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Running Title: OLIGODONTIA

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ABSTRACT:
Dental agenesis is one of the common developmental anomalies in humans. It is sometimes associated with several syndromes. Different authors have used various terminologies to describe missing teeth, such as, Oligodontia, Anodontia and Hypodontia. Oligodontia is the developmental absence of six or more teeth, excluding the third molars. Oligodontia can have an isolated presentation or may present as part of certain syndromes one of them being ectodermal dysplasia. This present case describes missing of the permanent teeth which may be familial and with no apparent systemic abnormalities.

Keywords: Agenesis, Anodontia, Developmental Anomalies, Hypodontia, Oligodontia.

INTRODUCTION:

Dental agenesis or missing teeth is a developmental anomaly seen in isolated manner or associated with various syndromes in the patients. Different terminologies used to describe missing teeth are oligodontia, anodontia and aplasia of tooth [1]. Oligodontia is a condition consisting of congenital absence of six or more teeth excluding the third molar [2]. Prevalence of oligodontia is estimated to be around 0.1% to 0.3% worldwide according to Polder et al [3]. It may be either unilateral or bilateral involving a single tooth, group of teeth or entire dentition [4]. Here we present a case of missing teeth in an adult male with positive family history and no association with syndrome.

CASE REPORT:

A 35 year old male patient presented to the outpatient department of oral medicine and radiology with complaints of missing teeth since childhood. No other complaint was given by the patient. He did not give any significant past medical or dental history suggestive of any syndrome. Family history revealed another

male sibling in the family having the same condition since childhood. Personal history revealed chewing gutka 6 times daily since 6 years. General examination was normal and vitals were stable. On intraoral examination 16 teeth were absent maxillary right (lateral incisor, canine, first premolar, third molar), maxillary left (lateral incisor, canine, first premolar, third molar), mandibular left(central incisor, lateral incisor, second premolar, third molar), mandibular right (central incisor, lateral incisor, first molar, third molar) and root stump with respect to mandibular right second molar was seen [Figure 1]. Severe staining was seen. Patient had less number of permanent teeth as per age.

Based on these clinical findings the patient was advised to do an Orthopentomogram (OPG) investigation. The result of the OPG confirmed congenital missing permanent tooth bud [Figure 2]. Thus a diagnosis of non syndromic Oligodontia was made and the patient was referred to the department of prosthodontics for further evaluation and possible prosthetic replacement of the missing teeth.

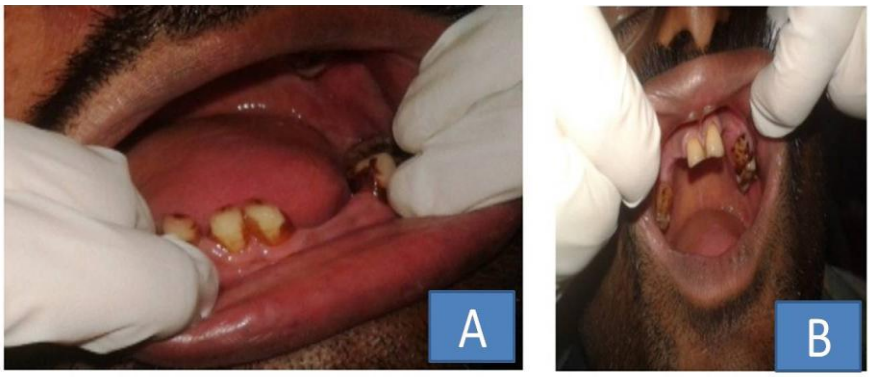

Figure 1: A: shows missing mandibular Anterior teeth; B: shows missing maxillary teeth.

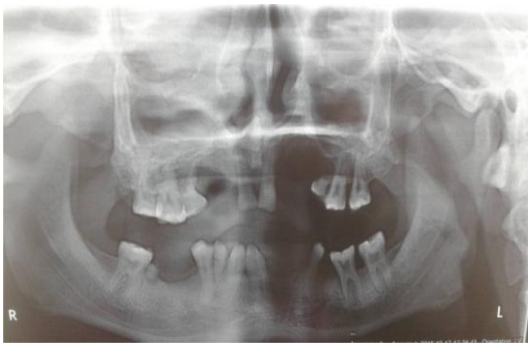

Figure 2: Orthopentomogram (OPG) showing missing permanent teeth buds

DISCUSSION:

Dental agenesis is mostly an underlying developmental defect in humans. A tooth is said to be congenitally absent or missing if it has not erupted in the oral cavity and radiograph evidence is also suggestive of the same [5,6]. When the number of such missing teeth is more than six excluding the third molar the term given is oligodontia [2]. Prevalence decreases as the number of missing teeth increases and more commonly seen in females than males [7]. In the present case the condition was seen in an adult male with unequal distribution of missing teeth.

Oligodontia is also seen in association with various syndromes, which include, ectodermal dysplasia, incontinentia pigmenti, Down syndrome, Rieger syndrome just to name a few. Oligodontia as well as hypodontia (lack of one or more permanent teeth) are highly heritable conditions associated with mutations in the AXIN2, MSX, PAX9, EDA and EDAR genes as reported by Bergendal et al [8]. The present case also reflected some degree of genetic preponderance as the other sibling was also affected by the same condition.

Environmental factors like virus infections, toxins and radio or chemotherapy are also said to be the cause of missing permanent teeth. These were not seen in our case as indicated by the history given by the patient. Careful treatment and planning to avoid long term complications in the patient is needed [9]. In severe cases prosthetic procedure may be required as was done in this case because the patient was an adult with partially edentulous maxilla and mandible.

CONCLUSION:

Oligodontia patients of any age group should be identified clinically and a multidisciplinary approach towards rehabilitation of the patient should be done. This may help in avoiding the adverse implications associated with this condition.

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