Case report

Localized Microdontia of Maxillary Second Premolar - A Rare Case Report

Anusha R.L1, Sham Kishor Kanneppady2, Banu V3

Abstract:

Developmental dental anomalies are marked deviations from the normal color, contour, size, number, and degree of development of teeth. Local as well as systemic factors may be responsible for these developmental disturbances. Abnormalities in the size of the teeth are occasionally recorded in the clinical cases. Among this, microdontia is a rare phenomenon. The term microdontia is defined as the condition of having abnormally small teeth. Lateral incisors and third molars are most commonly affected tooth. Hereby reporting a rare case of localized microdontia of the maxillary second premolar in 17 year female patient.

Keywords: Microdontia, Maxillary second premolar

Introduction

Microdontia (microdentism, microdontism) is used to describe teeth which are smaller than normal i.e. outside the usual limits of variation [1]. Microdontia involving only a single tooth is rather common condition. It affects most often the maxillary lateral incisor and the third molar. Supernumerary teeth, however, are frequently small in size. The maxillary and mandibular second premolars seldom exhibit microdontia. Although heredity is the major factor, both genetic and environmental influences affect the size of developing teeth [2]. The treatment of the dentition is not necessary unless desired for aesthetic considerations. Maxillary peg laterals often are restored to full size by porcelain crowns [2].

Case Report

A 17 year old female patient reported to our department for forwardly placed upper anterior teeth. On general examination, physical growth was, within normal limits, the patient was of normal in stature, appearance height, and weight for her age. Upon examination of the limbs, hands, skin, hair, nails and eyes were all appeared normal. No abnormality was noted in neck, back, muscles, cranium and joints as well. Intellectual and scholastic performance was also normal. Her medical history was unremarkable; she was examined and found to be free of any gross abnormalities.

On intra oral examination, the soft tissues were healthy, but the left maxillary second premolar was abnormal in size (figure 1). The occlusion was normal with bimaxillary protrusion. The intraoral periapical radiograph showed smaller dimension of the crown and root (figure 2) compared to the other side suggestive of microdontia of the whole tooth with respect to left maxillary second premolar. A diagnosis of localised microdontia of maxillary second premolar was made. The patient was referred to facilitate the orthodontic treatment.
Discussion:

Developmental anomalies of the teeth are small, the crowns short, and normal contact areas between the teeth are frequently missing” [3]. Shafer, Hine, and Levy divide microdontia into three types: microdontia involving only a single tooth; relative generalized microdontia due to relatively small teeth in large jaws; and true generalized microdontia, in which all the teeth are smaller than normal [4].

Both genetic and environmental factors are involved in the complex etiology of microdontia. Genetic factors probably play a role in the formation of microdontia. The deciduous dentition appears to be affected more by maternal intrauterine influences; the Permanent teeth seem to be more affected by environment [2]. Also disturbances in dental development like tooth agenesis, microdontia and short roots have been reported in a group of patients with high-risk neuroblastoma treated with autologous stem cell transplantation after myeloablative therapy with high-dose chemotherapy and/or total body irradiation [5].

In true generalised microdontia, all the teeth are smaller than normal. Aside from its occurrence in some cases of pituitary dwarfism and down’s such as a porcelain jacket crown at a later date [7].

One of the commonest forms of localized microdontia is that which affects the maxillary lateral incisor, a condition called Peg laterals. Instead of exhibiting parallel or diverging mesial and distal surfaces the sides converge or taper together incisally forming peg shaped or conical shaped crown. The next tooth which can be affected is the third molars [1,4,7]. Microdontia involving maxillary second premolar is very rare.

A conservative management is advised for microdontia keeping in view the age and sex of the patient.
Conclusion:

Microdontia involving only a single tooth is rather common condition, but extremely rare involving maxillary premolars. Hereby, reporting a rare case of localised microdontia of maxillary second premolar. Not all the cases need to undergo treatment, unless there is a requirement. A conservative management is advised for microdontia for aesthetic purpose.

References:


Authors affiliation:

1Assistant Professor, Department of Oral Medicine and Radiology, Century International Institute of Dental Science and Research Centre, Poinachi, Kasaragod – 671541 Kerala. India.
Email id: dr.anusharl@gmail.com

Other authors:

2Reader, Department of Oral Medicine and Radiology, Century International Institute of Dental Science and Research Centre, Poinachi, Kasaragod - 671541 Kerala, India.

3Assistant Professor, Department of Oral Medicine and Radiology, Century International Institute of Dental Science and Research Centre, Poinachi, Kasaragod – 671541 Kerala, India.