



A RARE CASE OF HYPO-HYPERDONTIA WITH THYROID DISORDER

Tiroid Hastalığı ile Birlikte Görülen Nadir Bir Hipo-Hiperdonti Vakası

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ABSTRACT

Hypo-hyperdontia is an extremely rare mixed numerical dental abnormality with the presence of supernumerary teeth and absence of the teeth concomitantly in the same individual.

Although its etiology is unknown, hypo-hyperdontia may appear as a result of genetic or possible environmental factors. This report presents the first case for posterior hypo-hyperdontia with distodens and absent premolar. Furthermore, it is the second case report in the literature for hypo-hyperdontia with a thyroid disorder.

Keywords: Hypo-hyperdontia; thyroid disorder; distodens; missing premolars; posterior teeth

ÖZ

Hipo-hiperdonti aynı kişide diş eksikliği ile birlikte süpernümerer dişlerin bulunduğu, oldukça nadir görülen diş sayı anomalisidir. Etiyolojisi bilinmemekle birlikte, genetik veya çevresel etkenler nedeniyle ortaya çıkabilir. Bu vaka raporunda distodens ve eksik premolar diş ile birlikte meydana gelmiş ilk posterior hipo-hiperdonti vakası sunulmuştur. Aynı zamanda, bu vaka literatürdeki tiroid hastalığı ile birlikte görülen ikinci hipo-hiperdonti vakasıdır.

Anahtar kelimeler: Hipo-hiperdonti, tiroid hastalığı, distodens, eksik premolarlar, posterior dişler

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INTRODUCTION

Tooth number abnormalities are known as hypodontia and hyperdontia. Hypodontia is defined as congenitally missing of one or more teeth, excluding third molars while hyperdontia is the abnormality in the number of teeth which is more than 20 for deciduous teeth, and/or 32 for permanent dentition.¹ Simultaneous occurrence of hypodontia and hyperdontia in the same individual is an extremely rare situation. Various names such as concomittant hypo-hyperdontia², oligopleodontia³ and hypo-hyperdontia⁴ have been used in the literature by different authors. In recent years, this condition has been commonly called as hypo-hyperdontia with a reported prevalence between 0.002% and 3.1%.⁵

This abnormality can be classified into three categories in accordance with the location of occurrence in the dental arches: anterior only, posterior only, and antero-posterior (simultaneous occurrence in both anterior and posterior regions).⁶ In the literature, hypo-hyperdontia cases have been reported in only anterior and antero-posterior regions of the jaws. According to the best of our knowledge, there is no published hypo-hyperdontia case occurred only in posterior regions of the jaws. Although its exact etiology is unknown, hypo-hyperdontia may appear as a result of possible genetic and environmental factors. This abnormality can be seen in conjunction with several syndromes such as Ellis-Van Creveld, Marfan and Down Syndromes. Additionally, hypo-hyperdontia with subclinical hypothyroidism has been reported in only one published case report.⁷

This article is the first case report for the posterior hypo-hyperdontia in a patient with multinodular thyroid disease.

CASE REPORT

A 27-years-old male applied to Gazi University Faculty of Dentistry, Department of Dentomaxillofacial Radiology with a complaint of cracked filling. Systemic

anamnesis of the patient revealed multinodular hyperplastic thyroid disorder without any drug usage. Thyroid hormon levels of him were within the normal limits. He reported to have two siblings with no abnormality in their teeth. He also reported a supernumerary and wisdom teeth extraction in the right posterior maxilla two years ago. There was no abnormality in extraoral examination. In intraoral examination, bilateral missing mandibular second premolars (each one in the quadrants), a persistent primary molar with infraocclusion in the right mandible (Figure 1) and bilateral dens invaginatus in maxillary lateral incisors (Figure 2), also cracked filling in the right mandibular first molar and caries in the right maxillary first molar were observed.



Figure 1. A persistent primary molar with infraocclusion and missing second premolar on the left side of mandible. Missing second premolar on the right side of the mandible.



Figure 2. Bilateral dens invaginatus with lateral incisors on the anterior maksilla.

In panoramic radiographic examination, there were no impacted permanent premolars in mandible, and a distodens was present in the left posterior maxilla (Figure 3). Another maxillary distodens in the right side was observed in panoramic radiographic image obtained two years ago (Figure 4). No missing and supernumerary teeth or hypohyperdontia were observed in clinical and radiographic examinations of his parents. However, his siblings couldn't be examined. Restorative treatment of cracked filling and carious tooth, extraction of persistent primary molar and orthodontic treatment were planned. However, the patient didn't continue to the further treatments.



Figure 3. A persistent primary molar with infraocclusion and missing second premolar on the left side of mandible. Missing second premolar on the right side of the mandible. Distodens on the left side of maxilla (The image was taken in 2015).



Figure 4. Distodens on the right side of maksilla (The image was taken in 2013)

DISCUSSION

In a recent comprehensive review, it has been reported that hypo-hyperdontia was more common in males (58%) than in females, with

a ratio of 1.3:1.⁶ This abnormality was classified into various categories by several authors. Based on the affected jaws, hypo-hyperdontia has been divided into three categories: the maxillary type (the maxillary arch alone), the mandibular type (the mandibular arch alone) and the bimaxillary type (both the maxillary and mandibular arches).⁶ In the literature, the most common hypo-hyperdontia has been reported as bimaxillary type (65%) followed by the maxillary (21%) and mandibular types (14%), respectively.⁶ According to the location of dental arches, it was categorized as anterior, posterior and antero-posterior.⁶ In the literature, it is reported that 57% of the cases were in the anterior regions whereas 43% of the cases were in the antero-posterior regions of the jaws.⁶ However, there was no reported hypo-hyperdontia case in the posterior regions up to date. In this report, bimaxillary type and posterior hypo-hyperdontia was observed in a 27-year-old male. This is the first case of posterior hypo-hyperdontia in the related literature.

In cases of hypo-hyperdontia, hyperdontia was commonly observed in maxillary mesiodens whereas hypodontia commonly affected to the second premolars.⁵ No distodens has been reported in hypo-hyperdontia cases.^{4,8} Two missing mandibular premolars and maxillary distodens were observed in this case.

Hypo-hyperdontia may cause several pathologic conditions including delayed or unerupted teeth, eruption of supernumerary teeth and crowding in dental arches, etc.^{5,9,10}

The majority of published hypo-hyperdontia cases was diagnosed during mixed dentition period.^{4,6} Taurodontism^{11,12}, dens invaginatus¹³ and double teeth¹⁴ have been reported in the patients with hypo-hyperdontia. Panoramic radiographic examination is useful in early detection of several dental abnormalities. In the present case, panoramic

radiographic examination revealed hypohyperdontia and maxillary lateral incisors with dens invaginatus.

Etiology of hypohyperdontia is unclear, it may have a genetic origin or can be a part of various syndromes.^{6,15-17} In this case, his siblings couldn't be examined and no abnormality was observed in his parents. Deficiency of thyroid hormones can lead to delayed and prolonged proliferation of cells of the nervus trigeminus and the rate of neuron production is decreased. Trigeminal nerve fiber growth and pattern are strictly integrated with tooth morphogenesis. Failure of the nerve to establish the lingual branch can cause absence of the mesenchymal dental follicle.^{7,18} There is only one published report regarding a case of hypohyperdontia with subclinical hypothyroidism. In the present case, his systemic anamnesis revealed multinodular hyperplastic thyroid disorder without any drug usage.

According to the best of our knowledge, this is the first case report for posterior hypohyperdontia with distodens. Furthermore, it is the second case report in the literature for hypohyperdontia with a thyroid disorder. Although hypohyperdontia is an extremely rare numerical dental abnormality, careful clinical and radiographic examinations and multidisciplinary treatment protocol are essential.

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