

Case Report

Impacted supernumerary teeth along with the presence of impacted maxillary central incisors

ABSTRACT

Impaction of maxillary central incisors is not a common scenario seen in dental practice, and its treatment is often found to be challenging for a clinician as they are esthetically important. Parents are mostly apprehensive when the front teeth of their kids are missing. The causes for the impaction of maxillary central incisors are many, and one of the reasons is supernumerary teeth. A mesiodens is one common type which is a malformed, peg-like tooth that occurs between the maxillary central incisors. A bilateral tuberculate supernumerary tooth is a rare occurrence in the anterior premaxillary region, and if they occur, they fail to erupt into the oral cavity. They often cause impaction of the maxillary central incisors. This unique case report throws light on a rare case of palatally placed; tuberculate bilaterally impacted mesiodens along with impacted maxillary central incisors and its treatment procedures.

Keywords: Impaction, mesiodens, supernumerary teeth

INTRODUCTION

Supernumerary teeth are one of main reasons for the impaction of maxillary central incisors. 56%–60% of the premaxillary supernumerary teeth cause impaction of permanent incisors.^[1] The term supernumerary means “being in excess of the usual or prescribed number.” Supernumerary teeth are defined as “any tooth or odontogenic structure that is formed from a tooth germ in excess of the usual number for any given region of the dental arch.”

Supernumerary teeth are present in both permanent and primary dentitions but are five times more frequent in the permanent incisors.^[2] A mesiodens is a supernumerary tooth located in the maxillary central incisor region. The incidence rate of mesiodens is up to 1.9% in the deciduous dentition and between 0.15% and 3.8% in the permanent dentition.^[3] A sex-linked pattern for the occurrence of mesiodens has been proposed as male patients are affected twice as frequently as females.^[4] Although several theories have been suggested regarding their development, the exact

etiology of supernumerary teeth is not clearly understood. The most commonly accepted theory suggests that the main cause for the development of supernumerary teeth is as a result of horizontal proliferation or a hyperactivity of the dental lamina.^[5]

Supernumerary teeth may remain impacted or erupt into oral cavity. Sometimes, they remain undiscovered for many years without any clinical manifestation. They are associated with many complications, such as impaction, delayed eruption, ectopic eruption, crowding, diastema, eruption into the nasal floor, formation of primordial or follicular cyst with bone destruction, pain and swelling at the site, and resorption of the adjacent root. Thus, the early detection and removal of the offending supernumerary teeth are essential to prevent the future complications.^[6]

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Submitted: 12-Dec-2019

Revised: 03-Feb-2020

Accepted: 13-Feb-2020

Published: 10-Apr-2020

Access this article online

Website:

www.orthodrehab.org

DOI:

10.4103/ijor.ijor_47_19

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How to cite this article: Pallavi C, Dhanasekar P, Joybell C, Moses J. Impacted supernumerary teeth along with the presence of impacted maxillary central incisors. *Int J Orthod Rehabil* 2020;11:43-5.

CASE REPORT

An 11-year-old boy reported to the Department of Pedodontics and Preventive Dentistry of Thai Moogambigai Dental College with a chief complaint of missing left maxillary incisor since exfoliation of milk teeth.

History and intraoral examination

The medical history was noncontributory and there was no associated syndrome. Intraoral examination revealed the presence of retained deciduous incisor 51 without any preshedding mobility [Figure 1]. On palpation, there was a slight bulge seen in relation to 12–22 on the palatal region. There was no pus discharge associated with it.

Radiographic evaluation

On radiographic evaluation, orthopantomograph [Figure 1] disclosed the presence of bilaterally impacted supernumerary teeth along with the presence of impacted maxillary central incisors (11, 21). For further analysis, occlusal radiograph of the upper arch was obtained using SLOB technique, and it revealed the presence of palatally placed impacted supernumerary teeth. These supernumerary teeth had a tuberculate form with incompletely developed roots, and the maxillary central incisors were in Nolla's stage 9 development. Hence, treatment plan was formulated which included surgical extraction of mesiodens followed by orthodontic extrusion of the maxillary central incisors.

Treatment

The treatment procedure was explained to the patient's parents, and informed consent was obtained. Before surgical procedure, presurgical assessment was done which included blood tests. The bleeding time and clotting time were found to be around 2 min 30 s and 3 min 30 s, respectively. Under local anesthesia, extraction of 51 was done and a horizontal incision was made from 12 to 22 regions with No. 15 B.P blade. A flap was raised and extraction of the mesiodens was done followed by the placement of interrupted sutures with braided black silk thread 3.0. Mesiodens was found to be tuberculate type [Figure 2]. The patient was recalled for suture removal after 1 week. For every 15 days, the patient was reviewed and intraoral periapical radiograph were taken to evaluate the eruption status of the permanent incisors. After 4 months of follow up, physiologic eruption of 21 was seen but 11 did not show any signs of eruption. 11 was in Nolla's stage 9 development, and due to slight mesial migration of 12, there was limited space available for the eruption of 11 [Figure 3]. Hence, surgical exposure of 11 was done and brackets were fixed on 11, 21, 22, and 12 along with Ni-Ti wire 0.016 and orthodontic retraction was done with ligature wire (0.010") placed on 11 and 21

followed by expansion. During each visit, very light force was given [Figure 4].

DISCUSSION

Impaction defines a tooth that cannot or will not erupt into its normal functional position in time. Omer *et al.*^[7] from their retrospective analysis concluded that during 6–7 years of age, supernumerary tooth removal can be done with minimal disturbances to the adjacent teeth.

There are many methods involved in the management of supernumerary teeth or crowding, and these include either



Figure 1: Preoperative photograph and radiograph showing tuberculate mesiodens

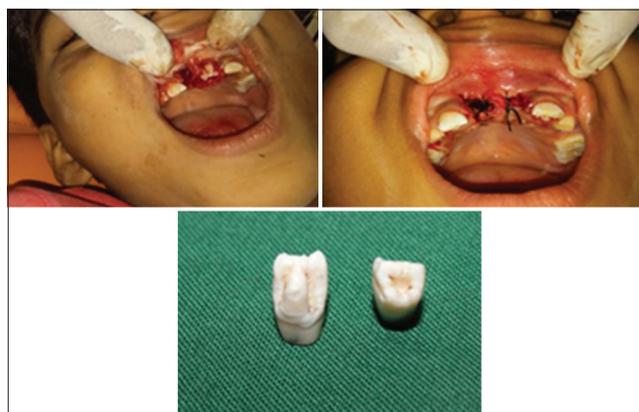


Figure 2: Extraction of mesiodens



Figure 3: Postoperative photograph and radiograph showing physiologic eruption of 21



Figure 4: Surgical exposure of 11 followed by orthodontic traction of 11, 21

removal of supernumerary teeth or tooth only, removal of supernumerary teeth and bone overlying impacted teeth, or incision of fibrous tissue over the alveolar ridge to promote the eruption with or without orthodontic traction.^[8] The disadvantage of the combined surgical/orthodontic therapy is that it requires a longer treatment period and some complications including ankylosis, nonvital pulps, and root resorptions may be encountered. When an extensive amount of bone is removed or an open approach method is used to expose the impacted teeth, surgically, periodontal complication can occur such as gingival recession, delay in periodontal healing, gingivitis, bone loss, and decrease in the width of keratinized gingiva.^[9]

Högström and Andersson^[10] also suggested two different options for supernumerary teeth removal. According to them, supernumerary tooth should be removed as soon as it is identified or after completion of the adjacent tooth's root formation.

In the present case, there was no removal of any underlying bone. Surgical exposure of 11 was done as 21 erupted spontaneously. As 11 lacked the eruptive forces, orthodontic extrusion was carried out. The duration of treatment was around 6 months, and the aligned tooth remained vital and responded normally to percussion, mobility, and sensitivity testing.

CONCLUSION

Early recognition of mesiodens and its removal are necessary as its presence may result in the failure of eruption of adjacent permanent incisors. Maxillary permanent incisors can be successfully positioned in the maxillary arch by surgical repositioning and orthodontic traction, which showed good stability in the current scenario.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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