Hyperdontia: 3 Cases Reported

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ABSTRACT

A supernumerary tooth may closely resemble the teeth of the group to which it belongs, i.e molars, premolars, or anterior teeth, or it may bear little resemblance in size or shape to the teeth with which it is associated. It has been suggested that supernumerary teeth develop from a third tooth bud which arises from the dental lamina near the permanent tooth bud, or possibly from the splitting of the permanent tooth bud itself. In some cases, there appears to be a hereditary tendency for the development of supernumerary teeth. A supernumerary tooth is an additional entity to the normal series and is seen in all quadrants of the jaw.

The incidence of these teeth is not uncommon. Different variants of supernumerary teeth are discussed and reviewed in detail in the following article.

Key Words: Supernumerary teeth, Mesiodens, Upper distomolar

INTRODUCTION

A supernumerary tooth (or hyperodontia) is defined as an increase in the number of teeth in a given individual, i.e., more than 20 deciduous or temporary teeth and over 32 teeth in the case of the permanent dentition [1], [2].

Supernumerary teeth are a rare alteration in the development of the maxillas, which can appear in any part of the maxillas and can affect any tooth. They can be associated with a syndrome or they can be found in nonsyndromic patients [3], [4].

The aetiology of hyperdontia is still uncertain. A hereditary component has been suggested [5-7] and current genetic studies have revealed the possible intervention of ectodine as an inhibitor protein against the third dentition [8-10]. The incidence of supernumerary teeth varies between 0.45-3%, depending on the literature source and is more common in females than in males (proportion 2:1) [11], [12].

While such teeth may be found in any region of the dental arch, they are more commonly located on the maxillary midline, where they are referred to as mesiodens, representing 80% of all the supernumerary teeth [13], [14].

This location is followed in the decreasing order of frequency by four molars or the upper distomolars, the upper paramolars and – proportionately far behind – by the lower premolars, the upper lateral incisors, the lower fourth molars and the lower central incisors. The upper premolars are exceptional, as are the upper and lower canines and the lower lateral incisors [15].

Regarding the aetiology of the supernumerary teeth, most authors point to phylogenetic factors, specifically hyperactivity within the dental lamina, which causes the appearance of additionaldental buds 16,17. Clinically, supernumerary teeth are able to cause different local disorders, including retention of the primary tooth, delayed eruption of the permanent tooth, ectopic eruptions, tooth displacements, follicular cysts and other alterations which require surgical or orthodontic intervention [18], [19].

The extraction of these teeth is a general rule for avoiding complications [15]. Nevertheless, some authors such as Koch et al [20] do not recommend the extractions of impacted teeth in children under 10 years of age, since in this particular age group, such procedures often require general anaesthesia. Kruger [21] considers that the extraction of supernumerary teeth should be postponed until the apexes of the adjacent teeth have sealed. According to Donado [22], treatment should be provided as soon as possible in order to avoid the displacement and delayed eruption of the permanent teeth. Supernumerary teeth were found to be more common in males (71.4% versus 28.6% in females).

CASE HISTORY 1

A 17 year old apparently healthy male patient visited our department with a history of deposits on his teeth and wanted to get them cleaned. On intraoral examination, the entire soft tissues appeared to be normal. The hard tissue examination revealed the presence of an extra tooth (suplementary tooth) distal to both sides of the lateral incisor, but on the buccal side [Table/Fig-1] in the upper jaw.

[Table/Fig-1]: Intraoral Photograph showing palattaly erupting 12,22

The lateral incisors on both the sides were found to be palatally erupting [Table/Fig-2].

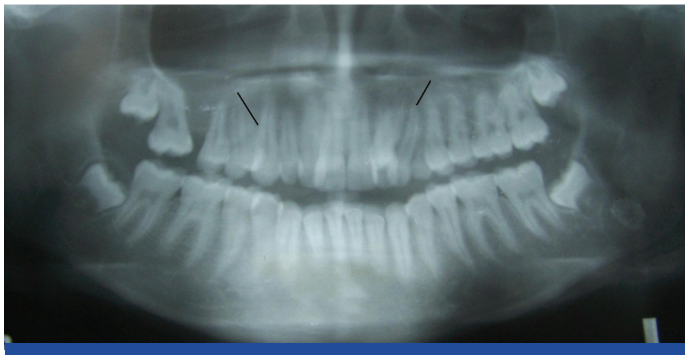
The upper right side quadrant showed that the first molar was missing. The upper left quadrant showed retained canine. When the tooth number is counted from canine to canine, there should be 6 teeth, but here, 8 teeth were there. Then, the patient was subjected to radiography to differentiate this extra tooth from the fusion or the germination. Orthopantomography [Table/Fig 3] showed that the extra supplementary teeth appeared single and that they were not related to the adjacent tooth, but resembled the adjacent canine; hence, they were called as supplementary teeth. Again, as both the teeth were asymptomatic, they were kept under observation. [Table/Fig-3]

CASE HISTORY 2

A 52 year old apparently healthy male patient visited our department with a history of decayed tooth. On intraoral examination, the entire soft tissues appeared to be normal. The hard tissue examination revealed the presence of an extra tooth (suplementary tooth) distal to both sides of the lateral incisor [Table/Fig-4], [Table/Fig-5] in the upper anterior quadrant. When the tooth number is counted from canine to canine, there should be 6 teeth, but here, 8 teeth were there. [Table/Fig-4], [Table/Fig-5]

Then, the patient was subjected to radiography to differentiate this from the fusion or the germination. Orthopantomography [Table/Fig-6] showed that the extra supplementary teeth appeared single and that they were not related to the adjacent tooth, but resembled the adjacent lateral incisor; hence, they were called supplementary teeth. Again, as both the teeth were asymptomatic, they were kept under observation. [Table/Fig-6]

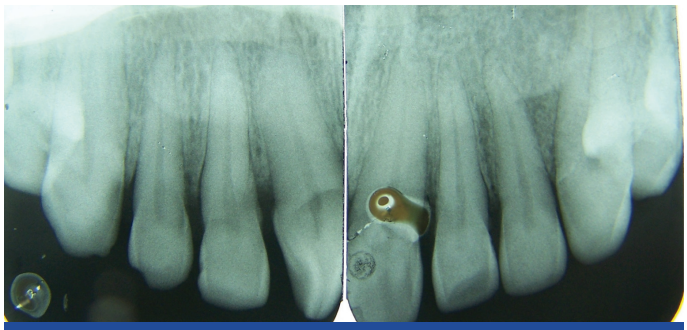
[Table/Fig-2]: Intraoral Photograph showing Suplemtal canines



[Table/Fig-3]: Orthopantomography showing suplemental teeth

[Table/Fig-4]: Frontal view showing suplemental teeth 12, 22

[Table/Fig-5]: Palatal view



[Table/Fig-6]: Intraoral periapical radiograph showing suplental teeth

CASE HISTORY 3

A 24 year old apparently healthy militant visited our department with a history of food lodgement in the upper right posterior quadrant. On intraoral examination, the entire soft tissues appeared to be normal. The hard tissue examination revealed the presence of an extra tooth on the buccal side of 18, which was called as a perimolar tooth (supernumerary tooth) [Table/Fig-7].

Deep probing between the supernumerary tooth and 18 revealed a catch and carious lesion, with a supernumerary tooth. As the tooth was placed on the buccal side, he underwent occlusal radiography [Table/Fig-8], but the findings were not very contributory. Then, the patient underwent the extraction of this symptomatic supernumerary tooth.

[Table/Fig-7]: Supernumarary tooth on buccal side of 17

[Table/Fig-8]: Supernumarary tooth on buccal side of 17

DISCUSSION

Several researchers have also proposed that multiple supernumerary teeth are the part of a post permanent dentition [23], [24].

The exact mode of inheritance has not been established; however, a familial tendency has been noted [12], [25]. It has been stated that the development of supernumerary teeth may cause various pathologies. Approximately 75% of the supernumerary teeth are impacted and asymptomatic, and most of these teeth are diagnosed coincidentally during radiographical examination 6. In a survey on 2,000 schoolchildren, Brook26 found that supernumerary teeth were present in 0.8% of the primary dentition and in 2.1% of the permanent dentition. The occurrence may be single or multiple, unilateral or bilateral, erupted or impacted, and in one or both the jaws. Supernumerary teeth are classified according to the morphology and location as conical, tuberculate, supplemental and odontome [26].

Conical teeth are small peg shaped teeth which are most commonly found in the permanent dentition. The tuberculate type possesses more than one cusp or tubercle. It is frequently described as barrel-shaped and may be invaginated. The supplemental supernumerary teeth refer to a duplication of the teeth in the normal series and are found at the end of the tooth series. The most common supplemental tooth is the permanent maxillary lateral incisor, but supplemental premolars and molars can also occur. Odontome has been listed as the fourth category of the supernumerary teeth by Howard. Twoseparate varieties of odontoma ie. complex and compound, have been described in this article. Supernumerary teeth are infrequent developmental alterations that may manifest in any zone of the dental arches and may involve any tooth; they may be associated to syndromes or can also be found in non-syndromic populations [27].

According to the consulted literature sources, the frequency of supernumerary teeth has been found to vary according to the population which is studied, ie. between 0.1-3.8% [28-30] and this has been found to reach up to 28% in patients with cleft palate and harelip [31].

According to Salcido-Garcia et al [27], the appearance of supernumerary teeth is more frequent in the first three decades of life than in the older age groups. However, in studies on adult populations, the frequencies have been found to be lower (between 0.4% and 1%), with an increased location in the maxilla, though they can also occur in the posterior sectors of the arch [32-35].

The principal location of the supernumerary teeth is the premaxillary zone (mesiodens) in children, and the distomolar in adults.

Most authors consider the most common mechanical accident to be the delayed eruption of the adjacent teeth [15], [36].

CONCLUSION

Early diagnosis is important in order to minimize the risk of complications resulting from supernumerary teeth. If they have caused delay or the non-eruption of the permanent teeth, displacement of the permanent teeth and root resorption of the adjacent teeth due to pressure and cystic formations, then extraction is recommended.

However, the extraction of asymptomatic supernumerary teeth that does not affect the dentition may not always be necessary, but these teeth should be followed through periodic examinations. Since there is a risk of tooth bud recurrence, extraction in these patients is still a remote possibility and follow-up on these patients is recommended. The 1st 2 patients in this study were kept under observation. Due to the symptoms that the third patient presented, supernumerary tooth extraction was done in him.

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DECLARATION ON COMPETING INTERESTS:
No competing Interests.

Date of Submission: **Dec 12, 2011**
Date of Peer Review: **Dec 22, 2011**
Date of Acceptance: **Feb 28, 2011**
Date of Publishing: **Jun 13, 2011**