxillary central incisor (Figure 2).

For treatment, the mesiodens and the deciduous left maxillary central incisor were extracted, since the maxillary left permanent central incisor had approximately 2/3 of the root formed (Figure 3).

After a year the permanent left maxillary central incisor could be seen in the oral cavity (Figure 4).

CASE 2

A 4-year-old Brazilian boy attended the Pedodontic Clinic of a Dental School guided by other professionals, who had diagnosed the presence of a supernumerary tooth by radiography .

During the interview, the mother stated that the child was born as the result of a complicated gestation, due to an abortion menace. The medical and dental history of the patient was within normal limits.

The parents and the child received instructions about diet habits and oral hygiene. During the clinical exam, it

Case 2. Figure 1. Presence of supernumerary tooth

Case 2. Figure 2. Panoramic radiograph

Case 2. Figure 3. Celluloid crown positioned for restoration

Case 2. Figure 4. Final composite restoration

was observed that the patient presented with an open bite and a conical supernumerary tooth in the deciduous right maxillary central incisor area (Figure 1). Through radiography supplied by the parents, pathological resorption of the deciduous right maxillary central incisor was verified, probably caused by the mesiodens, which presented completed root formation (Figure 2).

The proposed treatment was to restore the mesiodens with celluloid crown and composite (Figure 3).

After one year, the clinical and radiographic exam showed that the permanent right maxillary central incisor germ did not suffer change in the trajectory of eruption and the restoration remained esthetically satisfactory (Figure 4). Periodic monitoring will be accomplished every six months until supernumerary esfoliation and permanent right maxillary central incisor erupts.

DISCUSSION

The correct dental eruption depends on the interaction and influence among genetic and environmental factors. Alterations in this dynamics can determine the appearence of supernumerary teeth or the absence of permanent teeth.[8]

The described cases presented a supernumerary tooth, which is more commonly described in the literature.[8,17] These supernumerary teeth observed at clinical exam, are with conical form and in first report

was located in palatal area of permanent maxillary central incisor, which corroborated findings of others.[5,7,9,17]

In case 1, due to the intimate relationship with the permanent maxillary central incisor, initially it was thought to be a claw cusp,[20] but this possibility was excluded after taking a periapical radiograph. The panoramic radiography will not always show the mesiodens.[9] However, in case 2 this radiograph was important in the diagnosis of the supernumerary element by the first professional, which guided the child for the pediatric dentist.

The predilection for the male sex was found by several investigators.[8,9,19,21,22] In the second report, in the first case the patient was a girl. However, neither one presented history of dental trauma, syndromes or heredity regarding to the supernumerary teeth presence,[1] which is not in agreement with the etiologies associated with mesiodens.

In case 2, the supernumerary tooth was found in deciduous dentition, which is not very frequent as stated in the literature. The presence of the supernumerary tooth is observed with more frequency in permanent dentition[8,9,19,21,22] However, in case 1 it cannot be affirmed if the supernumerary tooth was present at the deciduous dentition or if it was formed later, since diagnosis was done later.

The early diagnosis and subsequent treatment of any dental anomaly is very important in prevention of several occlusal alterations.[18] In the first described case, the supernumerary tooth could be diagnosed because of eruption in the oral cavity, since the child, in spite of her age, had never gone to the dentist. The patient of case 2 was guided by other professionals and the parents brought the panoramic radiograph.

Beyond the clinical complications associated with this pathology in the literature, the patient of the first report presented prolonged retention of the deciduous left maxillary central incisor[11,12] delayed eruption of the permanent left maxillary central incisor[4,14] and malocclusion of the permanent right maxillary central incisor.[11] The patient of the second report presented early exfoliation of the deciduous right maxillary central incisor[14] due to mesiodens eruption.

Some[9,11] have found that the clinical management of supernumerary teeth will depend fundamentally of the age of the patient, the stage of dental development and the eventual influence of the presence on the permanent teeth. The extraction of them, associated or not to other therapies, is usually decided starting from different clinical and radiographic discoveries such as: position, inclination, follicle width, resorption presence or other interferences with the adjacent teeth.[2,8,22] In the first report, the extraction of mesiodens and deciduous left maxillary central incisor was opted, since the normal dental development was being strongly harmed by the supernumerary tooth presence. However, in the second report, the mesiodens was maintained because the patient was young and the element was in ideal position, avoiding the use of fixed or removable space mantainer.

The excessive root reabsorption is the more undesirable orthodontic consequence[3], which happens in a small percentage of the patients, independently of the type of orthodontical treatment. The maxillary incisors are affected the most. Thus, in the first case, it was preferred to wait for the natural eruption of the permanent left maxillary central incisor. Since these teeth came in normal position, six months after the supernumerary and deciduous left maxillary central incisor were extracted. There was no need for orthodontic appliances. In the second report, the mesiodens will be monitored until its exfoliation and posterior eruption of the permanent maxillary central incisor.

CONCLUSION

In presence of supernumerary teeth, the dentist should evaluate the moment that they begin to interfere in normal developmental pattern of the occlusion. Then intervention should occur as soon as possible to avoid malocclusion. Early diagnosis is done through periodic radiographic exams in pediatric patients.

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