CASE REPORT

Nonsyndromic Multiple Supernumerary Teeth Localized by Cone-Beam Computed Tomography: A Case Report

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ABSTRACT

Hyperdontia or supernumerary teeth are referred to a condition of having more than the usual number of 20 deciduous and 32 permanent teeth, regardless of their place and form. Supernumerary teeth may occur singly, multiply, unilaterally, or bilaterally in one or both jaws. Multiple supernumeraries occur in less than 1% of the cases and can create a variety of clinical problems. Herein, we presented a case of one 26-year-old female with hyperdontia referred to the Department of Oral Diagnosis and Radiology at Dental Faculty of Isfahan Medical University, Iran, for initial dental examination, involving a panoramic radiograph.

The panoramic radiograph revealed the presence of seven impacted multiple supernumeraries in all four quadrants. The cone-beam computed tomography (CT) was performed to precisely localize the respective teeth prior to the surgical extraction. The impacted supernumerary teeth in each mandibular and maxillary quadrant were surgically removed under local anesthesia. The prophylactic surgical removal of the supernumerary teeth along with the resolution of their respective complications is generally an optional treatment. Performing the cone-beam CT is an essential imaging to precisely localize a tooth before surgery.

Key Words: Cone-Beam Computed Tomography, Supernumerary Teeth, Tooth Extraction

INTRODUCTION

Hyperdontia or supernumerary teeth are referred to the condition of having more than the usual number of 20 deciduous and 32 permanent teeth, regardless of their place and form [1, 2]. Supernumerary teeth may present singly, multiply, unilaterally, or bilaterally in one or both jaws. Hyperdontia may occur in any area of the dental arch [3].

The categorization of the supernumerary teeth can be based on their locality or morphology. The locality variations of the supernumerary teeth include mesioden (situated in incisor region), paramolar (located beside a molar), distomolar (placed distal to the last molar), and parapremolar (located beside a premolar) [4].

According to the literature, the multiple supernumerary teeth are associated with variable syndromes [5, 6]. Likewise, the single supernumerary is shown to be associated with twenty syndromes and developmental conditions. The multiple supernumerary teeth can be presented as a part of such systemic conditions as cleidocranial dysplasia, Gardner’s syndrome, as well as cleft lip and palate [3, 6].

The presence of the multiple supernumeraries in the absence of any associated systemic condition or syndrome is a rare phenomenon [5, 6], which has only been described as case reports [5, 7]. The prevalence of supernumerary teeth on a population basis ranges within 0.1-3.6% [8]. Single, double, and multiple supernumeraries occur in 76-86%, 12-23%, and less than 1% of the patients, respectively [3, 4, 9, 10]. This condition is more prevalent in the males with a sex ratio of 2.2:1 [3]. In this report we presented a case with multiple supernumerary teeth and the available treatment modalities.

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A 26-year-old yellow female patient was referred to our Department of Oral Diagnosis and Radiology at Dental Faculty of Isfahan Medical University, Iran, for an initial dental examination, which involved taking a panoramic radiograph. The clinical examination revealed that all the permanent teeth, including the third molars, had eruptions. The patient showed poor oral hygiene and multiple decayed teeth in both mandible and maxilla. A deep carious lesion with pulpal exposure was present in relation to 45.

The panoramic radiograph showed the presence of seven supernumerary teeth in all four quadrants (Figure 1). The first quadrant contained one supernumerary tooth. The fourth molar (distomolar) was situated in the right maxillary tuberosity at about the apical tip of the 18. One unerupted supernumerary premolar was detected in the second quadrant, palatal to the 23 and 24. This tooth appeared to be conical in shape and smaller than a normal premolar.

In the left mandibular quadrant, there were two unerupted supernumerary teeth, one of which was in the premolar region and the other one was the mandibular fourth molar. The supernumerary in the premolar region was at the halfway up the roots of the 34 and 35, and its morphology and size appeared like those of the normal premolars. The mandibular fourth molar exhibited horizontal position and was situated in the left mandibular ramus.

Additionally, two supernumerary teeth were found in the right mandibular premolar region, appearing to have the same size and morphology as a normal premolar. These teeth were unerupted and lingually positioned. One was situated between the 44 and 45 approximately halfway up the root of the 34, and the other was situated at the level of the apical third of the roots of the 46. Finally, the patient had a distomolar in the fourth quadrant that was conical in shape and had a vertical position at the distal of the right mandibular third molar.

Regarding the multiple supernumeraries, the patient was investigated for any features suggestive of cleidocranial dysplasia and Gardner’s syndrome. The patient was normal in her facial appearance and showed no signs of mental retardation. Furthermore, she did not exhibit any physical or skeletal abnormality; accordingly, most of the syndromic conditions were over ruled. The family’s medical history was noncontributory; however, the dental history indicated supernumerary teeth in her brother and cousin (Figure 2).

Some of the existing supernumerary teeth caused mild pain and could be palpable from the vestibular mucosa; therefore, it was decided to extract them. In addition, all the wisdom teeth were extracted. To precisely localize these teeth before the extraction surgery, we carried out a cone-beam CT (Figure 3). The 45 was decided to be endodontically treated and restored with a...
DISCUSSION

Although the localized and independent hyperactivity of the dental lamina is the most important cause for the development of supernumerary teeth, the etiology of these types of teeth is not clear yet. However, several hypotheses have been proposed in this regard [11]. The patients who have relatives with supernumerary teeth are more likely to present such teeth. Nonetheless, the heredity pattern of this problem does not follow a simple Mendelian pattern [10]. Accordingly, our case images also seem to have a familial pattern.

The supernumerary teeth may or may not erupt normally. The patients with such teeth may present such clinical problems as crowding, separation, impaction, delayed eruption of permanent teeth, malocclusion, etc. [12]. In our case, all 32 permanent teeth were present without any signs of crowding.

The most probable location for the supernumerary teeth eruption is the mandibular premolar and molar regions, respectively [3, 9, 13]. In our case, three impacted supernumerary teeth were localized in the mandibular premolar region, which was in accordance with the previous reports. Upon the diagnosis of the supernumerary teeth (either single or multiple), the decision regarding the appropriate management should be made carefully.

There is still controversy over the optimal treatment of delayed eruption due to supernumerary involvement. The therapeutic options include the removal of the supernumerary teeth followed by an orthodontic treatment as well as leaving the teeth in place and follow-up without any intervention [12, 15].

Some of the previous studies suggested that the asymptomatic unerupted supernumerary teeth that do not appear to affect the dentition should be left in place with periodic observations [12, 14]. On the other hand, some other studies suggest that the possible pathological lesions associated with supernumerary teeth should be considered in our decision. To prevent possible difficulties, such as altering occlusion, or giving rise to other disorders, prophylactic removal of all the other supernumerary teeth is suggested [2, 15].

In our case, the orthodontic treatment was not required since the patient had a normal number of permanent teeth, and occlusion was appropriate. Therefore, the treatment was limited to the surgical extraction of the supernumerary teeth. However, the advantages or disadvantages of tooth removal must be individually evaluated in all patients [15]. Before making any decisions for surgical extraction, it is necessary to precisely evaluate the supernumerary teeth by cone-beam CT.

The surgical intervention in our patient did
not give rise to any complications. As it has been described in the literature, the current accepted approach is not extraction of the asymptomatic supernumerary teeth in order to avoid the possible postoperative difficulties [12, 14].

The occurrence of normal morphological multiple supernumerary teeth in the absence of an associated systemic condition or syndrome is an uncommon phenomenon (i.e., less than 1%). Subsequently, we emphasize that obtaining an appropriate medical history is critical when we come across a patient with multiple supernumeraries. The consultant clinician should rule out all medical syndromes associated with supernumerary teeth before labeling a patient as a case of non-syndromic multiple supernumerary teeth.

CONCLUSION

The prophylactic surgical removal of the supernumerary teeth along with the resolution of their respective complications is generally an optional treatment. To precisely localize a tooth before surgery, a cone-beam CT should be performed. If the risk of surgery outweighs the benefits of removal of the tooth may be left in situ and a regular clinical and radiographic monitoring should be suggested. In addition, the patient follow-up even after the removal of the supernumerary teeth is mandatory.

CONFLICTS OF INTEREST

The authors declared no conflicts of interest.

REFERENCES