

Case report:

A rare case of multiple dental anomalies in non syndromic patient.

Sulabha. A. N¹, Sameer.C².

Abstract:

Human dental anomalies are formative defects to variety of genetic and environmental factors. Multiple anomalies are seen in patient with chromosomal abnormalities or specific syndromes. Multiple odontogenic anomalies in non syndromic patient are unusual and rare. This paper reports a rare, unique and interesting case of multiple odontogenic anomalies such as bilateral macrodontia of maxillary central incisor, hypodontia, hyperdontia in lower anterior mandible, transposition in left anterior maxilla and taurodontism with molars in a single non syndromic young Indian female patient. Patients with multiple dental anomalies require multidisplinary treatment approaches such as surgical, orthodontic, endodontic, prosthodontic rehabilitation etc. Multiple dental anomalies in non syndromic patient are rare and needs early diagnosis and require multidisplinary approach.

Key words: Bilateral macrodontia, hypodontia, transposition

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Introduction:

Variety of genetic disturbances and environmental factors give rise to multiple odontogenic anomalies¹⁻². Multiple dental anomalies are often seen in patients with syndromes but they can occur in individuals or families without any evidence of syndromes but are very rare². Literature reveals scanty case reports on multiple dental anomalies in non syndromic patients^{1, 2,3,4}

Suprabha et al¹ reported a case of non syndromic abnormalities involving multiple dens invaginatus, generalized enamel hypoplasia, generalized microdontia, root resorption and multiple periapical lesions and supernumerary teeth. Desai et al³ reported a case of generalized short roots associated with microdontia, taurodontism of posterior teeth, obliterated pulp chambers, multiple dens invaginatus, and spontaneous exfoliation of teeth due to root resorption. Garib et al⁴ presented a case of multiple anomalies in non syndromic patient which involved agenesis of multiple teeth, tooth malposition and delayed

development. Recently Nagaveni² reported a case of mandibular canine transmigration, taurodontism, agenesis of right first premolar, generalized microdontia, primary molar with pyramidal roots. This article aims to present a case of multiple dental anomalies in young nonsyndromic female. Bilateral macrodontia with maxillary central incisor, hypodontia, hyperdontia, transposition of canine and first molar, taurodontism with all the first molar, fused single roots with all the second molars were noted in the present case which made this case rare and interesting. To best of our knowledge such multiple anomalies in a single non syndromic patient has not been reported in the literature.

Case report:

A 23 years old female reported to department of oral medicine and radiology for oral prophylaxis. Patient was healthy with no revealent medical and family history. Facial appearance and built of the patient were normal with no signs of mental retardation. Intraoral examination revealed the following. (Fig-1, 2)

1. Dr. Sulabha. A. N. Professor, Department of Oral Medicine and Radiology Al-Ameen Dental College and Hospital Bijapur-586108, Karnataka, India Email: sulabha595@gmail.com
2. Dr. Sameer.C. Associate Professor, Department of Oral and Maxillofacial Surgery Al-Ameen Dental College and Hospital Bijapur-586108, Karnataka, India Email: drsam918@gmail.com

Corresponds to: Dr. Sulabha. A. N. Professor, Department of Oral Medicine and Radiology Al-Ameen Dental College and Hospital Bijapur-586108, Karnataka, India Email: sulabha595@gmail.com

Hypodontia was noted with absence of 12, 22, 32, 31, 41 and all third molars.

Bilateral macrodontia with both maxillary central incisors.

Supernumerary tooth resembling the canine was seen mesial to 33.

Transposition of maxillary canine and first premolar was present on left maxillary region. First premolar had moved almost to the position of missing lateral incisor.

Bodily 90° rotation was seen with right maxillary second premolar.

Retained deciduous lower central incisor were present in missing 31, 41 region.

Roots stumps with left upper first molar.

Proximal caries with right first molar.

Radiographic examination revealed (Fig-3)

Missing 12, 22, 32, 31, 41, and all third molars

Macrodontia with 11, 21

Supernumerary tooth mesial to 33

Transposition with 23 and 24

Taurodontism with all the first molars

Single roots in all the second molars

Root stumps with left upper first molar along with periapical granuloma and proximal caries involving the pulp with the right first molar.

As multiple dental anomalies were noted in single patient, patient was referred to physician for thorough medical examination of systemic abnormalities or syndromic features. No physical or skeletal anomalies were noted. Blood picture and biochemical analysis were within the limits. As all the examination and investigations were within normal limits, a diagnosis of non syndromic occurrence of multiple dental anomalies was made. The treatment plan in the present case included multiplinary approach which included surgical removal of root stumps and periapical pathology with left maxillary first molar, extraction of retained mandibular deciduous central incisors, endodontic treatment with upper right first molar followed by orthodontic and prosthetic rehabilitation. As patient was not willing for any other kind of dental treatment, only oral prophylaxis was done.

Discussion:

Macrodontia is rare dental anomaly in which the teeth appear larger than the normal size⁵⁻⁶. The tooth appears normal in every aspect except for its size⁵. Macrodontia of single tooth is relatively uncommon and may be seen with mandibular molars or premo-

lars⁶. Macrodontia can also be seen in pairs frequently in incisors and canines. Its prevalence is 1-2% in males and 0.9% in females⁶. The etiology is unknown, but genetic and environmental causes have been proposed. An average width of central incisor is 8-8.5mm⁵. In the present case the width of central incisor was 13 mm.

Hypodontia is generally used to describe the absence of one to six teeth excluding the third molars. There are two forms of hypodontia. Syndromic hypodontia and non syndromic or familial form which is the most common reason for congenital tooth absence and tooth agenesis is primary condition. It occurs as isolated trait and affects different number of teeth, encompassing phenotype ranging from hypodontia of single tooth to oligodontia and anodontia⁷. Their prevalence in permanent teeth is 3-8.5%⁸. Tooth agenesis clearly has a genetic basis⁴. Most frequently missing teeth excluding the third molars are mandibular premolar accounting for 3.4% and maxillary lateral incisors for 2.2%. Lower bilateral central incisor absence is uncommon⁹. In the present case three lateral incisor and lower two central incisors were missing along with all third molars in non syndromic patient.

The present report can also be a case of concomitant hypodontia and hyperdontia as supernumerary tooth resembling the configuration of mandibular canine in both the crown and root portion was seen mesial to 33. Supernumerary tooth in the present case may be a supplemental canine. Etiology of the supernumerary tooth may be attributed to combination of environmental and hereditary factors. Supernumerary canines are rare anomalies, if seen mostly in the maxillary arch. Supernumerary canine in the mandibular arch is extremely rare finding. [10] Concomitant hypodontia of anterior five teeth involving both the jaws and supplemental canine has not been reported previously.

Transposition is extreme form of ectopic eruption in which the permanent tooth develops and erupts in the position of other tooth. It is rare anomaly and mostly involves permanent canine. Genetic and hereditary factors can play role in its etiology with exchange in position between developing tooth buds. Canine and First premolar is most common transposition. ^[11, 12] In the present case canine and

first molar transposition is seen

Taurodontism is morphological change in shape of the tooth in which body of tooth is enlarged and the roots are reduced in size. It is seen in modern race dentition¹³. The prevalence is reported to be 2.5% to 11%². It is suggested that the anomaly presents a primitive pattern, a mutation, a specialized or retrograde character, an atavistic feature, an X linked trait, familial or an autosomal dominant trait. In permanent dentation the second and the third molar are affected than first molar. This can be seen with single tooth or multiple teeth can be unilateral or bilateral. Taurodontism presents a challenge during negotiation, instrumentation and obliteration in root canal therapy¹³. In the present case all the first molars are affected and right maxillary first molar had caries

involving the pulp.

Macrodontia, hypodontia, hyperdontia, transposition and taurodontism individually have been reported in the literature. The combined occurrence of these in single non syndromic patient is rare and makes this case a unique entity. Such clinical scenario has not been reported in the literature.

To conclude combination of dental anomalies in the present case differs from previously published cases. The present case may contribute evidence to an understanding of genetically controlled dental anomaly patterns during the long process of dental development. Patient with multiple anomalies require multidisciplinary treatment approaches.

Author explanation for the queries:



Fig-1: intraoral view showing macrodontia with upper central incisors, missing both lateral incisors and transposition of canine and premolar



Fig-2: Intraoral view showing the supplementary mandibular canine and retained deciduous central incisors

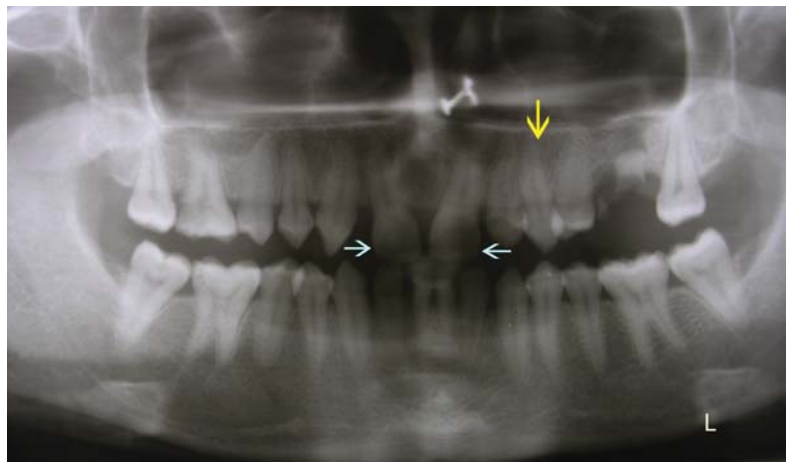


Fig 3: Panoramic view showing multiple anomalies

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