Case Report

International Journal of Dental and Health Sciences
Volume 03, Issue 01

BILATERAL CONGENITALLY MISSING MAXILLARY AND MANDIBULAR PRIMARY CANINES: A RARE CASE REPORT

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ABSTRACT:

Hypodontia is the congenital absence of one or few teeth in primary and/or permanent dentition excluding the third molars. Hypodontia is relatively uncommon in primary dentition (0.1-0.9%). Maxillary lateral incisors are the most common congenitally missing teeth in primary dentition. Hypodontia in primary dentition involving only canines is very rare. The congenital absence of teeth in children can cause esthetic, functional and psychological problems. This article reports a rare case of non-syndromic hypodontia involving bilateral congenital absence of maxillary and mandibular primary canines with the presence of their successors in a 5-year old female patient.

Key words: Hypodontia, tooth agenesis, primary dentition, permanent dentition.

INTRODUCTION:

Hypodontia is relatively uncommon in primary dentition. Stewart defined hypodontia as the agenesis of one or few teeth, oligodontia as the agenesis of six or more teeth (excluding third molars) and complete absence of teeth as anodontia.[1] The prevalence of hypodontia in primary dentition is 0.1-0.9% whereas in permanent dentition 2-10%.[2,3] Hypodontia usually affects maxillary lateral incisors, mandibular central and lateral incisors.[4,5]

Hypodontia can occur as an isolated condition or it can be associated with certain syndromes like ectodermal dysplasia, incontinentia pigmenti, Down's syndrome, Reiger's syndrome etc. The etiology of congenital absence of teeth includes physical obstruction or disruption of the dental lamina, space limitation, functional abnormalities of the dental epithelium or failure of initiation of the underlying mesenchyme.[1,6] Absence of teeth affects mastication, esthetics, phonetics and growth of jaws in children. This article reports a rare case of non-syndromic hypodontia involving bilateral congenital absence of maxillary and mandibular primary canines with the presence of their successors in a 5-year old female patient.

CASE DETAIL:

A 5-year old Indian female patient reported to the department of Pediatric Dentistry with a chief complaint of decayed upper front teeth. This was the child's first dental visit. The child was in good health and the general health history did not reveal any systemic disease. Intraoral examination showed that the patient was in primary dentition

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stage and she had early childhood caries involving 52, 62, 74, 75, 84, 85 and 55 with a deep carious lesion involving pulp (fig-1). Incidentally we noticed that the child had only 16 primary teeth and all the four primary canines (53, 63, 73 and 83) were congenitally missing (fig-1). According to the mother no teeth had been lost due to trauma, extraction or exfoliation for this child. In fact the parents were not aware that a few teeth are congenitally missing in their child. The child had a spaced primary dentition and hence the esthetics was not much affected. The family history did not reveal any congenitally missing teeth. The mother stated that her pregnancy was normal and the child was born to non-consanguineous parents. Furthermore, the child had a younger sibling with no congenitally missing teeth. The child was examined with particular attention to hair, nail, eyes and ears; all of which appeared to be normal. No sweating abnormality was reported by the patient's mother.

In view of multiple congenitally missing primary teeth and early childhood caries a panoramic radiograph (OPG) was made. The radiographic examination confirmed that all the four primary canines (53, 63, 73 and 83) were congenitally missing but their successors (13, 23, 33 and 43) were present and were developing normally (fig-2). All the permanent tooth buds were present (except the third molar tooth buds) and they were in different developmental stages (fig-2). Among the carious teeth 55 showed deep caries involving pulp. Hence, conventional pulpectomy procedure was performed with 55 and all the carious teeth were restored with type-II glass ionomer (GC Fuji II) restorative material (fig-3, 4, 5). The child and her parents were explained about the esthetic replacement of missing teeth by a removable partial denture. But the child and her parents refused for the replacement of missing teeth as they were not worried about the esthetics. Hence the child was rescheduled for periodic recall appointments to assess the developing dentition.

DISCUSSION:

Hypodontia is relatively uncommon in primary dentition.[1] This case is very interesting because it reports congenital absence of all the four primary canines and their successors were present. All the other primary teeth were present and they were normal in size and shape. This hypodontia was not associated with any syndromes/systemic diseases. Nirmala SVSG *et al* [4] reported a case of non-syndromic oligodontia in primary dentition with 14 congenitally missing teeth including three canines, Shashikiran ND *et al* [7] reported a case of idiopathic oligodontia with nine congenitally missing primary teeth including the four primary canines, Venkataraghavan K *et al* [8] reported a case of 18 congenitally missing primary teeth with a history of consanguineous marriage, which could be one of the reasons for the condition as quoted by the authors. Shilpa *et al* [9] reported a case of idiopathic oligodontia with 14 congenitally missing primary teeth including three canines.

Ravn JJ (1971) reported that patients with aplasia in the primary dentition showed a similar pattern in the permanent dentition in 80% of the cases. Daugaard-Jensen *et al* [10] found that agenesis of a primary incisor was followed by agenesis of the permanent successor in 86% of cases. [11-13] Witkop (1962), reported that 11 of 273 individuals with congenitally missing primary teeth also had congenitally missing permanent teeth. However, in our case succedaneous canines were present and were normally developing.

Both environmental and genetic factors can cause failure of tooth development. Environmental factors affect cell proliferation from the dental lamina which may be due to an infection (e.g. rubella, osteomyelitis), trauma, drugs (e.g. thalidomide), chemotherapy or radiotherapy at a younger age.[14] Genetic factors may be associated with mutation of MSX1 and PAX9 genes. Tooth agenesis is probably caused by several independent defective genes, acting alone or in combination with others, which eventually lead to specific phenotypes. Although tooth agenesis is associated with more than 49 syndromes, several case reports describe non-syndromic forms that are either sporadic or familial in nature. Hypodontia is also often seen in syndromes associated with lip/alveolus with or without cleft palate. [15,16]

Management of hypodontia consists of removable partial denture, fixed partial denture and overdentures to improve function and esthetics. [7,8] The choice of treatment depends on the age of the patient, number of teeth missing, condition of the remaining teeth and the cost of treatment.[4,9] In the present case, removable partial denture was recommended due to the growing age of the child.

CONCLUSION:

Hypodontia in primary dentition is a rare entity, when found should be thoroughly investigated for the associated syndromes/diseases. Timely management of hypodontia helps in preventing functional, aesthetic and psychological problems in children.

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FIGURES:

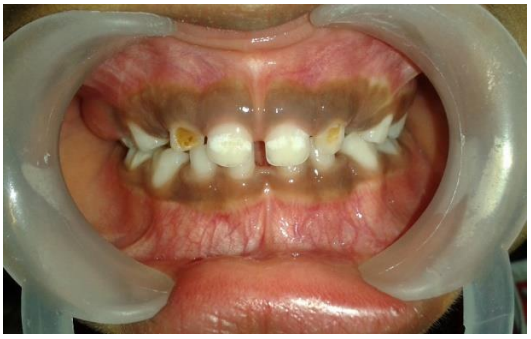

Figure 1: Pre-operative clinical photograph showing primary dentition with multiple carious teeth and congenitally missing 53, 63, 73 and 83.

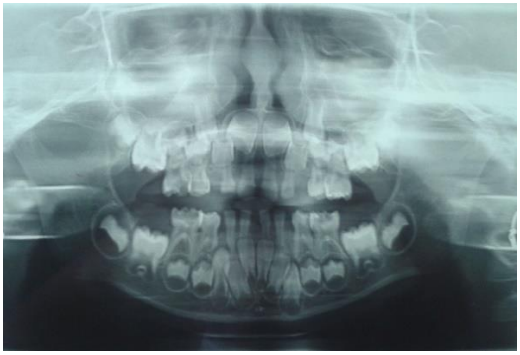

Figure 2: Panoramic radiograph (OPG) showing congenitally missing 53, 63, 73, 83 and presence of their successors 13, 23, 33 and 43.

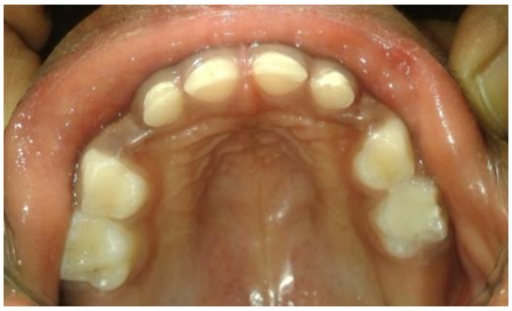

Figure 3: Clinical photograph of maxillary arch showing restorations with 52, 62, 55 and congenitally missing 53, 63.

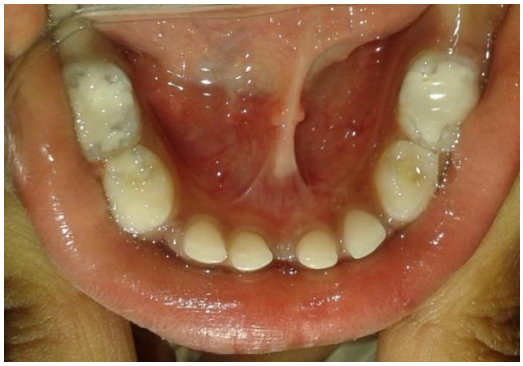

Figure 4: Clinical photograph of mandibular arch showing restorations with 74, 75, 84, 85 and congenitally missing 73, 83.

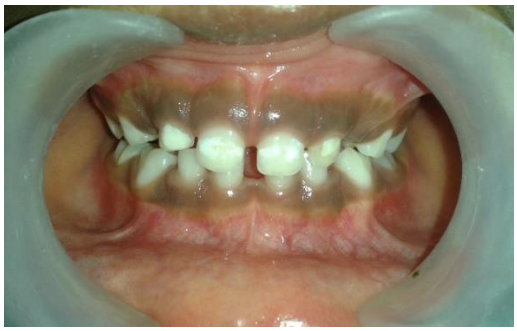

Figure 5: Post-operative clinical photograph showing primary teeth in occlusion and congenitally missing 53, 63, 73 and 83.