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Non Syndromic Bilateral Microdontia of Maxillary Second Molars: A Very Rare Finding

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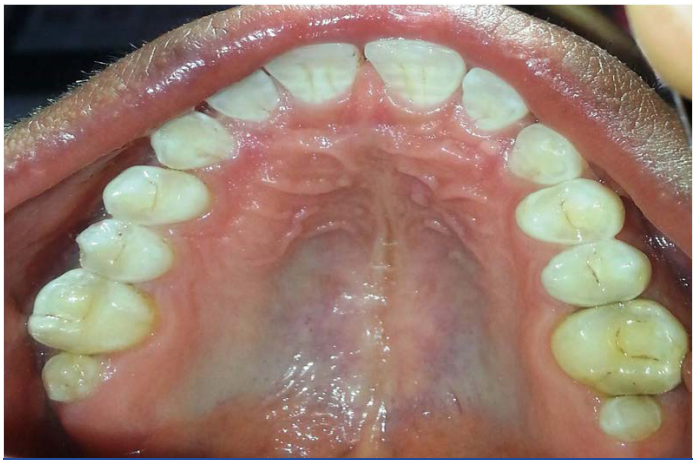
ABSTRACT

Dental anomalies are the formative defects caused by genetic disturbances or environmental factors during tooth morphogenesis. The term microdontia is defined as the condition of having abnormally small teeth. Clinically, microdontia in the permanent dentition, excluding the third molars, is found in 0.8-8.4% of the population. One of the commonest forms of localized microdontia is that which affects the maxillary lateral incisor, a condition called Peg laterals. The next tooth which can be affected is the third molars. Few cases of microdontia in canines have been reported. Localised microdontia of maxillary second molar has never been reported in literature before.

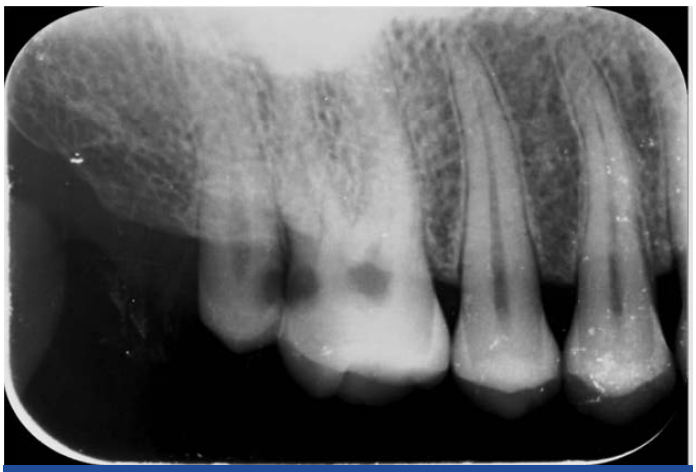
Keywords: Anomaly, Ectomesenchyme, Morphogenesis, Peg lateral

A 24-year-old male patient reported to dental outpatient department with chief complaint of food lodgement and sensitivity to hot and cold food stuffs in upper right back region for last two months. Patient was healthy; normal in appearance and the medical history as well as family history was non-contributory. Clinical examination revealed maxillary second molars smaller than normal adult teeth on both sides [Table/Fig-1]. Maxillary right first molar was sensitive to percussion. Intra-oral periapical radiograph revealed carious lesion in maxillary first and second molar on right side [Table/Fig-2]. An orthopantomogram also revealed presence of localised microdontia of maxillary second molar on both sides and absence of impacted maxillary third molars on both sides [Table/Fig-3]. Maxillary right first and second molars elicited positive response on thermal as well as electric pulp testing and pain persisted in maxillary first molar even after removal of stimulus. Patient was advised root canal treatment of maxillary right first molar and restoration in maxillary second molar after taking pulp protection measures. Root canal treatment of maxillary right first molar and restoration in maxillary second molar was done [Table/Fig-4].

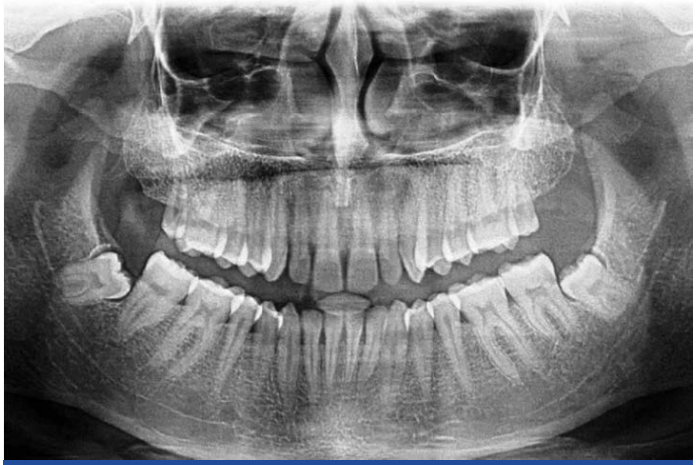
The term microdontia (microdentism, microdontism) is defined as the condition of having abnormally small teeth [1]. Single tooth microdontia has been classified into (1) microdontia of the whole tooth, (2) microdontia of the crown of the tooth, and (3) microdontia of the root alone [2,3]. Maxillary lateral incisor (Peg lateral) is the most commonly affected tooth with microdontia. The presence of microdontia in third molars and premolars has also been reported [3,4]. Localised microdontia of maxillary second molar on both sides had not been reported in literature before.



[Table/Fig-1]: Clinical image showing localised microdontia of maxillary left and right second molars

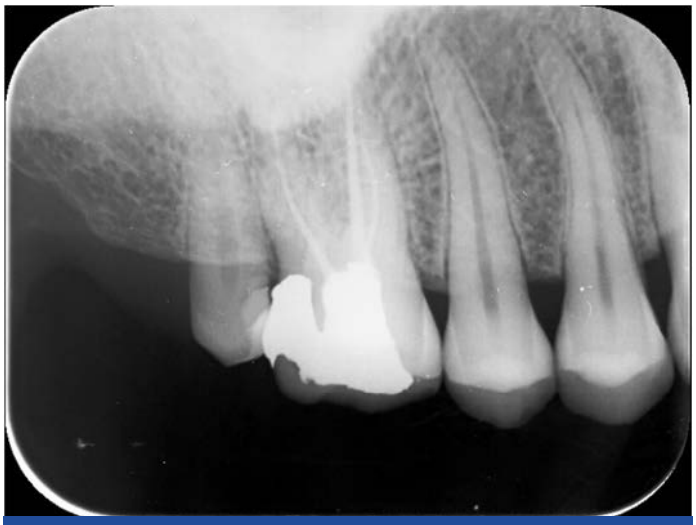


[Table/Fig-2]: Intra-oral periapical radiograph showing carious lesion in maxillary right first and second molars



[Table/Fig-3]: Orthopantomogram showing presence of localised microdontia of maxillary second molar on both sides and absence of impacted maxillary third molars on both sides

Microdontia is believed to have a complex aetiology involving genetic and environmental factors although the initiating factors



[Table/Fig-4]: Intra-oral periapical radiograph showing treated maxillary right first and second molars

causing microdontia still remain unknown [5]. Anomalies in tooth shape, size and structure result from disturbances during the morphodifferentiation stage of development, whereas developmental disturbances in the eruption pattern of the permanent dentition may lead to ectopic eruption, rotation and impaction of teeth [6].

Tooth development is believed to be derived from neural crest, ectodermal and mesodermal contributions. The final shape of the crown is dependent on different regions of the oral epithelium or the ectomesenchyme [2].

Williams's syndrome, Hallermann-Streiff, Gorlin-Chaudhry-Moss syndrome, Chromosome d/u, 45X (Ullrich-Turner syndrome), Oculomandibulo-facial syndrome, Chromosome 13 (trisomy 13), Orofaciodigital syndrome (type 3), Rothmund-Thomson syndrome, Tricho-Rhino Phalangeal, type1 Branchiooculo-facial syndrome are the most common syndromes associated with microdontia [7].

As the patient did not show any abnormal systemic manifestations, all the syndrome associated with the dental anomalies were ruled out. Genetic factors probably play a role in the formation of microdontia. In this case patient's siblings as well as parents were not having this anomaly. This case was unique due to presence of the anomaly in both the maxillary second molars, which is a very rare finding and has never been reported even unilaterally.

Careful observation and appropriate investigations are required to diagnose the condition and institute appropriate treatment. Early diagnosis and treatment of patients with microdontia is important to prevent or minimize complications as normal contact areas are missing in these teeth.

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