

An inverted impacted maxillary central incisor: the rare developmental anomaly: A case report

Megha Rautela¹, Himanshu Aeran^{2,*}, Pradeep Rastogi³, Preeti Dhawan⁴

¹PG Student, ³Professor, ⁴Professor & HOD, Dept. of Pedodontics & Preventive Dentistry, ²Director Principal, Professor & HOD, Dept. of Prosthodontics & Oral Implantology, Seema Dental College, Rishikesh, Uttarakhand, India

***Corresponding Author:**

Email: drhimanu@yahoo.com

Abstract

Impaction of maxillary permanent incisor is not a frequently case in dental practice, but its treatment is challenging because of its importance to facial esthetics. Early detection of such teeth is most important if complications are to be avoided. An unusual case of impacted and inverted maxillary central incisor is reported in a 8 year old boy. Inverted maxillary central incisor was not associated with any other anomaly which is rare.

Keywords: Impacted, Inverted maxillary central, Dilaceration.

Introduction

Dental patients with congenitally missing front teeth may present with undeveloped alveolar bone. The diagnosis of an impacted permanent tooth during the mixed dentition period is rarely diagnosed, an impacted central incisor is usually diagnosed, when there is a delay in the eruption of the tooth. Tooth impaction is a condition in which a tooth fails to erupt into normal position beyond the expected time.⁽¹⁾ The order of frequency of the impacted teeth are mandibular 3rd molar, maxillary 3rd molar, maxillary cuspid, mandibular cuspid, mandibular premolar, maxillary premolar and maxillary central and lateral incisors.⁽²⁾ Barrier that result in impaction of a tooth can be due to presence of supernumerary teeth, dental crowding, mucosal barrier, odontomas, gingival hyperplasia, or any history of trauma at the time of primary dentition can be the possible cause of impaction.

The purpose of this article is to present a case of inverted impacted maxillary central incisors in a 8-year-old child and its management.

Case Report

A 8yr old male patient reported to the Department of Pedodontics and Preventive Dentistry, Seema Dental College and Hospital, with the chief complaint of missing upper front tooth since 2 yr. Patient had met with an accident 2yr back in which his primary tooth become mobile and extraction has been done of the same tooth. Intraoral examination revealed missing upper left central incisor (Fig. 1). On palpation there was no bulging on the gingiva of respected missing central incisor. Assessment of occlusion revealed flush terminal plane. In investigation IOPA (Fig. 2), Occlusal radiograph (Fig. 3) and OPG (Fig. 4) of premaxillary region had been taken. According to the investigation 21 was found impacted and placed almost inverted close to the Nasoalveolar Crest. There was no possibility to bring out this tooth in occlusion by any

orthodontic or surgical orthodontic treatment modalities. So it has been decided to go for prosthodontic replacement of the tooth and implant supported fixed prosthesis was planned as a final treatment modalities. Once the patient completed growth and require thickness and consistency bone around the age 16 to 18 yr. But this unerupted inverted tooth may cause problem in future and this missing space is giving an unesthetic appearance and psychological trauma to the patient. So surgical removal of this tooth followed by space maintainer type of interim prosthesis was planned. An alginate impression had taken and diagnostic cast was poured and case was discussed with the oral surgeon and surgery was planned.



Fig. 1: Pre-operative intra-oral view



Fig. 2: Intra Oral periapical X-Ray

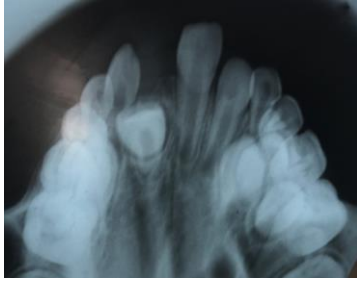


Fig. 3: Occlusal X-Ray



Fig. 4: Orthopantomograph

Surgery was operated under general anaesthesia as the child was very uncooperative. At the alveolar crest a horizontal incision (Fig. 5) was placed followed by the relieving incision and the flap was raised with the periosteal elevator (Fig. 6) and bony covering was removed from the tooth surface (Fig. 7) and tooth was visible. Tooth was held with tooth forceps and was luxated then removed followed by the removal of epithelial lining (Fig. 8, 9 & 10). The forceps extraction was preferred to preserve maximum alveolar bone for better placement of future implant. The flap was approximated and sutured had been placed with 3-0 silk (Fig. 11). Medication and mouthwash was advised. Patient was recalled after 7 days for the removal of suture. Fixed functional space maintainer was planned for which band adaptation was done on upper 55, 65 and an alginate impression was made with band, and band were transferred on the impression and cast was poured. Then the fabrication of modified nance palatal arch appliance with central incisor was done and after the fabrication of appliance patient was recalled for its cementation. The appliance was cemented with type 1 Glass Ionomer Cement (Fig. 12). He was advised for the follow-up after every 6 month or yearly till he achieved the required growth for implant placement therapy for permanent fixed prosthesis.



Fig. 6: Incision



Fig. 7: Reflection of flap



Fig. 8: Window in cortical plate



Fig. 9: Forcep extraction of tooth



Fig. 10: Socket after extraction



Fig. 11: Extracted tooth



Fig. 12: Closure & suturing



Fig. 13: Modified nance palatal arch appliance with central incisor

Discussion

The occurrence of impacted maxillary incisors can be associated with hereditary and environmental factors. The maxillary incisors have a major role on dental and facial aesthetics of an individual. The impacted maxillary permanent central incisor with dilacerations is uncommon.⁽³⁾ According to Andreasen., the trauma to the primary tooth is transmitted directly to the developing crown of the permanent bud due to the close proximity of the primary tooth root and the developing enamel. In contrast to that, the effect of trauma to the Hertwig's epithelial root sheath is the result of the transmission of the traumatic force through

the surrounding bone or through the primary tooth, causing deflection or displacement of the permanent bud and this deflection of permanent tooth also cause pushing lateral incisor root distally which result into the rotation of lateral incisor mesially. such a course of events requires a traumatic force of a considerable magnitude. This hypothesis was confirmed in the previous report where deflection of permanent tooth bud takes place resulting in impaction.⁽⁴⁾ The crown is usually dislocated forward with the palatal surface facing the vestibular site; the incisor border is turned up towards the anterior nasal bone. The curve or bend could occur anywhere along the length of root, depending on the amount of root formed when the injury occurred.

In our present case, surgical removal of the impacted maxillary central incisor was done under general anaesthesia. Utmost care was given during bone removal and elevation of the tooth to prevent the damage to the nasoalveolar crest.

The absence of tooth was not only unesthetic but was also giving psychological trauma to the patient in moving around in society with his peers which may hamper his personality development so it was essential to give this interim prosthesis after the desired surgery of removal of inverted incisor tooth.

Conclusion

Thus impacted maxillary central incisor which is inverted is extremely rare. Management of such case should be planned after the definitive diagnosis of its position through various investigations. Orthodontic or surgical management has to be planned depending upon the root dilaceration.

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