

Supernumerary Teeth - A Clinical Case Report

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Abstract A supernumerary tooth is one that is additional to the normal series and can be found in almost any region of the dental arch. Supernumerary teeth may be encountered by the general dental practitioner as a chance finding on a radiograph or as the cause of an impacted central incisor. They may also be found intraorally following spontaneous eruption. The most common supernumerary tooth appears in the anterior maxillary midline followed by lower bicuspid region. The aim of the present study is to report the case of an impacted supernumerary teeth and its effect on adjacent teeth.

Keywords: *Supernumerary teeth, radiograph, impaction, dental arch*

Cite This Article: Bhaskaran Sathyapriya, Purushothaman Lakshmanan, Ramachandran Tamilselvi, and Duraisamy Revathi, "Supernumerary Teeth - A Clinical Case Report." *International Journal of Dental Sciences and Research*, vol. 5, no. 4 (2017): 83-87. doi: 10.12691/ijdsr-5-4-1.

1. Introduction

Supernumerary teeth are considered to be one of the most significant dental anomalies affecting children and adolescents [1]. Supernumerary teeth also known as hyperdontia, may be defined as an extra teeth that develop in addition to the 20 primary and 32 permanent teeth [2]. Sometimes the supernumerary teeth can also be accompanied by a absence of one or more teeth. Supernumerary teeth may occur singly, multiply, unilaterally or bilaterally, and in one or both jaws [3,4,5]. Most frequent locations are upper jaw, midline, upper palatal region of upper incisors, lower bicuspid region, and distal region with respect to the third molar [6,7]. When multiple supernumerary teeth are present (>five), the most common site affected is the the lower bicuspid region, followed by molar region and anterior region [8]. Development of the tooth is a continuous process with a number of physiologic growth processes and various morphologic stages interplay to achieve the tooth's final form and structure [9,10,11]. Interference with the stage of initiation or any momentary event may result in single or multiple missing teeth or supernumerary teeth [12].

The etiology of supernumerary teeth is not completely understood. Phylogenetic theory is one of the earlier theories that represents a return to the anthropoids which had a dental set up with greater number of teeth [9]. The most accepted theory is Dental lamina hyperactivity theory. According to Dental follicle dichotomy theory, the follicle is divided into two equal or different parts which leads to two similar teeth, or one similar tooth and one dysmorphic tooth [9,10,12]. Genetic heritage plays a very

important role in the advent of supernumerary teeth. A dominant, autosomal, recessive gene associated to chromosome X is associated to supernumerary teeth. Its prevalence is stronger in males than in females [13]. Supernumerary teeth are also associated to different syndromes such as: Apert, craniofacial dysostosis or Crouzon syndrome, cleidocranial dysplasia or cleidocranial dysostosis, cleft lip and palate, Down's syndrome, Gardner syndrome, Hallerman-Streiff syndrome, type I and type III oral-digital-facial syndrome, leopard or multiple lentiginos syndrome, tricho-rhino-phalangeal syndrome, Kippel-Trenaunary-Weber syndrome, hypertrichosis syndrome, Zimmermann-Laband syndrome, type III Ehlers-Danlos syndrome, Sturge-Weber syndrome, Fabry-Anderson syndrome, Larsen syndrome [14-22].

Primosh classifies supernumerary teeth according to their shape in the following fashion: [23] Supplemental or eumorphic is a duplication of the normal dental series, the most common supplementary teeth are permanent upper lateral incisors, bicuspid and molars [23].

Rudimentary or dysmorphic are smaller-sized teeth, presenting abnormal shape or size. They can be Conical, Tubercular, Molar-shaped [23]. Supernumerary teeth can also be found impacted, inverted and impacted, associated to other dental anomalies, fused to a permanent tooth as well as associated to the germination of a lower central tooth. SN teeth can also be associated to taurodontism [24-28]. According to their location they can be classified as follows: Mesiodens are found between upper central incisors. They can appear as one single tooth, multiple teeth, unilateral or bilateral, erupted or impacted, vertical, horizontal, or inverted. They are frequently found in the lower jaw area. Complications associated to impacted mesiodens are: delay in eruption of permanent tooth,

deviation of the tooth's eruption, retention or resorption of the permanent tooth's root and diastema. [24,29,30]. Paramolar is a small and rudimentary supernumerary molar, located in a labial (buccal) or lingual position with respect to an upper molar, or in the interproximal space found between second and third molars [31]. Distomolar is located on the distal surface of the third molar. It is a small, rudimentary tooth which rarely prevents normal eruption of other teeth. [10]. In the case of supernumerary teeth, early diagnosis is paramount to avoid complications. [27]. Diagnosis can be conducted through clinical or x-ray assessment. Treatment will depend upon supernumerary tooth position and class, as well as on the effect this tooth exerts on primary or permanent dentition. [32,33]. The present study reports the case of an impacted supernumerary teeth and its clinical implications.

2. Case Report

A 25yr old female patient came to with the chief complaint of pain in upper front teeth region since 6 months and pain on pressing in the nostril since 9 months. There was no history of systemic disease. The patient was neither allergic to any drugs nor under any medications. There was no extra oral swelling. Intra oral examination revealed dental caries in relation to 11, 12, no swelling, sinus opening, tender on percussion in relation to 11, 12 (Figure 1). Electric pulp testing showed delayed response in relation to 11, 12, 21. Preoperative radiograph showed coronal radiolucency approaching pulp in relation to 11, 12, a large periapical radiolucency in relation to 12, 11, 21 and a periapical radioopacity resembling tooth (Figure 2). 12, 11, 21 were treated endodontically and a post endo radiograph was taken (Figure 3). Oblique releasing and intrasulcular incisions were given (Figure 4 & Figure 5). On elevation of the flap the huge lesion was exposed (Figure 6 & Figure 7). The lesion was then enucleated followed by the exposure of the supernumerary tooth (Figure 8 & Figure 9). The supernumerary tooth was removed with bayonet forceps and corrugation of the epithelial remnants was done (Figure 10 – Figure 13). Enucleated specimen was immediately sent for histopathological examination. H & E stained soft tissue section showed 2-3 layered nonkeratinized stratified squamous epithelium with collagen fibers and the connective tissue showed chronic inflammatory cells all suggestive of a dentigerous cyst. The patient was followed up regularly for a period of about 3 weeks (Figure 14 & Figure 15).



Figure 1. Pre Operative Intra Oral Photograph



Figure 2. Pre Operative Intra Oral Periapical Radiograph



Figure 3. Post Endo Intra Oral Periapical Radiograph



Figure 4. Oblique Releasing Incision



Figure 5. Intrasulcular Incision



Figure 6. Elevation of flap



Figure 10. Removal of supernumerary teeth with bayonet forceps

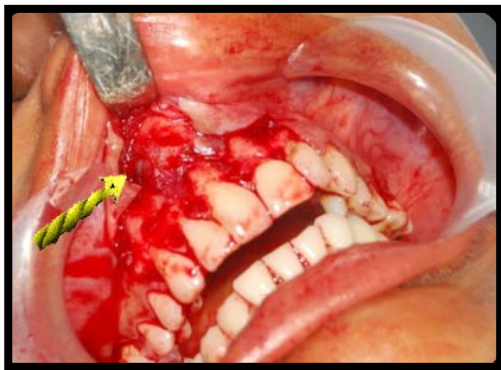


Figure 7. Exposure of huge Lesion



Figure 11. Supernumerary teeth removed



Figure 8. Enucleation of Lesion



Figure 12. Extracted tooth and lesion



Figure 9. Exposure of supernumerary teeth



Figure 13. Immediate post Operative Intra Oral



Figure 14. post Operative Intra Oral Periapical Radiograph



Figure 15. 3 weeks Post Operative Intra Oral Photograph

3. Discussion

Supernumerary teeth are usually asymptomatic and unerupted supernumerary teeth may be detected as a chance finding during radiographic examination [31,34]. Supernumerary tooth in the maxillary anterior region is of major concern to the patient because of the unpleasant appearance. It may lead to crowding, delay or failure of eruption of permanent teeth, diastema, root resorption dilaceration, loss of vitality, subacute pericoronitis, gingival inflammation, periodontal abscesses, dental caries due to plaque retention in inaccessible areas, incomplete space closure during orthodontic treatment, and pathological problems such as dentigerous cyst formation, ameloblastomas, odontomas and fistulae. They may also interfere in alveolar bone grafting and implant placement [15,27,33,34,35,36].

Usually, the supernumerary teeth are detected using an anterior occlusal or periapical radiograph using paralleling technique, panoramic view (orthopantomograph) and computed tomography [32,34,35,37]. Radiographs are important in assessing the location and nature of these anomalies. The major shortcoming of the conventional radiography is overlapping of structures on the film. Computed tomography (CT) has proved to be superior to other radiographic methods in visualizing bone tissue [34,35]. CT images clearly show the intraosseous location, inclination, and morphology of impacted teeth, as well as the distance from adjacent structures [34,35]. However,

radiographs alone are not adequate for the definitive diagnosis. The radiographic interpretation should always be conjunct with clinical findings. Supernumerary teeth can be managed either by removal/endodontic therapy or by maintaining them in the arch and frequent observation. Removal of supernumerary teeth is recommended in cases where they are causing any pathological changes or crowding along with esthetical problem and difficulty in oral hygiene maintenance. In the present case, since the supernumerary tooth caused aesthetic problem periapical lesion in relation to 12, 11 & 21 and pain, it was extracted and the lesion was enucleated. The patient was followed up regularly for a period of about 3 weeks.

4. Conclusion

Unerupted supernumerary tooth, direction of the crown, the location, the influence on adjacent teeth, resorption of adjacent roots and the formation of dentigerous cysts should be carefully evaluated. Early detection, clinical, radiographical examination combined with advanced diagnostic aids is necessary for accurate diagnosis to prevent associated complications. Treatment depends on the type and position of the supernumerary tooth and on its effect or potential effect on adjacent teeth.

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