

Oligo- Pleiodontia – Report of a rare case

Dear Editor:

Numeric anomalies in the human dentition are quite common occurrence in the general population and are frequently encountered in the practice [1]. Simultaneous occurrence of tooth agenesis and supernumerary or supplemental teeth in same individual is one of rare anomalies of number in human dentition [2]. Concomitant hypohyperdontia or Oligo-pleiodontia is rare condition of unknown etiology. Concomitant hypohyperdontia (CHH) is convenient concise term introduced by Camilleri to describe the simultaneous presence of hypodontia and supernumerary teeth [3].

Here we describe such a concomitant occurrence of agenesis of both the maxillary lateral incisors and presence of two different types of the mesiodens in the same segment of an arch in a non syndromic young adult which is very rare. Literature search reveals very few case reports of CHH involving agenesis of both maxillary lateral incisors in the non syndromic patients. Spyropoulos reported missing 12, 22 along with other missing teeth with supernumerary mandibular incisor [4] and Zhu et al reported missing 12, 22 with supernumerary tooth apical to 46 [5]. To the best of our knowledge CHH involving the agenesis of both maxillary lateral incisors associated with the presence of two different types of mesiodentes in the same segment of arch has been very rarely reported in the literature.

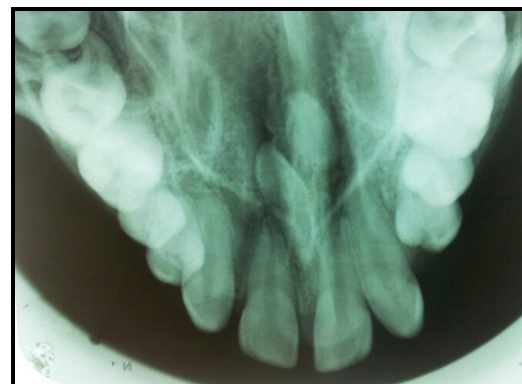
A 22 year young adult reported with a complaint of spacing in the upper anteriors. He had no other oral complaints. His medical, family and personal histories were non contributory. There was no history of trauma to orofacial region. This was patient's first dental visit. On intraoral examination, no abnormality was detected in soft tissue. Hard tissue examination revealed presence of 30 teeth with absence of both maxillary lateral incisors (Fig-1).

Fig-1: Showing the absence of both lateral incisors



Radiographic examination of the premaxillary area by occlusal radiograph showed two impacted mesiodens. One of the mesiodens exhibiting complete root formation was placed in inverted position between the two roots of maxillary central incisors. The other mesiodens was placed horizontally in the palate, revealing not much information about its roots on the radiograph (Fig-2).

Fig-2: Showing the inverted, horizontal placed mesiodens and missing maxillary lateral incisors



The patient underwent complete physical examination but neither syndromic features nor any systemic involvement was detected by the physician. With these findings working diagnosis of CHH involving agenesis of both

maxillary laterals with presence of mesiodens was made. His other parameters were normal. Surgical removal of mesiodens was planned as root of inverted mesiodens was present between two roots of maxillary central incisors. Examination of surgically removed horizontally placed mesiodens revealed it to be a tuberculate type with incomplete root formation and other mesiodens being conical mesiodens. (Fig-3) Further the patient was advised for orthodontic correction for closure of the spaces.

Fig-3: Showing the extracted mesiodens



Dental numeric abnormalities in the development of permanent dentition are quite common [2]. Hyperdontia or supernumerary teeth is a condition with excess number of teeth developing than in normal situation [6]. Mesiodens is the most common type of supernumerary tooth in the midline of maxilla between two central incisors. The mesiodens may erupt normally, stay impacted, appear inverted or take a horizontal position [7]. Their prevalence varies between 0.15% and 1.9% of population. They are classified as eumorphic when they are similar to normal sized central incisor and dysmorphic when they have different shape and size and are categorized into conical, tuberculate, supplemental and odontomas [6].

Conical mesiodens is usually peg shaped, develops with root formation ahead of or at an equivalent stage to that of the central incisor [7]. The tuberculate type possesses more than one cusp or tubercles. It is frequently barrel shaped and has incomplete root or abnormal root

formation. They are located more on palatal aspect of central incisor and rarely erupt in to the oral cavity [8]. In our case, presence of two different types of mesiodens in the same segment of arch, the first being the conical mesiodens with complete root formation and other was tuberculate type of mesiodens with incomplete root formation in association with bilateral missing lateral incisors was unusual. Congenitally missing tooth is defined as the one not erupted in the oral cavity and also not visible in the radiograph. Hypodontia is a term used to describe absence of one to six teeth (excluding the third molars) [2].

Combined occurrence of hypodontia and hyperdontia is extremely rare phenomenon in human dentition [1-3]. Only a few case reports of this rare condition exist in the English literature [9-11]. Literatures on its prevalence are scarce and recently Varela showed its prevalence to be 0.33%. Other studies showed its prevalence to range from 0.002% to 3.1% [10]. CHH is found more in permanent dentition than in primary or mixed dentition and may involve maxilla and or mandible. CHH has been associated with over fifty syndromes notably cleft lip and palate, Down's syndrome, Ellis Van Creveld syndrome [1-2].

The etiology of CHH is obscure, as asserted by Baccetti the two occurrences are probably unrelated phenomenon [12]. Combination of two conditions that can be considered as opposite developmental disorders is unknown. Genetic and environmental causes have been proposed and several attempts have been made to find a possible interpretation of the association of both numerical abnormalities. It may result from disturbances in migration, proliferation and differentiation of neural crest cells or from interactions between the epithelium and mesenchymal cells during the initiation of odontogenesis [10].

CHH does not usually manifest in the same arch and its occurrence in the same area of an arch is even rarer [1-2]. When hypodontia and hyperdontia are located in the same jaw and quadrant, the association could be considered as transposition, which is the positional interchange of two adjacent teeth or the

development and eruption of a tooth in position normally occupied by non adjacent tooth. However, this theory can explain neither CHH in different quadrants nor many cases of CHH in same quadrant with atypical morphologies [10]. Though the present case of CHH involves the same segment of arch there is not sufficient evidence of transposition, in as much as the

occurrence may be coincidental, congenital absence of maxillary lateral incisor is common and the two impacted mesiodentes in the present case exhibit two different morphologies. To conclude CHH manifesting in same arch is rare phenomenon. Early diagnosis and timely treatment can prevent the subsequent complications.

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References

- Nayak AG, Chhapparwal Y, Pai KM, Lele AS. Nonsyndromic hypohyperdontia of the permanent dentition with involvement of the mandibular anterior region: A rare occurrence. *Rev Clin Pseq Odontol* 2010; 6(3):281-284.
- Nuvvula S, Kiranmayi M, Shilpa G, Nirmala SVSG. Hypohyperdontia: Agenesis of three third molars and mandibular centrals associated with midline supernumerary tooth in midline. *Contemp Clin Dent*, 2010; 1(3):136-140.
- Manjunatha BC, Nagarajappa D, Singh SK. Concomitant hypohyperdontia with dens invaginatus. *Ind J Dent Res*. 2011; 22(3):468-471.
- Spyropoulos ND, Patsakas AJ, Angelopoulos AP. Simultaneous presence of partial anodontia and supernumerary teeth. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1979; 48:53-56.
- Zhu JF, Crevoisier R, Henry RJ. Congenitally missing permanent lateral incisors in conjunction with a supernumerary tooth: Case report. *Pediatr Dent* 1996; 18:64-66.
- Meighani G, Pakdaman A. Diagnosis and management of supernumerary (mesiodens): A review of the literature. *J Dent Tehran Univ Med Sci* 2010; 7:41-49.
- Mukhopadhyay S. Mesiodens: A clinical and radiographic study in children. *J Indian Soc Pedod Prev Dent*, 2011; 29(1):34-38.
- Garvey MT, Barry HJ, Blake M. Supernumerary teeth- an overview of classification, diagnosis and management. *J Can Dent Assoc* 1999; 65: 612-616.
- Bateman G, Mossey PA. Ectopia or concomitant Hypohyperdontia? A case report. *J Orthod*, 2006; 33:71-77.
- Varela M, Arrieta P, Ventureira C. Non syndromic concomitant hypodontia and supernumerary teeth in an orthodontic population. *Eur J Orthod* 2009; 31:632-637.
- Sharma A. A rare case of concomitant hypohyperdontia in identical twins. *J Indian Soc Pedod Prev*, 2008; 26(Suppl):79-81.
- Baccetti A. Controlled study of associated dental anomalies. *Angle Orthod*, 1998; 68:267-274.

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