



Non-syndromic hypohyperdontia of the permanent dentition with involvement of the mandibular anterior region: a rare occurrence

Hipo-hiperdontia não síndrômica da dentição permanente com envolvimento da região anterior mandibular: uma rara ocorrência

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Abstract

Objective: To present an uncommon case of numeric abnormalities in a non-syndromic patient.

Discussion: Dental numeric abnormalities in development of the permanent dentition are quite common; however, combined occurrence of hypodontia and hyperdontia is a rare phenomenon, especially in a non-syndromic situation. This paper describes a 28-year-old non-syndromic man with missing mandibular lateral incisors and an erupted mandibular mesiodens. This is only the third case, to the best of our knowledge, with the two anomalies manifesting in the anterior region of the mandible.

Keywords: Hypodontia. Hyperdontia. Numeric dental anomalies. Mesiodens.

Resumo

Objetivo: Apresentar um caso incomum de anomalias numéricas num caso de paciente não síndrômico. **Discussão:** Anomalias dentárias numéricas no desenvolvimento da dentição permanente são comuns; entretanto, a ocorrência combinada de hipo e hiperdontia é um fenômeno raro, especialmente em situações não síndrômicas. Este artigo

descreve o caso de um paciente masculino não sindrômico apresentando ausência de incisivos laterais mandibulares e um mesiodens mandibular erupcionado. Esse é o único caso, pelo melhor de nosso conhecimento, com as duas anomalias manifestando-se simultaneamente na região anterior da mandíbula.

Palavras-chave: Hipodontia. Hiperdontia. Anomalias dentárias de número. Mesiodens.

Introduction

Numeric anomalies in the human dentition are quite a common occurrence in the general population and frequently encountered in practice. When fewer number of teeth develop as compared to the normal complement it is termed as hypodontia, whereas hyperdontia is a condition with excess number of teeth developing than in the normal situation. Therefore, though both conditions manifest as changes in the number of teeth, they represent the opposite extremes of the spectrum in the development of the dentition (1). The literature contains numerous reports of exclusive occurrence of these anomalies, however there are very few reports of both the conditions manifesting simultaneously as it is an extremely rare situation. We describe such a concomitant occurrence of hypodontia and hyperdontia in a non-syndromic adult male patient.

Case report

A 28-year-old male patient reported with a complaint of decayed left mandibular molar. The tooth was associated with occasional mild pain and was sensitive on cold fluid consumption. He had no other oral complaints and his medical, family and personal histories were non-contributory. This was the patient's first dental visit, with no prior experience of having undergone any dental procedure. On examination, the soft tissues showed no abnormality except for generalized gingival inflammation. On hard tissue examination, only the teeth 27 had erupted. Examination revealed the absence of the third molars bilaterally in both the jaws. In the mandibular anterior region (Figure 1), absence of the two lateral incisors was noted combined with the presence of a conical supernumerary tooth in the midline. Spacing existed between the mandibular

incisors and canine teeth. Occlusal dental caries was present in the left mandibular first molar and cervical abrasion was noted on the right mandibular first premolar.

A panoramic radiographic examination (Figure 2) confirmed the absence of both the mandibular lateral incisors and the four third molars. A periapical view (Figure 3) of the mandibular anterior region showed close apposition of the *mesiodens* with the incisors' roots and spacing between the incisors and the canines highlighting the absence of the lateral incisors. The *mesiodens* exhibited complete root formation with no evidence of any pathologic periapical changes.

The patient underwent a complete physical examination but no syndromic features were detected by the physician. He was advised aesthetic rehabilitation for the anterior teeth spacing; however, he refused any intervention and was satisfied with his current smile. He underwent scaling of teeth and restorations for the left mandibular first molar and the right mandibular first premolar.



Figure 1 - Clinical appearance of the mandibular anterior segment showing a *mesiodens* and absence of the lateral incisors



Figure 2 - Panoramic radiograph of the jaws reveals absence of any embedded/ unerupted teeth, and missing mandibular lateral incisors and third molars in all the quadrants of the jaws



Figure 3 - Periapical view of the mandibular anterior segment reveals the morphology of the *mesiodens*

Discussion

The simultaneous occurrence of hypodontia and hyperdontia is an extremely rare anomaly in the human dentition. Many terminologies have

been used in the past to describe this condition, such as “concomitant hypodontia and hyperdontia” (Callimeri), and oligopleiodontia (Nathanail); however, now the preferred term is “hypohyperdontia” as suggested by Gibson (1). The exact etiology for this condition is unknown. The role played by any specific genes or enzyme defects has not yet been ascertained (1). This condition has also been reported in identical twins, suggesting a genetic predisposition; however, the variable expression of the supernumerary and missing teeth in those twins revealed a discordant pair suggesting some other factors also at play (2).

Hypohyperdontia rarely occurs in isolation and has been associated with over fifty syndromes, notably cleft lip and palate, Down, Ellis van Creveld, among others (1, 3, 4). The reported prevalence for hypohyperdontia from various studies has been calculated to range from 0.002% to 3.1% (1). Hypohyperdontia does not usually manifest in the same arch and very rarely is the same area of the arch involved (1, 5). Other than the above described case, only two other cases, to the best of our knowledge, have been reported with involvement of the mandibular anterior region (5). Most of the reports suggest the supernumerary tooth occurs most commonly in the maxillary arch, in particular the premaxillary region (95%), followed by mandibular premolar and maxillary molar regions (1, 3, 4). In Asian populations, the mandibular incisors are the most commonly missing teeth, followed by the mandibular second premolars (1). Our case too had missing mandibular lateral incisors, however the supernumerary tooth was a midline mandibular tooth, a rare occurrence by itself (6, 7). The patient also exhibited developmental absence of four third molars of the dentition. Though the congenital absence of the third molars has not been considered by some authors as a feature of hypodontia, the striking absence of all the third molars in our patient suggests some significance to be attached to their failure to develop in view of the anomaly in the mandibular incisor region.

Patients with hypohyperdontia usually do not present any symptoms and are usually detected during examination for other causes or on radiographic examination of the jaws (1). The current case too was recognized when the patient presented with a decayed molar. When any numeric anomaly of the dentition is noted, a thorough clinical intra-oral examination is warranted, combined with a

judicious use of radiographs. Panoramic radiographs are essentially the best screening modality available by virtue of demonstrating the entire teeth-bearing segment of the jaws and supporting structures in single image (1).

Additional information about the root morphology and root development can be obtained using periapical views. Hypodontia of a permanent tooth can often be determined in young children; however, in some instances a normal tooth germ may become radiographically visible only many years later (3). In the present case, the age of the patient (28 years) precluded any possibility of late development of at least the mandibular lateral incisors, as some radiographic evidence would have been noted.

Such rare situations can at times significantly alter the treatment plan and enough latitude should be considered in managing such clinical circumstances.

Disclosure of conflict of interest

The authors declared no conflict of interest in the present article.

Informed consent

The patient have signed an informed consent, that is kept in the archives of the Institution. All the pictures were obtained with prior permission from the patient.

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