



NON-SYNDROMIC ASSOCIATION OF MULTIPLE SUPERNUMERARY TEETH- AN UNUSUAL CASE REPORT

Maxillofacial Surgery

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ABSTRACT

Supernumerary teeth are a developmental anomaly characterized by an increased number of teeth concerning normal series. Supernumerary teeth occur more frequently in permanent dentition. It may be unilateral or bilateral found to be in association with syndrome more commonly. Non-syndromic association of multiple supernumerary teeth is a rare phenomenon. Early diagnosis and management of supernumerary teeth will reduce the complications associated in relation with that. Here we report a case of non - syndromic association of multiple supernumerary teeth. Surgical removal of supernumerary teeth was performed and all of them are supplemental type including those in maxillary anterior following which the patient was orthodontically managed to achieve the best functional and aesthetic outcome.

KEYWORDS

Non-syndromic, Supplemental type, Supernumerary teeth.

INTRODUCTION:

Supernumerary tooth (ST) is defined as the presence of a tooth or a tooth-like structure derived from tooth germ in addition to that of normal dental formula [20 deciduous and 32 permanent teeth]¹. The anomaly was first reported between 23AD and 79AD. The prevalence of ST was 0.8% in primary dentition and 2.1% in permanent dentition². It occurs more commonly in permanent dentition with a male predilection. Aetiology remains unclear but it was believed that genetics and environmental factors play a role^{1,2}. ST may present either in maxilla, mandible, or both jaws. It may be seen as solitary or multiple, unilateral or bilateral, and erupted or unerupted tooth occurs in both primary and permanent dentition. The most common site for solitary supernumerary tooth is the anterior maxilla followed by the mandibular premolar region and in the case of multiple teeth, mandibular premolar regions were the more commonly involved site³. The occurrence of multiple supernumerary teeth is a rare phenomenon mostly associated with syndromes and not be associated with syndromes. Location of supernumerary teeth in dental arch plays an important role in diagnosis and treatment plan particularly if surgical intervention is needed³.

Here we are reporting a case of non-syndromic multiple bilateral supernumerary teeth in the maxillary anterior and mandibular premolar region.

Case study:

A 14-year-old male patient was referred to the Department of Oral and maxillofacial surgery with a chief complaint of forwardly and irregularly placed upper front teeth region. The patient's medical history was not significant and non-suggestive of any syndromic association with normal mental status. Familial history also didn't reveal any association with the syndrome. On intraoral examination patient was on the stage of permanent dentition with two supernumerary teeth in 11 and 21 resembling the molar teeth was evident and it has deflected path of eruption in association with permanent tooth [Figure-1]. On intraoral palpation asymptomatic bulge was evident bilaterally on the lingual surface of mandibular premolars. Radiographical examination reveals a total of six supernumerary teeth. Two supernumerary teeth in the maxillary anterior region located palatal to 11, 21. Supernumerary teeth in the mandibular premolar region were lingually impacted and located in periapical region. Two supernumerary teeth were evident in 44, 45, and one supernumerary teeth in 34, 35 [Figure 2]. In addition to this, one supernumerary tooth were impacted and located in 18 region. After

orthodontic consultation five supernumerary teeth concerning maxillary anterior and mandibular premolars were planned to be removed along with therapeutic extraction of 34, 44. The patient and his parents were explained about the treatment plan and informed consent was obtained before the procedure. Routine blood investigations were done. After administering local anaesthesia supernumerary teeth in 11 and 21 were extracted. Crevice incision placed in lingual aspect of mandibular premolars bilaterally and a full-thickness lingual mucoperiosteal flap elevated, impacted teeth exposed. Supernumeraries were extracted out of the socket after adequate bone removal around it [Figure-3]. All five extracted supernumerary teeth were supplemental type and the supernumerary tooth in maxillary anterior was tubercular shaped. Postoperative healing was satisfactory and later the permanent maxillary central incisors aligned orthodontically. [Figure-4]



Figure-1

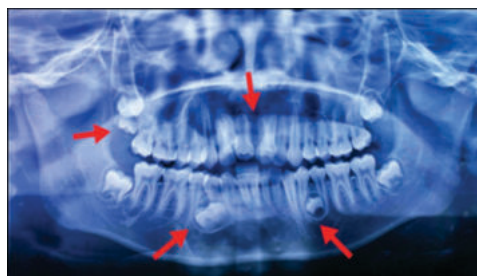


Figure 2



Figure-3



Figure-4

DISCUSSION:

Developmental anomalies of teeth are considered as a variation from their normal presentation. Possible variations can be seen in the size, number, morphology, structure, and position of the teeth^[4]. Hyperdontia, anodontia and hypodontia are the terms used to describe the anomalies affecting the number of teeth. Hyperdontia is a developmental anomaly characterized by the presence of additional teeth to normal series. Hyperdontia is also denoted by the term Supernumerary teeth^[5]. Prevalence rate ranges between 0.2% to 0.8% and 0.5% to 5.3% in deciduous and permanent dentition respectively. Male predominance with male-female ratio ranges from 1.18:1 to 1.5:1^[6]. The most common site for supernumerary teeth is the midline region of anterior maxilla [64.3%] followed by the maxillary third molar [29.6%], mandibular premolar [7%], maxillary premolars [4.2%], and mandibular incisor region [4.2%]^[7]. Supernumerary teeth occur ten times more frequently in the maxilla than mandible. The exact aetiology for the occurrence of supernumerary teeth remains still unclear but still, it has been suggested that supernumerary teeth arise an abnormal reaction to a localized trauma, environmental factors, phylogenetic theory dichotomy of the tooth germ, hyperactivity of dental lamina, X linked autosomal recessive conditions were accepted widely.^[5,7]

Based on the morphology and location of supernumerary teeth have been categorized^[8]. According to their location, they were grouped as mesiodens, paramolar, distomolar, and para-premolars. Based on morphology, it may be of conical (peg-shaped), tuberculate barrel shape (more than one cusp or tubercle), supplemental teeth (duplication of normal series), and odontoma (disorganized diffuse mass of dental tissue). Conical type supernumeraries were common in the maxillary midline and supplemental types in posterior regions. In contrast to the above-mentioned one, we reported a supplemental type [Tubercular shaped] supernumerary in the maxillary midline region. The occurrence of multiple supernumerary teeth always tends to be associated with a syndrome. Syndromes and conditions that presents supernumerary teeth as one of the manifestations include Gardner's

syndrome [70%], cleidocranial dysostosis, cleft lip and palate, Trichorhino-phalangeal syndrome type I, Rubinstein– Taybi syndrome, Nance–Horan syndrome, Opitz BBB/G syndrome, Rothmund Thomson syndrome, Apert syndrome, Crouzan syndrome, Kreigborg Pakistani syndrome, SOX2 anophthalmia syndrome, Zimmerman laband syndrome, Hallermann steriff syndrome, Oculofaciocardiodental syndrome, Robinow syndrome, Ehlers Danlos syndrome, Goldenhar syndrome, Noonan syndrome, Ellis-van Creveld syndrome (chondro ectodermal dysplasia), Fabrye Anderson syndrome, Familial adenomatous polyposis and incontinentia pigmenti^[8]. Yusof et. al suggested that in rare instances, there will be a non association with syndromes. The mandibular premolar region was reported having the highest frequency of supernumerary teeth in the condition non-syndrome multiple supernumerary teeth^[9]. The reported prevalence of non-syndromic association of supernumerary teeth was 2.6%.

Stafne et. al reported an incidence of about 6.6% in mandible out of which 8.4% reported in the premolar region. Single supernumerary teeth account for 76- 86% cases, double supernumerary 12-23% and multiple supernumeraries reported less than 1%^[8]. Supernumerary teeth may occur in both jaws however in some instances it may occur in the gingiva, maxillary tuberosity, maxillary sinus, nasal cavity, sphenomaxillary fissure, soft palate, and in rare cases it has been reported between the orbit and the brain^[5]. Nearly 75% of supernumerary teeth in the maxillary anterior tooth region fail to erupt and in addition to this permanent incisors erupt into an inappropriate position resulting in transposition of incisors. In our case report, we had completely erupted bilateral supernumerary teeth in the maxillary anterior region and it resulted in the transposition of maxillary central incisors.

Foster et. al reported eruption of conical supernumerary was superior to the tuberculate supernumerary. In contrast, Liu et.al states that the tuberculate type of supernumerary teeth erupts in a normal fashion and eruption rate was superior (26.92%) than the conical type (26.21%)^[8].

Radiographs play a vital role in diagnosing the presence, position of impacted supernumerary teeth and adjacent vital structures surrounding the teeth. Two-dimensional radiographs like panoramic, occlusal, and periapical views were employed traditionally to evaluate the position, proximity to adjacent teeth, and vital structures and also to determine the labial and palatal/lingual position of supernumerary. Recently three-dimensional imaging obtained from Computed tomography [CT] and Cone-beam computed tomography (CBCT) provides more detailed information regarding the position of the teeth, eruption status of tooth, root formation/resorption status and treatment planning^[5]. It is essential to enumerate and identify the teeth present clinically and radiographically before the formulation of a definitive diagnosis and treatment plan regarding supernumerary teeth.

Management option for supernumerary teeth includes observation and removal of teeth. Observation includes clinical and radiological monitoring of the patient till the successful eruption of the related teeth into oral cavity. On other hand, management varies from the extraction of supernumeraries alone or extraction followed by orthodontic management to achieve occlusion. Extraction of a supernumerary tooth is done when adjacent teeth eruption inhibited or delayed interference with orthodontic tooth movement and associated with any pathology. Surgical exposure of permanent teeth is indicated whenever there is no adequate space and usually requires orthodontic traction following exposure^[5].

Munns et.al states that prognosis was better when the offending supernumeraries were removed earlier^[10]. Therefore no specific treatment protocol has been followed for supernumerary teeth till now and treatment modality depends on the individual presentation of a case. Complications associated with supernumerary teeth are delayed eruption, diastema, rotation, root resorption, crowding, spacing, loss of vitality of teeth, impaction, an altered path of eruption, infection, rotation, cyst formation, displacement of tooth, and nasal eruption^[3,10].

CONCLUSION:

Supernumerary teeth were relatively asymptomatic, least common, and generally presents with a wide range of complications. Multiple supernumerary teeth generally occur in association with the syndrome but in rare instances, non-syndromic association happens. Early and appropriate diagnosis of supernumerary teeth may provide an ideal

treatment plan of either surgical/orthodontic intervention alone or a combination of both will reduce the complication rate and its adverse effect on developing dentition along with the functional and aesthetic outcomes.

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