Peg Shaped Mandibular Lateral Incisor in a Hypodontia Patient: A Case Report

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INTRODUCTION

Hypodontia refers to the congenital absence of ≤6 teeth. The congenital absence of deciduous teeth is uncommon. In permanent dentition, there is a tendency for certain teeth to be missing more frequently than others. Commonly missing teeth includes the third molars, maxillary lateral incisors and second premolars. Congenital absence of the permanent canines is very rare.¹

The size of teeth, when smaller than normal is termed as microdontia. Microdontia involving a single tooth is also frequently seen. It commonly affects the maxillary lateral incisor and the third molars. A common form of microdontia which affects the maxillary lateral incisor is known as “peg lateral.”²

This article describes a rare case of bilateral agenesis of permanent mandibular canines and unilateral agenesis of mandibular incisors, in association with a rare finding of peg-shaped mandibular lateral incisor in a 7-year-old Indian female.

CASE REPORT

A 7-year-old Indian female reported to the Department of Oral Medicine and Diagnosis of Manubhai Patel Dental College and Hospital with a chief complaint of pain in upper front tooth region of 6-month duration. Her past medical and dental histories were unremarkable. On extra-oral examination, the face was bilaterally symmetrical, convex profile was seen and no temporo-mandibular joint abnormality was observed. The skin, hair and sweat glands appeared normal. On intra oral examination, the soft tissue examination showed no abnormality. The hard tissue examination revealed that the patient was in mixed dentition period with the presence of caries in relation to deciduous maxillary right and left canines, deciduous maxillary left first molar and grossly carious deciduous mandibular left canine. Root piece was present in relation to deciduous maxillary right first molar. Furthermore, the permanent mandibular right central incisor and lateral incisor were clinically missing. Further, the permanent mandibular left lateral incisor showed microdontia of the peg lateral variety (Figure 1). An orthopantomograph was taken to confirm hypodontia of the permanent dentition, which revealed congenital agenesis of permanent mandibular right central incisor, lateral incisor, canine and permanent mandibular left canine. Furthermore, the presence of peg shaped lateral incisor was confirmed which showed incomplete root formation (Figure 2). Hence, a diagnosis of non-syndromic hypodontia associated with peg-shaped mandibular lateral

Keywords: Agenesis, Hypodontia, Microdontia
The present case shows permanent canine agenesis in the mandible, which is rare. Also, the developmental absence of permanent canines has been reported to be higher in females than in males with a ratio of 2.2:1, which is in accordance with the present case. Unilateral agenesis is more frequent than bilateral agenesis.

The size of teeth, when smaller than normal is termed as microdontia. The prevalence of microdontia has been found to be 2.58%. Localized microdontia involving a single tooth is frequently seen and commonly affects the maxillary lateral incisor and the third molars. Peg shaped microdontia commonly affects maxillary lateral incisor and is often found to be bilateral. However, the present case shows a rare occurrence of peg-shaped lateral incisor in the mandibular arch, which is unilateral.

Occurrence of peg-shaped incisors in the mandibular arch is a rare finding. To the best of our knowledge, web search in English literature showed only four reported cases of peg shaped microdontia in the mandibular arch, including Sharma and Rohtak; Chanchala and Nandlal; Anziani et al.; Ramachandra et al., all of which reported peg-shaped microdontia affecting mandibular central incisors. In contrast, our case shows an association of peg-shaped mandibular lateral incisor with hypodontia which is a rare finding.

Strong association has been suggested between hypodontia and microdontia. The etiology of such dental developmental anomalies is obscure. While racial difference in prevalence suggests that genetic factors may be a more probable reason to the congenital absence of teeth, variable etiology exists including hereditary, environmental or endocrine disturbances. There are several genes implicated in tooth agenesis, but mutations occurring in MSX1, PAX9, AXIN2, and EDA are shown to be involved in non-syndromic human tooth agenesis.

Treatment approach has to be case specific and depends on the condition of primary predecessor, number of missing teeth, status of occlusion/occlusal condition and patient/parent’s preferences.

**CONCLUSION**

Anomalies of teeth involve alterations in the dentition that can cause dental disharmony, further causing functional and aesthetic alterations. Hence, early diagnosis and appropriate management of dental anomalies is indispensable.

**ACKNOWLEDGMENTS**

We would like to thank Dr. Harleen Soni and other staff of the Department of Pedodontics of Manubhai Patel Dental College and Hospital, Vadodara for their help and support.

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**DISCUSSION**

Variations have been found in the prevalence of hypodontia between different ethnic groups; in some Africans and in indigenous Australian populations, the prevalence was found to be 1%, but it could be as high as 30% as in Japanese populations. In Indian population, the prevalence of hypodontia recently has been found to be 4.19%.

Congenital absence of canines in the permanent dentition is very rare and the reported incidence varies from 0.18% to 0.45%. Dental anomalies associated with congenitally missing permanent canines include agenesis of other teeth, microdontia, malocclusion, and retained primary teeth. Studies have shown a higher prevalence of permanent canine agenesis in the maxilla than in the mandible; reporting a prevalence of 0.27% in maxilla and 0.09% in the mandible.

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**Figure 1:** Intra-oral occlusal photographs of maxillary (a) and mandibular (b) dental arches

**Figure 2:** Orthopantomograph showing agenesis of permanent mandibular canines, right central and lateral incisors and presence of peg shaped permanent mandibular left lateral incisor

incisor was made. Dental management included extraction of the root piece in relation to deciduous maxillary right first molar with conservative restoration of deciduous maxillary right and left canines, deciduous maxillary left first molar and deciduous mandibular left canine. Patient will be subjected to further orthodontic treatment.
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How to cite this article: Rathore R, Phulari RGS, Jain S. Peg shaped mandibular lateral incisor in a hypodontia patient: A case report. IJSS Case Reports & Reviews 2015;8(1):14-16.

Source of Support: Nil. Conflict of Interest: None declared.