ABSTRACT

Oligodontia refers to absence of more than six teeth excluding the third molars. This paper reports two rare clinical cases of non-syndromic oligodontia in 7 years child and 17 years young male patients.

Key words: Oligodontia; child; permanent teeth

Introduction

Agenesis of one or more teeth is common in man. Dental agenesis is most common developmental anomaly in human, which can occur, in an isolated fashion or as part of a syndrome. Hypodontia is generally used to describe the absence of one to six teeth excluding third molars. Oligodontia refers to absence of more than six teeth excluding the third molars and adontia refers to complete failure of one or both dentition to develop. Oligodontia is rare anomaly with overall prevalence of 0.14%. It can be isolated non syndromic trait or as a part of syndrome such as Ectodermal dysplasia, Down's syndrome, Ehlers –Danlos syndrome and Rieger syndrome. This present paper reports two clinical cases of non-syndromic oligodontia.

Case Report 1

A 7 years old male child reported to the department of oral medicine with complaint of multiple decayed teeth. Oral examination revealed presence of all the deciduous teeth with multiple decayed teeth (Figure 1). Since multiple teeth were decayed, patient was advised for panoramic view and it revealed absence of 33,32,31,41,42,43 and right maxillary lateral incisor with dental caries in multiple deciduous teeth (Figure 2). Patient was physically and mentally healthy with no relevant medical history. Family history revealed that patient was only child to their parents. Oral cavity examination of father was found to be normal but mother’s oral examination revealed congenital absence of bilateral mandibular central incisor and maxillary lateral incisor and all the third molars. As child had seven missing teeth excluding the third molar with normal physical and mental health, a diagnosis of oligodontia in non-syndromic patient was made. Patient was advised for restoration of multiple decayed teeth, unfortunately patient did not turn for the treatment and was lost to recall.

Case Report 2

A 17 years old male reported to the department of oral medicine and radiology with complaint of multiple missing teeth. The patient was normal in his physical and mental health. Intraoral examination revealed presence of 11,13,15,16,17,21,23,25,26,27,34,37,43,44,46,47 along with two retained deciduous 73 and 75 (Figure 3). Since multiple teeth were absent panoramic radiograph was advised and it revealed absence of 12,14,22,24,31,32,33,35,37,41,42,45. Third molars were absent in all the quadrants (Figure 4). Physical examination by physician along with multiple skeletal radiographs revealed no abnormality. None of other family members were affected by agenesis of teeth. Based on these a diagnosis of non-syndromic oligodontia was made. Oral rehabilitation was done by one piece fixed partial denture for both upper and lower arch to restore esthetics, speech and chewing function (Figure 5).

Discussion

First case was 7 years old boy having a atypical agenesis of all the six mandibular permanent anteriors along with right maxillary lateral incisor and second case was a 17 years old young male with agenesis of 12 permanent teeth in upper and lower arch. The absence of teeth in young patient can cause esthetics, functional and psychological problems particularly if teeth of anterior region are involved.

Oligodontia or severe hypodontia is a rare developmental dental anomaly and refers to congenital lack of more than six teeth excluding the third molars. The exact etiology of oligodontia is unknown. Several factors have been proposed for the etiology of oligodontia. Environmental factors like infection (rubella, osteomyelitis), trauma, and drugs like thalidomide, chemotherapy or radiotherapy at young age, nutritional disturbances during pregnancy or infancy, syphilis, scarlet fever have been suggested. There is a strong genetic component for etiology. The heritability of congenital missing teeth has been shown in many studies. The genetic factors may be dominant or recessive and it is obvious that in many cases multiple genetic and environmental factors act together. Grafen found that if either parent had one or more congenital missing teeth, there was an increased likelihood that their children also would be affected. This familial relationship suggests genes are important. Mutations of MSX-1 and PAX-9 genes are known to cause the missing tooth. Recent studies have shown mutations in EDA gene could result in non-syndromic Oligodontia.

In the present cases oligodontia in 7 years old boy may be a familial non-syndromic oligodontia. In the second case as there was no physical or mental abnormality; it may be case of isolated or non-syndromic oligodontia. A similar case of familial non syndromic oligodontia in multiple members of family has been described by Suda et al. Tsai et al have reported a case of oligodontia in 6-year-old girl with congenital absence of 16 teeth. Nagaveni et al have reported a case of non syndromic oligodontia with 14 missing teeth. The most common congenital missing teeth excluding the third molars are mandibular second premolar (3.4%) and maxillary lateral incisor (2.2%). Congenital absence of canine in permanent dentition is very
Non-syndromic oligodontia Report of two cases

Figure 1. Clinical picture of Case1, Figure 2. Panoramic view of Case 1, Figure 3. Clinical picture of Case 2, Figure 4. Panoramic view of Case 2, Figure 5. Photograph showing the oral rehabilitation in Case 2

rare and reported incidence varies from 0.18%-45%. Higher incidence is seen in females with a ratio of 3:2.11 The present cases were seen in males. In our first case oligodontia was accidentally noticed in panoramic radiograph and it atypically involved bilateral mandibular central incisors, lateral incisors and canines along with right maxillary lateral incisor. Such agenesis of all the mandibular permanent anteriors has not been reported earlier in non-syndromic oligodontia patients. Agenesis of permanent teeth has been strongly correlated to the absence of corresponding primary predecessors.11 In the present both cases multiple permanent teeth were missing but their corresponding predecessors were clinically present. Studies have demonstrated that vertical and horizontal growth changes during childhood and puberty were most pronounced in the upper half of mandibular symphysis and tooth eruption plays a critical role in continues growth of mandibular symphysis, resulting in an increase in height of the mandible. Hence patient with absence of mandibular anteriors exhibit significantly smaller mandibular symphysis area than normal patient. This can result in minimal volume of bone availability in locations favorable for subsequent restoration.12

Patient suffering from oligodontia may have severe psychological, esthetic, functional problems and early diagnosis and treatment is very important. Treatment approach has to case specific and depends on condition of primary predecessor, number of missing teeth, status of occlusion and patient and parent’s preferences. Options include orthodontic therapy, implants, removal partial prosthesis, fixed prosthesis, over dentures and indicated depending on the type of condition. Treatment not only improves speech and chewing function but also has psychological implications that may greatly help in regaining the self-confidence.5

Conclusion
In conclusion oligodontia is a rare anomaly, its occurrence in non-syndromic patients is still rarer and panoramic radiographs play a vital role in early detection of these anomalies especially in children.

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References
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