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RESEARCH ARTICLE

ANON SYNDROMIC BILATERAL HYPODONTIA OF PERMANENT MANDIBULAR CENTRAL INCISORS: A CASE REPORT

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ABSTRACT

Hypodontia and oligodontia are the two most common genetic disorders encountered by dentists on routine oral examination. Hypodontia is the congenital absence of one or less than six teeth and may affect permanent teeth. Probable causes for hypodontia are environmental factors, radiation, trauma, infection and genetic mutations. It is necessary to document such condition to enhance the knowledge about congenitally missing teeth. This paper reports a case of bilateral agenesis of permanent mandibular central incisors in a healthy 12-year-old Indian male patient.

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INTRODUCTION

The most commonly encountered developmental anomalies in humans are dental agenesis. Missing teeth have been explained under various terms in literature which includes anodontia, hypodontia, oligodontia, aplasia of teeth, congenitally missing teeth, absence of teeth, and agenesis of teeth. [1]Congenital absence of teeth less than six in number excluding molars refers to hypodontia. The most common congenitally missing teeth are the maxillary lateral incisors followed by maxillary second premolars and mandibular central incisors. There may be unilateral or bilateral absence of teeth.The prevalence of hypodontia is rare in primary dentition approximating to 0.1-0.9% when compared to prevalence rate of 2-10% in permanent dentition. Congenital absence of mandibular incisors has exhibited racial ethnicity towards Japanese, Chinese and Korean population (Kambalimath). Females have shown higher predilection then males (Satish, 2014). CMT(congenitally missing teeth) can be classified in a number of ways depending on the number of missing teeth, it is termed as 'hypodontia' (< 6 missing teeth), oligodontia' (≥ 6 missing teeth) and 'anodontia' (complete absence of teeth) and depending on the severity of condition, it can be classified as 'mild to moderate hypodontia' (2–5 teeth absence), 'severe hypodontia' (≥ 6 teeth absence) and 'oligodontia' (multiple teeth absence in relation to systemic disorders). It is further divided as'syndromic' or 'non-syndromic' forms, which can appear either sporadically or as an inherited condition (Al-Ani, 2017). Thus documentation of such case reports is necessary because of its rarity to provide a review which minimizes the clinicians challenge in diagnosing such cases and further is helpful in providing a multidisciplinary approach in treating the patient (Satish, 2014).

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CASE REPORT

A 12-year-old male patient reported to the department of pediatric and preventive dentistry of Rajarajeswari Dental College and Hospital, Bengaluru, with chief complaint of milk teeth in lower front tooth region. On general physical examination patient's height, weight, built and nourishment corresponds the chronological age of the patient. On intra oral examination, lower arch revealed the presence of retained deciduous mandibular central incisors. Patient's medical history was not relevant.

Familial history of supernumerary tooth or congenitally missing teeth was absent. On clinical examination retained 71 and 81 was noted (Figure 1), history of trauma, dental extractions was not elicited and was not associated with any syndrome.

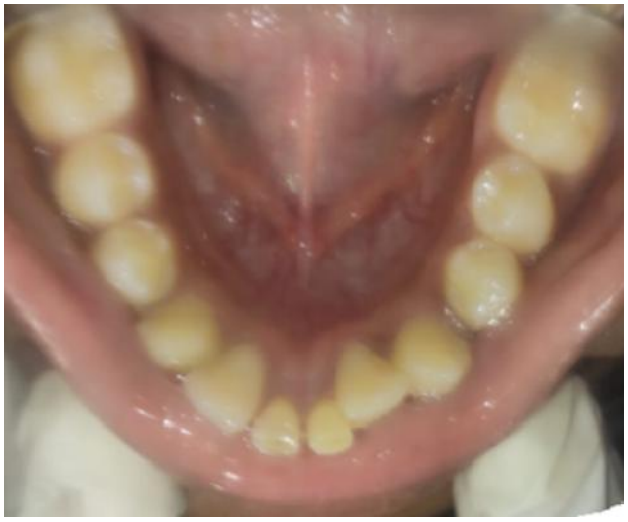

Figure 1. Clinical examination showing retained 71 and 81

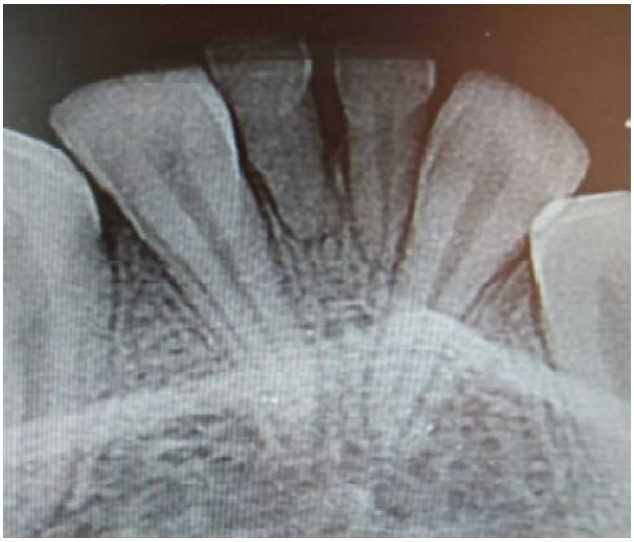

Figure 2. RVG shows the retained teeth 71 and 81

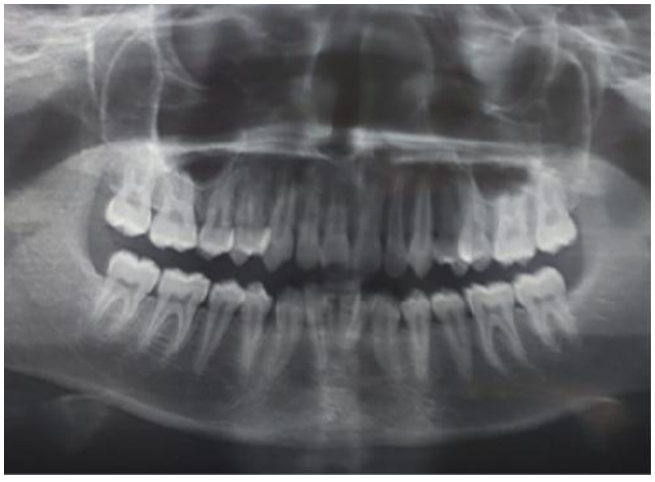

Figure 3. OPG shows the absence of tooth buds 31 and 41

RVG shows retained 71 and 81 with no periapical pathology (Figure 2) OPG revealed absence of permanent mandibular incisor tooth buds and missing third molars in all four quadrants (Figure 3). In the present case, the main aim was to preserve the retained deciduous mandibular central incisors, as far as possible with a regular follow-up every 3 months.

DISCUSSION

Hypodontia is the most prevalent dentofacial malformation in human beings. It may occur as recognised genetic syndrome or as a nonsyndromic isolated trait. The condition refers to the failure in the development of less than six teeth. Phenotypic presentation of hypodontia is varied in terms of severity and, as a result, various terms have been used to describe it, such as, “congenitally missing teeth,” “tooth agenesis,” and “hypodontia.” The term “congenitally missing teeth” is challenging as the tooth development is completed after birth, so that the presence of most tooth germs can be proved only during childhood period[3]The percentage of the population affected by this condition varies. Among different populations, prevalence of hypodontia varies from 4.19% in India to 11.3% in Ireland. mandibular second premolar (11.3%) followed by mandibular incisor (6.9%) and maxillary lateral incisor (6.5%) are the most frequently missing permanent teeth, excluding third molars. The congenital absence affecting a single tooth are reported commonly. Newman in1967 was the first to report bilateral hypodontia (Kagitha). Brooket al attempted to combine the etiologic explanation for these associated dental features, proposing a multifactorial hypothesis with genetic and environmental factors. The model suggests that hypodontia and microdontia present extreme on a scale, with megadontia and supernumerary teeth at the other end and also states the previously reported finding that males with hypodontia have more significant microdontia than females (Brook, 1984). Kjaeret al and co workers suggest that the etiology is different for each case. They reported that teeth located near the ends of peripheral nerve branches are most often affected by agenesis and also studied radiographs and reported that tooth agenesis is associated with the absence of the mandibular canal (Kjaer, 1994). They demonstrated that, in cases of ectodermal dysplasia and Ellis van Crevald syndrome, the oral mucosa and supporting structures have a role in the etiology of hypodontia (McNamara, 2006). Hypodontia with a small number of absences are suspected to be due to phylogenicreduction ,hereditary, localized disturbancee. g., association with cleft lip or palate, radiological disturbances, and downs syndrome and a large number of absences are suspected to be due to hereditary disorders, such as ectodermal dysplasia, incontinentiapigmenti and riegers syndrome, endocrine disturbances and fetal infections (Fukuta, 2004). In the present case the patient’s past medical history and the family history were not significant. Extra-oral examination revealed no abnormalities. Intraoral examination, revealed retained71and 81. Diagnosiswas done using Orthopantomographic (OPG) and Radiovisuography (RVG).OPG examination revealed agenesis of 31 and 41 teeth including third molars.

Management: The clinical implications for pediatric dentistry is that the missing permanent teeth in a child are a matter of concern to most parents therefore retention of 71 and 81 as a natural space maintainer until occlusion settles was the primary treatment plan. Second line of treatment as pediatric dentist will be extraction of 71 and 81 followed by placement of a removable functional appliance. Orthodontic management: If the tooth is mobile extraction is carried out followed by removable functional appliance till the occlusion settles, further the gap is closed using a fixed orthodontic appliance. Prosthodontic management: If the tooth is mobile, extraction followed by removable functional appliance is given till occlusion settles. Once the occlusion settles fixed prosthesis is given or implant placement is done.

Therefore diagnosis is crucial to undertake the treatment plan as hypodontia requires a multidisciplinary approach for treatment.

Conclusion

Cases of agenesis need to be well diagnosed by the pediatric dentists and general practitioners. To provide comprehensive range of treatment modalities a multidisciplinary approach is necessary to help in restoring esthetics and function in the children and adolescents with agenesis.

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