Bilateral Maxillary Paramolars: A Case Report

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ABSTRACT

Supernumerary teeth are a common clinical and radiographic finding and may produce occlusal and dental problems. Supernumerary teeth can present in various forms and in any region of the mandible or maxilla, but have a predisposition for the anterior maxilla. The purpose of this paper was to present a case of supernumerary teeth located in the maxillary molar region bilaterally. (J Dent Child 2012;79(2):84-7)

Received July 6, 2010; Last Revision May 3, 2011; Revision Accepted May 4, 2011.

Keywords: supernumerary tooth, paramolars, hyperdontia, distomolar

Supernumerary teeth, indicating hyperdontia, are teeth that exceed the normal dental formula, independent of their morphology and location. Teeth additional to the normal complement have been found in the earliest remains of humans and have been recorded in the dental literature since the days of Paul of Aegina in the seventh century A.D.[1] Supernumerary teeth in the molar region have been classified as paramolars or distomolars.[2]

A paramolar is a supernumerary molar, usually rudimentary, situated buccally or lingually/palatally to one of the molars or in the interproximal space buccal to the second and third molar. A distomolar is a supernumerary tooth located distal to a third molar and is usually rudimentary. It rarely delays the eruption of associated teeth.[3]

The prevalence of supernumerary teeth in the permanent dentition ranges from 0.5% to 3.8% vs 0.3% to 0.6% in the primary dentition. Supernumerary teeth appear with a higher frequency in males than in females, at a 2:1 ratio.[4] Supernumerary teeth can occur as singles or multiples, unilaterally or bilaterally, and in the maxilla, the mandible, or both. Cases involving 1 or 2 supernumerary teeth most commonly affect the anterior maxilla, followed by the mandibular premolar region. Supernumerary teeth are estimated to occur in the maxilla 8.2 to 10 times more frequently than the mandible, and most commonly affect the premaxilla.[3]

The purpose of this paper was to present a case of supernumerary teeth located in the maxillary third molar region bilaterally.

CASE REPORT

A 17-year-old male patient reported to the Department of Orthodontics, Institute of Dental Sciences, Bhubaneswar, Orissa, India, with the chief complaint of anteriorly placed permanent maxillary incisors. The patient was referred to the Department of Pedodontics and Preventive Dentistry for restorations and periodontal evaluation. The patient's medical and dental history were non-contributory. An intraoral examination revealed the presence of mild to moderate gingivitis, carious permanent maxillary right and left first molars, and supernumerary teeth mesial and buccal to the maxillary third molars bilaterally. The patient was not aware of their existence or of the occurrence of supernumerary teeth in other family members. The supernumerary tooth was of tuberculate shape. Oral prophylaxis was performed, and the carious molars were restored. At the next appointment, the supernumerary teeth were extracted under local anesthesia after obtaining parental consent, and the patient was referred back to the Department of Orthodontics for further orthodontic treatment.

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DISCUSSION

Supernumerary teeth are considered to be one of the most common dental anomalies affecting the primary and early mixed dentitions.[5] An unerupted supernumerary tooth may be found by chance during radiographic examination, with no effect on adjacent teeth. It is essential not only to enumerate but also to identify the supernumerary teeth present clinically and radiographically before a definitive diagnosis and treatment plan can be formulated.

CLASSIFICATION

Supernumerary teeth may be classified in one of the following ways[1,3,6]:

1. chronologically—as predeciduous, similar to permanent teeth, post permanent or complementary;
2. morphologically—as supplemental, where the supernumerary resembles the tooth of the normal series, or rudimentary, where the supernumerary may be described as conical, tuberculate, molariform, or odontomes; and
3. topographically—as mesiodens, supernumerary premolars, or supernumerary molars.

Supernumerary teeth in the molar region are either paramolars or distomolars (fourth molars). Paramolars are rudimentary teeth which may develop buccally or lingually to the molar series. Distomolars develop distally to the third molar and have been described in both the maxilla and mandible. Again, they are rudimentary teeth, often conical in shape.

ETIOLOGY

The etiology of supernumerary teeth is unknown, although a number of theories have been proposed: atavism, tooth germ dichotomy, hyperactivity of the dental lamina, and genetic factors comprising a dominant autosomal trait characterized by low penetrance.[1,8]

Atavism has been proposed as a cause; this hypothesis proposes a reversion to an ancestral human dentition that contained a large number of teeth.[9] With the predominantly solitary occurrence and ectopic development of the supernumerary teeth, however, this theory has been rejected.[10]

An alternate theory is that a tooth bud may undergo dichotomy. If the tooth bud splits into 2 equal parts, the result is a supplemental tooth resembling the normal series; if unequal, however, the additional tooth might be malformed and conical.[11]

A more favored hypothesis is that of excessive growth of the dental lamina, or hyperactivity of the dental lamina, as proposed by Black,[12] which has been cited as being responsible for the formation of additional tooth buds. This localized and independent hyperactivity of the dental lamina is the most accepted cause for the development of supernumerary teeth. According to this theory, the lingual extension of an additional tooth bud leads to a eumorphic tooth, while the rudimentary form arises from proliferation of epithelial remnants of the dental lamina induced by the pressure of the complete dentition.

The concurring opinion in the literature is that inheritance is a major contributor to the development of supernumerary teeth.[13] Several case reports have demonstrated some proneness in certain families.[14]

Figure 1. Clinical intraoral picture showing paramolars mesially to maxillary third molars bilaterally.

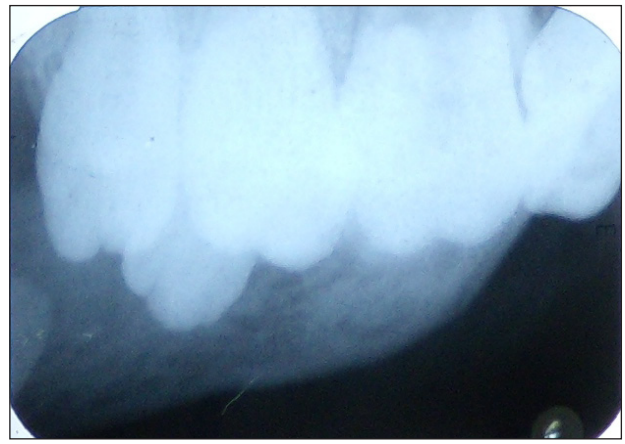

Figure 2. Intraoral radiograph showing paramolar (right side).

Figure 3. Intraoral radiograph showing paramolar (left side).

Figure 4. Extracted right and left paramolars.

Supernumerary teeth run in families over several generations, sometimes skipping one or more generations.

A combination of genetic and environmental factors was proposed by Brook[15] to explain the occurrence of supernumerary teeth. Furthermore, with the available data indicating a strong hereditary component that does not follow a simple Mendelian pattern, some authors support a multifactorial mode of inheritance.[1]

Supernumerary teeth may occur in isolation or as part of a syndrome, such as cleidocranial dysplasia, Gardner's syndrome, or cleft lip and palate.[1]

According to Fleming et al., many of the molecular signaling pathways known to be involved in normal development of the tooth bud can also give rise to additional teeth if inappropriately regulated. These include components of the Hedgehog, FGF, Wnt, TNF, and BMP families, which provide a useful resource of candidate genes that may potentially play a role in human supernumerary tooth formation.[16]

CLINICAL FEATURES

Supernumerary teeth may erupt normally, remain impacted, appear inverted, or assume an abnormal path of eruption.[8] Only 13% to 34% of all permanent supernumerary teeth are erupted, however, vs 73% of primary supernumerary teeth.[6]

A supernumerary tooth may be discovered by chance as a radiographic finding with no associated complications. If complications arise, however, they may include the following: (1) prevention or delay of eruption of associated permanent teeth; (2) displacement or rotation of permanent teeth; (3) crowding;[6] (4) incomplete space closure during orthodontic treatment;[18] (5) dilacerations or delayed or abnormal root development of associated permanent teeth;[15] (6) root resorption of adjacent teeth;[19] (7) complications with the supernumerary tooth itself; (8) late-forming supernumerary teeth.[17]

TREATMENT

The literature describes different management options for patients with multiple hyperdontia not associated with complex syndromes. Treatment is partly dependent upon the position and clinical manifestations of the supernumerary tooth. Thus, an early diagnosis is very important in order to decide among extraction, extraction followed by orthodontic treatment, or simply monitoring the supernumerary teeth, with the intent of minimizing the risk of complications secondary to the presence of these teeth. Surgical management, in turn, ranges from removal of the supernumerary teeth to removal of the latter followed by orthodontic treatment aiming to ensure correct occlusion. In the more complex cases, the possible existence of multiple impactions of supernumerary teeth gives rise to distortion of the dental arch, with numerous malpositioned teeth. These situations require close cooperation among professionals to define combined surgical orthodontic management.[8,20]

Supernumerary teeth are relatively common and can cause a variety of complications. The clinician should recognize signs suggesting the presence of supernumerary teeth, particularly aberrations in the eruptive pattern, and perform the relevant investigations. On diagnosis, each case should be managed appropriately to minimize complications to the developing dentition.

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