Case Report

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CONGENITAL MISSING PERMANENT MANDIBULAR INCISORS: A CASE REPORT

M Kodanda Ram, * Anila Karunakaran, ** Shruthi Laxmi M K, *** Ajeya Kumara E G †

* Reader, Department of Oral Pathology & Microbiology, Kannur Dental College, Kerala India
** Professor & Head, Department of Oral Pathology & Microbiology, Kannur Dental College, Kerala, India
*** Senior Lecturer, Department of Oral Pathology & Microbiology, Kannur Dental College, Kerala, India
† Senior Lecturer, Department of Periodontology & Implantology, Kannur Dental College, Kerala, India

ABSTRACT

Hypodontia is the congenital absence of less than six teeth because of agenesis. The absence of teeth may be unilateral or bilateral. Congenital absence of mandibular central incisors is not well documented in the literature. The aim of the present paper is to report, a case of congenital missing permanent mandibular central incisors and its clinical implications.

KEYWORDS: Central Incisor; Congenital Absence; Hypodontia; Tooth Agenesis

INTRODUCTION

A tooth is considered as missing when it can be observed neither clinically nor in radiographic images, and also when no history of extraction exists.[1] Hypodontia is one of the most common dental anomalies in permanent dentition.[2] The reported hypodontia rates (third molars excluded) range from 3.5% in an American population 2 to 10.1% in a Norwegian population.[3] Hereditary is believed to be the most frequent cause of these developmental disturbances. Most previous studies dealing with Caucasian populations have revealed that the most commonly congenitally missing teeth are either the mandibular second premolars or the maxillary lateral incisors.[4]

CASE REPORT

A 12 year old male patient reported to a private dental clinic, with a chief complaint of space in the lower anterior teeth. Intraoral examination showed maxillary arch with permanent dentition (Fig. 1) and presence of retained deciduous mandibular central incisor with grade I mobility in the midline (Fig. 2 & Fig. 3). Both permanent mandibular central incisors were missing clinically. Class I molar relation with absence of dental midline was evident. The child was born to non-consanguineous parents. The pregnancy and delivery were uneventful. There was no history of any severe systemic diseases, trauma or infections to the anterior region. Family history revealed no such finding in any members of the family. Panoramic examination revealed congenital absence of permanent mandibular both central incisors. Extraction of retained mobile deciduous central incisor was planned. The treatment option is the closing of the space by orthodontic treatment.

TREATMENT APPROACH

Multidisciplinary management plan should be considered to restore aesthetics and function. Primarily, removable partial acrylic denture can be given, as rigid fixed prosthesis is contraindicated at this age. At adolescence, fixed prosthetic replacement of missing both central incisors is done. The other treatments of choices are orthodontic treatment to close space and implants.

DISCUSSION

The exact etiology for congenital absence of both central incisors is unknown, four theories mainly for the cause of agenesis of incisors. Heredity or familial distribution is the primary cause. Second, anomalies in the development of the mandibular symphysis may affect the dental tissues forming the tooth buds of the lower incisors. Third, a reduction in the dentition regarded as nature's attempt to fit the shortened dental arches (an expression of the evolutionary trend) and finally, localized inflammation or infections in the jaw and disturbance of the endocrine system destroying the tooth buds.[5] There are many published reports of conditions with missing lower incisors. reports of conditions with missing lower incisors. In Japan the prevalence of tooth

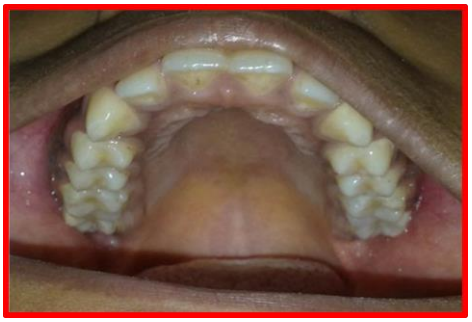

Fig. 1: Maxillary Arch

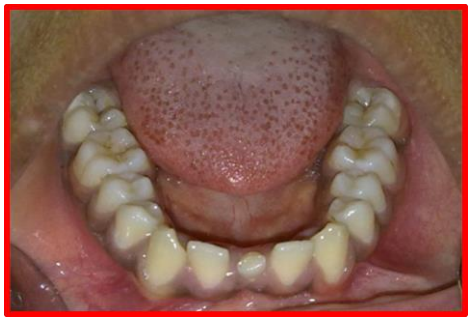

Fig. 2: Mandibular Arch

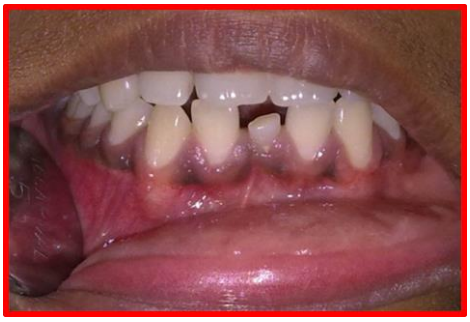

Fig. 3: Retained deciduous 71 and congenitally missing 31 and 41

agenesis is of the same order as in Europeans, but the lower lateral incisor is the most commonly missing tooth.[6] Witkop syndrome is an autosomal dominant condition with missing lower incisors and dysmorphic nails.[7] In the study by Grahnen, most of the cases with hypodontia in primary dentition showed the same condition in the permanent dentition.[8] But no such finding was found in our cases. At present two mutated genes in humans, MSX1 and PAX9 are known to cause missing permanent teeth.[9] Mutations in MSX1 can also cause orofacial clefting.[10] Several experimental and clinical studies indicate that other genetic components are also involved. Hypodontia is also often seen in syndromes, particularly in those which present with other ectodermal anomalies, and in non-syndromic patients with cleft lip/ alveolus with or without cleft palate. Mandibular incisor agenesis has a large effect on mandibular symphysis growth and morphology. The other consequences of agenesis of both mandibular incisors are disturbance in tongue-lip pressure balance and lack of lingual support. Severe malocclusion usually class II Div I malocclusion is also seen with severe anterior deep bite and absence of dental midline or sometimes wide spacing in the anterior region exists resulting in unaesthetic appearance for a child.

CONCLUSION

Recreating the esthetics and function are the primary priority in the children with congenitally absence of permanent central incisors. Multidisciplinary treatment planning is required in management of hypodontia. Pediatric dental surgeon plays a vital role in diagnosing and treatment planning in children with hypodontia.

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