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Bilateral maxillary second molar tooth microdontia: A case of very rare tooth anomaly

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Abstract

The incidence studies of teeth that have microdontia were found to be seen in maxillary lateral incisor teeth, third molar teeth and supernumerary teeth respectively; but this anomaly, which is not related to any syndrome in the molar teeth is rather rare. Besides, the reported case on this subject is not enough. The objective of this paper is to share knowledge and images of a very rare case: bilateral microdontia of the maxillary second molar teeth.

Keywords: Microdontia, second molar, dental anomaly, tooth agenesis

Introduction

Most of the anomalies observed in the teeth are caused by the effects of genetic or environmental factors in the developmental stages of the teeth. While shape, number and size anomalies are formed in the morpho-differentiation stage, formation anomalies by which the tooth hard tissues are formed in the histodifferentiation due to a disorder or an effect. Despite this, the etiology of dental anomalies is not completely known^[1].

The concept of microdontia within the relatively common size anomalies is of the entire tooth or only the crown or only the root, which is smaller than its normal size^[2]. Although the incidence of microdontia varies in various studies, it is considered to be between 0.7-9.9%^[1]. The incidence studies of the teeth that have microdontia were found to be mostly seen in maxillary lateral incisor teeth, third molar teeth and supernumerary teeth respectively^[3, 4]. Microdontic anomalies are associated with various syndromes, such as orofacial digital syndrome type 3, oculo-mandibulo facial syndrome, and William's syndrome. Microdontia is an extremely rare condition in the second molar teeth, which is not associated with syndromes^[2]. The aim of this case report is to share knowledge and images about microdontia, which is not related to any syndrome, in bilateral maxillary second molar teeth. It is believed that this case report will contribute to the literature as there was only one report on this subject^[2].

Case Report

A 22-year-old, completely healthy female patient applied to the Department of Oral and Maxillofacial Radiology of the Faculty of Dentistry with complaints of sensitivity with hot and cold stimulants in her posterior teeth. There was no caries finding in the preliminary examination. Since the second molar teeth seemed smaller and the third molars were not in the alveolar archs, a panoramic x-ray was taken and for possibilities of caries lesion, two bitewing radiographs were taken. On the panoramic image, it was observed that the maxillary second molar teeth were very small on both sides and the third molar teeth were not formed at all (Fig. 1). Taken into account the fact that the germs of the third molar teeth were able to slide anteriorly and erupt from the second molar teeth region in the early second molar tooth extraction, we learned that there were no permanent teeth extraction in the anamnesis. Furthermore, it became evident that the teeth in the question are not third molars having microdontia anomalies by looking at both the intraoral position (Fig. 2) and the smooth axis inclination in the radiographs. In this way, microdontia was detected in maxillary second molar teeth and agenesis was detected in all the third molar teeth.

Since the cause of the complaints is gum inflammation and no proximal caries lesion was seen on the bitewing images (Fig. 3), the patient was referred to the periodontology clinic.

No complaints were made for the second molar teeth having microdontia, including aesthetics, and a possible caries treatment for them could be difficult, so the patient was only informed about careful oral care.

Discussion

Dental anomalies related to a single tooth development, due to local factors, while cases involving more teeth or the appearance of several anomalies are observed together with various syndromes. However, it is possible to observe more than one anomaly in individuals without syndrome, although it is very rare [5]. In this case, both third molar tooth agenesis and microdontia of bilateral second molar teeth were detected in the patient without syndrome.

Only one case report was found when the literature review of molar teeth showing bilateral microdontic anomalies unrelated to the syndrome was made. In the case, microdontia was observed in the maxillary second molar teeth bilaterally and not related to any syndrome. It was emphasized the

reported case was the first in the literature. Hans *et al.* reported that there was neither a case of bilateral molar teeth which has microdontia anomaly nor a case of unilateral [2]. However, a few cases that are not associated with syndrome have been reported in all teeth. In the cases of multiple tooth involvement, the microdontia was mostly pronounced with the anterior teeth [6, 7].

Microdontia anomaly often causes aesthetic problems because it is frequently observed in lateral incisor teeth. When seen in the posterior teeth, it is susceptible to caries because it does not provide the ideal contact with the adjacent teeth, but treatment can be challenging, due to its size and root canal morphologies [3]. In fact, the root canal morphology of the second molar teeth in general can vary and this affects the successes of root canal treatment [8]. Also, if there is a microdontia, it may not be possible to predict how this can change root canal morphology. For these reasons, the diagnosis of microdontia in the early period is very important.



Fig 1: Digital panoramik X-ray image of the case.

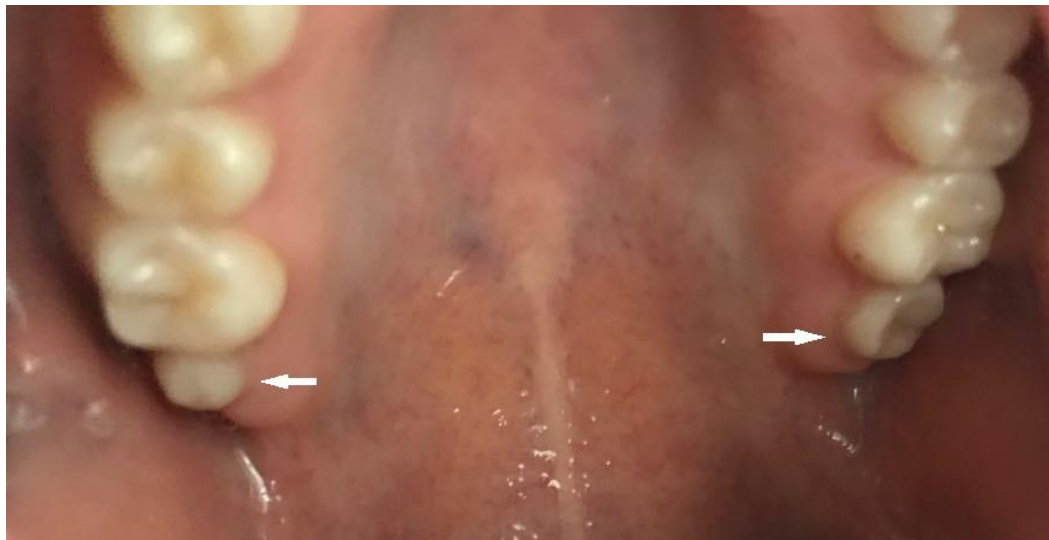


Fig 2: Intraoral photograph showing bilateral microdontia of maxillary second molar teeth (white arrows).



Fig 3: Bitewing radiographs of the case. (a. right side, b. left side)

Conclusion

Although non-syndromic microdontia is observed frequently in the lateral incisors, third molars, and supernumerary teeth, it may rarely occur in other tooth groups as well. Due to the different contact relationship with adjacent teeth and root canal morphology, it is very important to make an early diagnosis. Besides, it may be necessary to use radiographs in addition to oral examination in the diagnosis of microdontia.

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