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HYPERDONTIA IN PERMANENT DENTITION : SYSTEMATIC REVIEW

Dental Science

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ABSTRACT

Hyperdontia in human dentition can be single,double or multiple due to hyperactivity of dental lamina. Supernumerary teeth are a developmental anomaly of the number which may involve both primary and permanent dentitions.It may be due to syndromic or nonsyndromic noncomplex origin.

KEYWORDS

Hyperdontia, supernumerary teeth, permanent dentition

INTRODUCTION

In Dentistry we found various developmental anomalies of teeth which arise from many etiologies. Teeth may vary in shape,size,colour, texture or in number Out of which hyperdontia including supernumerary teeth are infrequent one of them. Supernumerary teeth may be defined as any teeth or tooth substance in excess of the usual configuration of 20 deciduous and 32 permanent teeth.[1]Supernumerary teeth are classified according to morphology into conical tuberculate, supplemental or rudimentary and odontome[1,2]

INCIDENCE OF HYPERDONTIA

Single tooth hyperdontia occur in 76-86% case, with two supernumerary teeth noted in 12–23% and three or more extra teeth noted in less than 1% of cases.[3]The most common site of occurrence of supernumerary teeth is in maxillary anterior region.[4]The prevalence of supernumerary teeth in the permanent and temporary dentition of 0.5-5.3% and 0.2-0.8%, respectively.[5]The supernumerary teeth are common in males than in females, with a proportion of 2:1.[6,7,8]Supernumerary teeth are frequently found in the superior maxillary bone and mainly in premaxilla 90-98%, they are often impacted 88,7% and are often present in the palatine area.[9]The most common supernumerary tooth is mesiodense which is usually small tooth with cone shaped crown and short root incidence in range between.15-1% with 2:1 ratio in male. In Mongoloid children of Manipur prevalence of supernumerary teeth in North East India has been found to be 0.9%.[10]

ETIOLOGY OF HYPERDONTIA

There is not only one etiology to explain the occurrence of a majority of hyperdontia. The supernumerary teeth result from disturbance in the initiation and proliferation stages of odontogenesis.[11,12]

Two main theories associated with the occurrence of hyperdontia are

1. The dichotomy theory in which tooth bud splits into two equal or different sized parts, resulting in two teeth of equal size or one normal and one dismorphic tooth. This hypothesis is supported by animal experiments in vitro.

2. Localised and independent hyperactivity of dental lamina suggests supernumerary teeth are formed as a result of local, independent, conditioned hyperactivity of dental lamina.

Many syndromes like Cleidocranial dysplasia, Fabry-Anderson syndrome Chondroectodermal dysplasia, Rubinstein – Taybi syndrome, Ehler-Danlos syndrome, Gardner's syndrome,familiar tendency and non-syndromic hyperdontia are seen in autosomal dominant pattern of inheritance.[13]

SEQUELAE OF HYPERDONTIA

A wide range of complications such as delayed, non-eruption,ectopic eruption of permanent teeth, diastema, displacement or rotation of adjacent teeth and cyst lesions development or the resorption of contiguous teeth, root malformations secondary to the pressure exerted by the supernumerary teeth may occur. Therefore, an early diagnosis and adequate treatment are essential

DIAGNOSIS OF HYPERDONTIA

Usual reason for patient visiting dental clinic is due to caries, malocclusion,lack of eruption of permanent teeth or for routine dental check up. In clinical evaluation firstly patient's age and dentition should be examined to determine correlation of chronological age to dental age. Secondly, the presence or absence of a factor related to certain disease which can cause tooth structure, size, shape, and color defects adversely affecting tooth development to be searched. The diagnosis and localization of the hyperdontia is the most important step in the management of hyperdontia based on clinical and radiographic examinations Subsequently the amount of space in the arch for the tooth, morphology and position of the adjacent teeth, contours of the bone, mobility of teeth should be considered through clinical evaluation.

RADIOGRAPHIC VERIFICATION

Radiographic diagnosis is done by periapical radiograph, occlusal film, panoramic view, lateral cephalogram and by Tube-shift technique or Clark's rule for position and shape of tooth.

TREATMENT PLANNING CONSIDERATIONS

Treatment planning for hyperdontia usually requires an interdisciplinary approach involving oral surgical as well as orthodontic opinion. Prudent treatment planning is necessary to achieve the treatment goals. Leyland *et al*. have recommended early removal of supernumerary teeth to facilitate spontaneous eruption of impacted permanent teeth[14].Supernumerary teeth which do not disturb normal dentition can be retained as long as these are asymptomatic, but their periodic follow-up is necessary.Patient's cooperation, age, general oral health, skeletal variation and presence of spacing or crowding in the arch are important factors affecting prognosis. Patient and parent counseling on the treatment options and informed consent are essential to avoid any medicolegal problems[15].

Conflict of Interest: None

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