Case Report

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Surgical and Orthodontic Management of Multiple Supernumerary and Impacted Teeth: A Case Report

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Abstract

Abnormal upper anterior teeth in a young patient are often a source of esthetic concern for both the child and their parent. The 12 year old male patient reported with an unesthetic smile with four supernumerary teeth and an impacted upper left maxillary central incisor. This case report describes combined surgical and orthodontic treatment for the removal of multiple supernumerary teeth, followed by orthodontic traction of the impacted incisor to guide it into its correct position, enhancing smile esthetics. The surgical orthodontic approach is the optimal strategy for treating impacted maxillary central incisors.

Keywords: Impacted incisors; smile; supernumerary teeth.

Introduction

Supernumerary teeth, which can either erupt properly or be impacted, can cause the development of an odontogenic cyst, displacement, crowding, diastemas, failure of eruption, resorption of nearby teeth, and esthetic problems.[1] An impacted/unerupted maxillary anterior tooth is regarded as unattractive, as it affects self-esteem and general social interaction.[2] This case report is unique as it describes combined surgical and orthodontic treatment for the removal of multiple supernumerary teeth, followed by orthodontic traction of the impacted permanent left maxillary central incisor. This type of case report is limited in the literature.

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Case Report

Chief complaint: A 12-year-old male patient complained of an unesthetic smile and an abnormal teeth in the upper front region of the jaw.

Clinical finding: The patient had two malformed (supernumerary) teeth clinically visible in the upper incisor region, creating interferences while bringing the teeth into occlusion. The profile was convex, and the patient had competent lips (Figure 1 a, b). Intra-orally, the number of teeth present was 26, along with two supernumerary teeth, with minimal crowding in the upper and lower arches. The unerupted teeth were 17, 18, 21, 28, 38, 48. The impacted 21 was palpable in the labial side. Upper dental midline was not possible to evaluate due to impacted 21; lower dental midline was shifted to the left by 2mm. There were occlusal interferences when the teeth were brought into occlusion. Molar relation was bilaterally super class I. Canine relation was class III bilaterally. Overjet was 2mm, and overbite was 1mm, 12.2% of the lower central incisor (Figure 1 b). When smiling, the lip line was average, non-consonant smile arc, smile style complex, upper lip curvature straight, presence of buccal corridors, asymmetrical, and abnormal shape of anterior tooth (Figure 1 a).

Radiographic finding: Orthopantomogram (OPG) showed impacted two supernumerary teeth and 21 (Figure 1 c, d, e). The patient was in stage 2 of Cervical Vertebrae Maturation (CVM) indicated in a lateral cephalogram. (Figure 1 c). CT scan showed that two supernumerary teeth were impacted, where one was in inverted position. No resorption of adjacent teeth was found in the CT scan (Figure 1e).

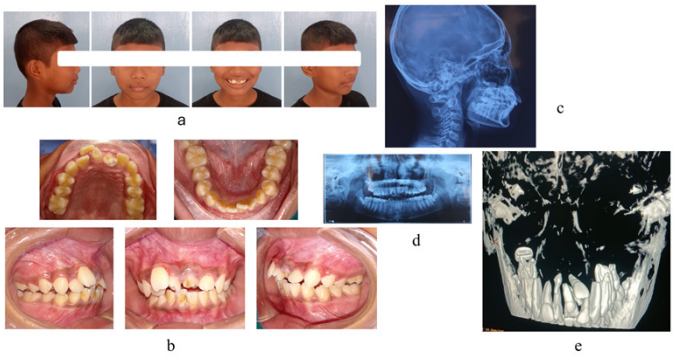

Figure 1: Pre-treatment records (a) Extra-oral photographs (b) Intra-oral photographs (c) Lateral cephalogram before the start of orthodontic treatment (d) OPG before the start of orthodontic treatment (e) CT scan of Face

Diagnosis: Considering cephalometric analysis, SNA was 80˚, SNB was 76˚, ANB was 4˚, and FMA was 27˚, suggestive of skeletal class I malocclusion with a vertical growth pattern. Upper incisor to NA was 36˚/7mm, suggestive of slightly proclined and forwardly placed upper incisors. The lower incisor to NB was 32˚/6mm, suggestive of slightly proclined and forwardly placed lower incisors. S line to upper lip was 3mm, and lower lip was 3mm, suggestive of slightly protrusive upper and lower lips (Table 1).

Table 1: Comparison of pre and post-treatment cephalometric values.

Parameters	Normal value	Pre-treatment	Post-treatment	Difference
SNA	82˚±2˚	80˚	79˚	-1˚
SNB	80˚±2˚	76˚	76˚	0˚
ANB	2˚±2˚	4˚	3˚	-1˚
FMA	25˚	27˚	26˚	-1˚
Upper incisor to NA	22˚/4mm	36˚/7mm	34˚/5mm	-2˚/-2mm
Lower incisor to NB	25˚/4mm	32˚/6mm	33˚/6.5mm	+1˚/+0.5mm
S line to Upper lip Lower lip	-4mm -2mm	3 mm 3mm	2mm 3.5mm	-1mm +0.5mm

Treatment planning: Corrective orthodontics was planned with the extraction of supernumerary teeth and orthodontic traction of 21 to bring it into the arch.

Treatment appliance: Initial bonding was done in upper arch with MBT (Meite Dental Orthodontic Manufacturing Company) 0.022" slot bracket.

Treatment sequence: 0.014" Nickel Titanium (NiTi) of Meite Dental Orthodontic Manufacturing Company, 0.016" NiTi, followed by 0.017" x 0.025" NiTi were used. The medical check-up of the patient was done before general anesthesia, which was normal. Surgery was done by an oral and maxillofacial surgeon under general anesthesia to remove both the erupted and impacted supernumerary teeth, and an attachment (lingual button) was placed wrt 21 by an orthodontist to apply force for orthodontic traction (Figure 2 a). After the removal of supernumerary teeth, occlusal interferences were eliminated. The closed eruption technique was followed in this case for the orthodontic traction. Traction force was applied with the help of an archwire 0.012" NiTi over the base archwire of 0.019" x 0.025" Stainless Steel (SS). 0.012" NiTi archwire was engaged after 21 was visible in the arch (Figure 2 b). The patient had a fall injury during the course of orthodontic treatment, resulting in the mesi-incisal fracture of 11 without pulp exposure. The composite restoration was done for the fracture portion of 11. Settling of posterior teeth was done on 0.018" SS wire through the posterior box elastics of size 3/16" and 4.5 oz force. OPG was done before the debonding of the appliance at 18 months, which showed paralleling of the roots (Figure 3 c). Lateral cephalogram was done before the debonding of the appliance (Figure 3 d). In both the upper and lower arches, a vacuum-formed retainer was placed. It was possible to attain class I molar relationships with normal overjet, and overbite at the end of treatment (Figure 3 a, b).

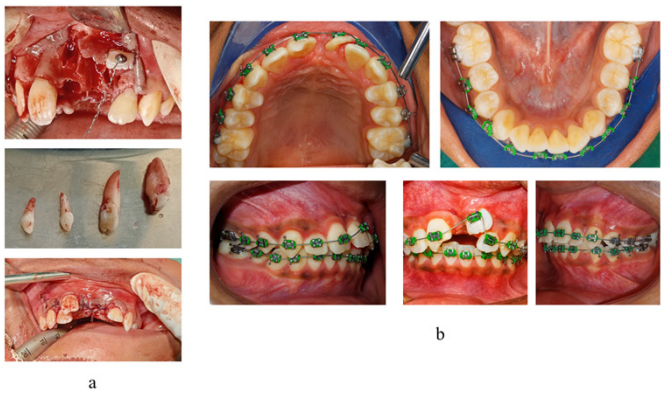

Figure 2: (a) Surgical exposure and attachment placed wrt 21, extracted supernumerary teeth, and photograph after flap closure (b) Photographs after 21 was erupted into the oral cavity

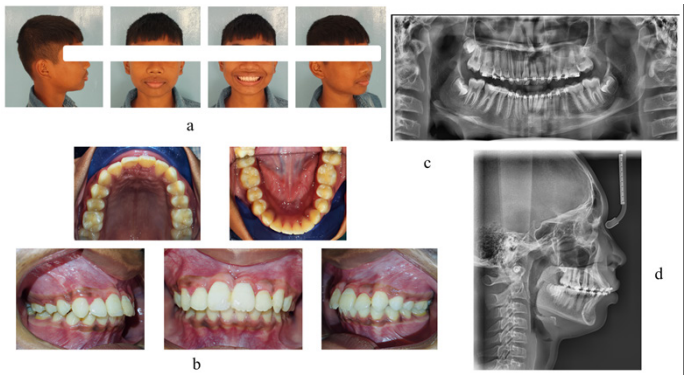

Figure 3: (a) Etra-oral photographs after debond of appliance (b) Intra-oral photographs after debond of appliance (c) OPG just before debond of appliance (d) Lateral cephalogram just before debond of appliance

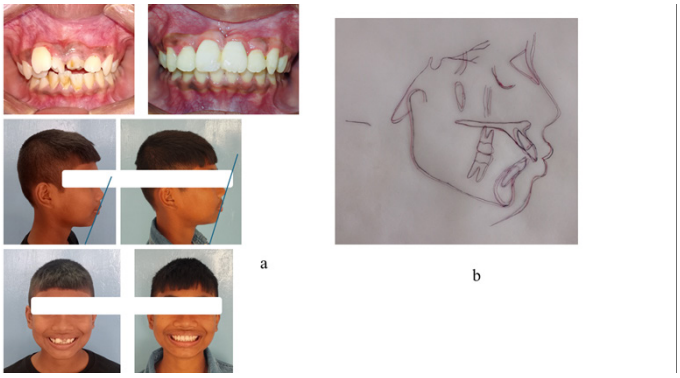

Figure 4: (a) Comparison of photographs before and after treatment and (b) Cranial base superimposition

Treatment outcome: The impacted tooth was erupted with the help of orthodontic treatment (Figure 3). The molar relation at the end of orthodontic treatment was bilaterally class I, with normal overjet and overbite, and upper dental midline coinciding with facial midline. The protrusiveness of upper lip was slightly improved while lower lip was slightly increased (Figure 4 and Table 1). The patient's smile improved from a non-consonant to a consonant smile (Figure 4). The final appearance of the tooth 21 was estheically pleasing with the gingival margin at the same level as 11. The superimposition (American Board of Orthodontics ABO method) of lateral cephalograms showed the improved inclination of upper incisors and slight protrusion of lower incisors (Figure 4 and Table 1).

Discussion

The abnormal upper anterior teeth in a young patient is often a cause for aesthetic concern, both for the child and their parents.[3] The maxillary incisors are the most prominent teeth in an individual's smile; they are also the teeth that are on maximum display during speech in most individuals, and the normal eruption, position, and morphology of these teeth are crucial to facial esthetics and phonetics.[3] The prevalence of supernumerary teeth is 1.87%.[4] Cases of a single supernumerary tooth can reach 92.5%. Multiple supernumerary teeth are rare, representing less than 1% of all cases.[5] Uneruption of maxillary anterior teeth can be due to tooth germ malformation, such as dilaceration, supernumerary tooth, odontoma, over-retained primary tooth, malpositioned tooth germ, odontogenic cyst, mucosal barrier, systemic disease, such as endocrine abnormalities, and bone disease.[2] This case had impacted maxillary central incisor. The cause of impaction was multiple supernumerary teeth in this case. 56-60% of supernumerary teeth cause maxillary incisors impaction due to direct obstruction of permanent incisors.[2] CT scan was done to accurately localize the the impacted teeth as it provides the highly detailed three dimensional information.[6] In our case two supernumerary teeth were erupted, two were impacted. Among the two impacted teeth, one was in inverted position. Lo YF, Liu JF found that the most prevalent etiology of uneruption of maxillary anterior tooth is root dilaceration which was not the case in this patient.[2] The study by Baldawa et al reported unerupted maxillary right central incisor due to a complex composite odontoma a rare occurrence in anterior maxilla.[7] In our case the uneruption was due to multiple supernumerary teeth.

The treatment options for the unerupted maxillary anterior teeth include surgery or transalveolar autotransplantation of the impacted teeth, extraction and prosthetic replacement with a bridge or implant, and orthodontic traction.[8] A longitudinal study of surgical repositioning revealed a high incidence of severe complications.[8] After evaluation of the position and direction of the impacted tooth, degree of root curvature, and availability of space for the impacted tooth, orthodontic traction was planned in this case. The impacted maxillary central incisor can be a challenging orthodontic problem which can further be made difficult if there are multiple supernumerary teeth present. The management of impacted incisor necessitates meticulous treatment planning and the collaboration of an oral surgeon and orthodontist. At the end of treatment, satisfactory functional and aesthetic results were obtained. The clinical crown length and gingival margin level of the impacted tooth 21 were similar to the contralateral tooth. The total treatment duration was 18 months.

Summary

This case report showed the combined surgical and orthodontic treatment for the removal of multiple supernumerary teeth, followed by the successful orthodontic traction of the impacted permanent left maxillary central incisor into the arch.

Conflicts of Interest: None

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References

1. Demiriz L, Durmuşlar MC, Mısır AF. Prevalence and characteristics of supernumerary teeth: A survey on 7348 people. J Int Soc Prev Community Dent. 2015;5(Suppl 1):S39-S43. [PubMed] [Full Text] [DOI]
2. Lo YF, Liu JF. Etiology of Impacted Maxillary Permanent Central Incisor and Associated Orthodontic Management. TJO. 2017;28(1):50-9. [Full Text] [DOI]
3. Nangia T, Kalra G, Langpoklakpam C. Comprehensive Management of an Impacted Maxillary Central Incisor: A Case Report. Cureus. 2024;16(10):e71547. [PubMed] [Full Text] [DOI]
4. Singh AK, Soni S, Jaiswal D, Pani P, Sidhartha R, Nishant. Prevalence of Supernumerary Teeth and Its Associated Complications among School-going Children between the Ages of 6 and 15 Years of Jamshedpur, Jharkhand, India. Int J Clin Pediatr Dent. 2022;15(5):504-8. [PubMed] [Full Text] [DOI]
5. Ata-Ali F, Ata-Ali J, Peñarrocha-Oltra D, Peñarrocha-Diago M. Prevalence, etiology, diagnosis, treatment and complications of supernumerary teeth. J Clin Exp Dent. 2014;6(4):e414-e418. [PubMed] [Full Text] [DOI]
6. Pavoni C, Mucedero M, Laganà G, Paoloni V, Cozza P. Impacted maxillary incisors: diagnosis and predictive measurements. Ann Stomatol (Roma). 2012;3(3-4):100-5. [PubMed] [Full Text]
7. Baldawa RS, Khante KC, Kalburge JV, Kasat VO. Orthodontic management of an impacted maxillary incisor due to odontoma. Contemp Clin Dent. 2011;2(1):37-40. [PubMed] [Full Text] [DOI]
8. Maruya Y, Hino R, Tadano M, et al. Orthodontic management of severe inversely impacted maxillary central incisors: a case series. Front Oral Health. 2024;16(5):1474190. [PubMed] [Full Text] [DOI]

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