

Surgical Management of Multiple Mesiodens in a 12-Year Old Boy: A Case Report

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ABSTRACT

Supernumerary teeth are defined as the extra teeth that can be found in the mouth. They can be found anywhere in the oral cavity but the most common site of appearance is premaxilla region. The presence of supernumerary teeth can create variety of clinical problems such as derangement of occlusion, displacement of adjacent teeth, root resorption and may hinder the eruption of permanent teeth. Hence, before proceeding with the treatment clinical and radiographic evaluation should be done. Early detection and prompt treatment is necessary to prevent any deleterious effects on the dentoalveolar structures. The present case report describes the successful management of multiple, tuberculate mesiodens impacted in the premaxillary region.

KEYWORDS: Supernumerary, Surgical Intervention, Impacted central Incisors.

INTRODUCTION

Supernumerary teeth can be defined as extra teeth or tooth substance in addition to the usual arrangement of deciduous and permanent teeth.¹ It can vary in number, location, morphological shape and eruption pattern. On that basis so can be single or multiple, unilateral or bilateral, morphologically malformed or normal in size and shape, and either erupted or impacted.^{2,4} Incidence rate of 0.3% to 0.8% is observed in deciduous dentition and 1.5% to 3.5% in permanent dentition⁵. Males are affected more in permanent dentition with the ratio 2:1.^{2,6} Most common location of supernumerary teeth is premaxillary region and 90% of them reported to be present in maxilla.² In the maxilla, they may remain impacted or erupt in the oral cavity. It has been observed that 25% of supernumerary teeth erupt in the maxilla and rest of them remains unerupted.⁷

The exact etiology of the occurrence of the supernumerary teeth is not clear. There are various theories explaining their occurrence, but all of them are hypothetical because of insufficient embryological material. These are "Phylogenetic process of atavism,"⁸ the "dichotomies of the tooth bud,"⁹ hereditary, and a combination of genetic and environmental factors.¹⁰ Most accepted theory for the development of supernumerary teeth is dental lamina hyperactivity theory.¹¹

The supernumerary teeth may affect the developing dentition in a number of ways. The patient may be totally asymptomatic with the supernumerary tooth or teeth discovered either accidentally as a radiographic finding or following their eruption. They may cause crowding which can be evident following an increased number of erupted teeth. The most common finding is the failure of the eruption of adjacent permanent teeth and it is seen

30 to 60 percent of cases.^{12,13} The supernumerary or adjacent teeth may be displaced, and the ectopic eruption of either is not uncommon. The presence of Supernumerary teeth may also lead to diastemata, resorption of the root of adjacent teeth, malformation of the adjacent teeth such as dilaceration, and loss of vitality of adjacent teeth.¹⁴ However, the presence of supernumerary teeth may be associated with a number of developmental disorders such as Cleft lip and palate, Cleidocranial dysostosis, Gardner's syndrome, Ellis-Van Creveld syndrome, Ehlers-Danlos syndrome, Incontinentia Pigmenti, and Triclia-Rhino-Phalangeal syndrome.¹²

The present case report elucidates the management of displaced permanent maxillary central incisor due to the presence of multiple non-syndromic supernumeraries in the premaxilla.

CASE REPORT

The patient was an 11-year-old boy who came to the Department of Pediatric & Preventive Dentistry accompanied by his father. The patient's father complained about the "jutting out" of the upper left permanent central incisor (21). He also told that they noticed an extra tooth-like structure at the back of the involved tooth 1-2 months back. On intraoral examination, an erupted supernumerary tooth, located palatally, tuberculate in shape was found (Fig. 1a, 1b). Radiographic examination of the oral cavity revealed the presence of two supernumerary teeth, one erupted, and one impacted. A standard upper occlusal (Fig. 2) was taken to determine the position of the unerupted and inverted mesiodens which was in close approximation to the root of the upper right central incisor (11). Additionally, radiolucency was observed surrounding the crown of supernumerary teeth. The treatment plan

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Fig 1 A: An intra-oral view showing displaced 21 and palatally erupted mesiodens



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Figure 2: Maxillary Occlusal Radiograph showing two supernumerary teeth

involved surgical removal of both the mesiodentes after taking parent consent. Prior to the surgical procedure, complete hematological investigations were done to prevent any possible complications. The patient was administered local anesthesia (greater palatine and nasopalatine nerve block). Firstly, the palatally erupted mesiodens was extracted (Fig. 3a & 3b). A full thickness palatal flap was raised using a mucoperiosteal elevator

and then the impacted tooth was exposed, luxated and removed from its socket (Fig. 4a). Hemostasis was



3 A



3 B

Fig 3A & 3B: Palatally placed mesiodens was extracted first and Empty socket after removal



4 A



4 B

Figure 4a & 4b: Mucoperiosteal flap was raised to remove the inverted supernumerary tooth and Surgically removed supernumerary teeth

achieved and the flap was repositioned and sutured with nonresorbable black silk suture (Fig.5). Postsurgical instructions were explained to the patient, and he was kept on analgesic and antibiotic coverage. The patient was instructed to maintain a good oral hygiene using a soft bristle toothbrush and chlorhexidine mouthwash twice daily. The recall visit was scheduled after 1 week for suture removal (Fig.6a & 6b) and evaluation of the healing was done by a 6 monthly recall pattern for continued observation (Fig.7a & 7b).



Figure 5: Intra oral view showing post-operative sutures



Figure 6 A & B: Post-operative view after 1 week



Figure 7a & 7b: Intra oral view after 6months

DISCUSSION

Presence of supernumerary teeth results in series of complications in the developing dentition so it is essential not only to enumerate but also to examine the supernumerary teeth clinically and radiographically, so that, a definitive diagnosis and treatment plan can be formulated.¹⁵ In the present case, mesiodens has probably originated from the permanent dentition tooth bud as supernumerary teeth in primary dentition most commonly present in the lateral incisor regions.¹⁶ Impacted and unerupted mesiodens often results in derangement of occlusion, displacement of adjacent teeth, diastema formation and obliteration of the space for the future eruption of permanent incisors. Early intervention and surgical removal of supernumerary teeth may prevent malocclusion and dental abnormalities.¹⁷

The most common treatment modality for impacted, displaced permanent incisors is either surgical removal of impacted supernumerary tooth or extraction of erupted supernumerary tooth. There are two schools of thoughts for the surgical removal of supernumerary teeth.¹⁸ The delayed intervention recommends treatment only after the apical maturation of the central and lateral incisors i.e. around eight to ten years of age of the child. The second school of thought advocates immediate management of the supernumerary teeth after the initial diagnosis of their presence.¹⁹ Thus in this case, it was necessary to surgically extract the inverted supernumerary teeth under general anesthesia since the patient was unable to tolerate long surgical procedure under local analgesia. Whenever surgical removal is indicated, it should be kept in mind that about 52% of the patients aged 5 to 9 years old often require general anesthesia for removal of supernumerary teeth.¹⁹

In the present case, clinical and radiographic findings revealed that there was a very low risk of damage to the adjacent permanent incisors as the root development was complete.

CONCLUSION

Supernumeraries are relatively common and can cause series of complications in the developing dentition. Early diagnosis, the localization of the position of the supernumerary tooth and dental status of surrounding tooth structure is essential for the fabrication of treatment

plan using early or delayed intervention. Signs suggesting the presence of supernumerary teeth must be recognized by the clinicians and relevant investigations must be performed. Each patient should be treated appropriately to minimize any complications to the developing dentition.

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