

Management of Impacted Primary Maxillary Central Incisor: A Report

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Abstract

Impaction of primary tooth is a rare and unusual finding, particularly in the maxillary anterior segment. A variety of reasons are listed in literature for such condition. Here is a case report of impacted primary maxillary left central incisor in a 4-year-old child. The condition was diagnosed with the help of clinical examination, intraoral periapical radiograph, and cone-beam computed tomography. The tooth was surgically removed, and the patient was asked for periodic check-up.

Keywords: Impaction, maxillary anterior region, primary central incisor

INTRODUCTION

Tooth impaction is a condition in which a tooth fails to erupt into its normal functional position and remains unerupted beyond the expected time.^[1] The tooth impaction may be of primary or secondary variety. According to Sfasciotti *et al.*, primary impaction has to be distinguished from the secondary impaction.^[2] The former is a rare condition and the teeth had never erupted even if there was sufficient space. On the contrary, secondary impaction is relatively frequent and occurs as a result of ankylosis.^[3] Although unerupted or impacted tooth is a frequent finding in permanent dentition, impaction of the deciduous tooth is infrequent and only three cases were observed in a study of 30,000 panoramic radiographs done by Bianchi and Rocuzzo.^[3-5]

According to Bianchi and Rocuzzo, the criteria of primary impaction includes:^[3]

- Deep retention into the bone
- Absence of caries or restorations of the crown
- No resorption of the roots
- Frequent passing of the corresponding permanent tooth and possible retention and malposition of the corresponding adjacent permanent tooth.

Literature reports very few cases of primary tooth impaction, and the majority of these reports have described impaction of primary second molars. The management of such impacted

primary tooth includes various options ranging from simple observation to surgical removal or extrusion by tractional forces.^[6] The purpose of this report is to present a case of an impacted maxillary primary incisor in a 4-year-old child and its management.

CASE REPORT

A 4-year-old healthy girl presented with an unerupted maxillary left central incisor. The patient was the younger of two siblings, and her medical history was noncontributory. In addition, there was no history of trauma in the orofacial region. The extraoral examination showed a symmetrical face. Intraoral examination revealed that the patient was in her primary dentition with mesial step molar relation. Her oral hygiene was good and she did not have any carious lesion. The primary maxillary left central incisor was missing and there was a mild bulge on the alveolar ridge between the teeth 51 and 62 [Figure 1]. The color of the overlying soft tissue was normal. All other primary teeth were normal in alignment. Intraoral periapical radiograph showed impaction of tooth

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61 [Figure 2]. Radiological examination also revealed the presence of developing tooth germs on 11 and 21. Cone-beam computed tomography (CBCT) was advised to confirm the position of the unerupted incisor and its relation with the developing permanent central incisors. CBCT showed that the incisal edge of tooth 61 was apical to the cemento enamel junction of the adjacent teeth 51 and 62 [Figure 3]. Axial and section CBCT showed that the development of tooth germs

of 11 and 21 was consistent with the chronologic age of the patient [Figures 4 and 5].

The impacted tooth 61 was surgically extracted under local anesthesia [Figures 6-8].



Figure 1: Missing primary central incisor between 51 and 62.

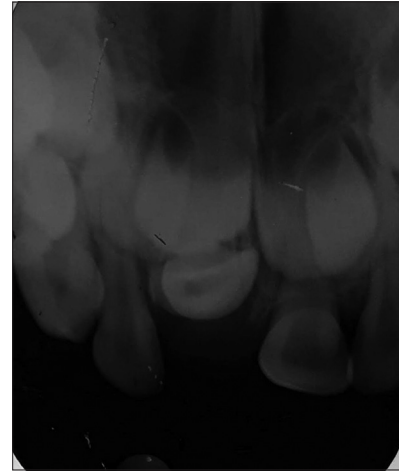


Figure 2: An intraoral periapical radiograph showed impaction of tooth 61.



Figure 3: Cone-beam computed tomography showing the incisal edge of tooth 61 was apical to the cemento enamel junction of the adjacent teeth.

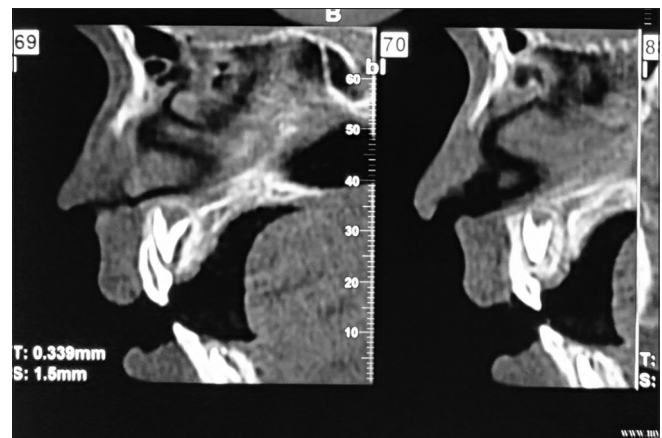


Figure 4: Axial and section cone-beam computed tomography confirmed the bony impaction of 61.

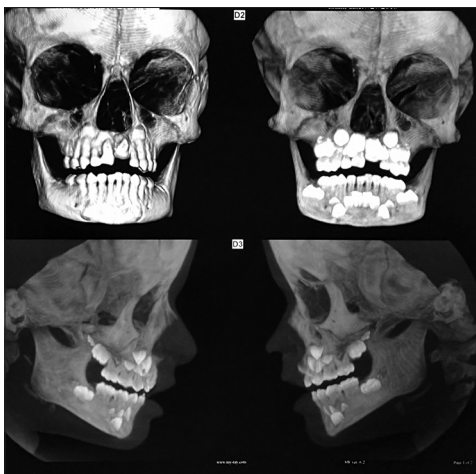


Figure 5: Another cone-beam computed tomography section showing impaction of 61.



Figure 6: Surgical extraction of 61 was done.



Figure 7: After extraction labial view.



Figure 8: After extraction proximal view.

The patient was asked for recall visit to monitor the eruption of her permanent teeth.

DISCUSSION

The impaction of primary central incisor is an unusual finding. The possible causes related to such impaction can be divided into local and systemic factors. Malposition and/or malformation of the tooth germ due to trauma, dentigerous cyst, odontogenic tumor such as myxofibrous hyperplasia and ameloblastic fibroma, odontomas, and ankyloses of the tooth have been proposed as local factors.^[7-11] Genetic factors of the tooth development may also result in tooth impaction. Systemic factors include alveolar cleft, Gardner's syndrome, and cleidocranial dysplasia.^[8,12] In this case, dilacerations of the root of the impacted tooth 61 were noticed after surgical removal. Trauma to the tooth germ could be a cause of such dilaceration and impaction although on asking the parents they could not remember any incidence of traumatic injury.

The treatment options for impacted primary teeth are many and mainly depend on the chronological age of the patient and the cause of impaction; the various treatment options are:^[6]

- Observation with or without surgical removal
- Removal of any mechanical obstruction if present
- Surgical exposure of the impacted tooth with or without application of tractional forces
- Extraction of impacted primary tooth.

In this case, the impacted primary maxillary left central incisor was surgically removed as it might interfere with the eruption of permanent successor. This treatment option was selected as there was no mechanical obstruction present, and considering the age of the patient and root development of the impacted tooth, the impacted tooth was not expected to erupt by its own. After surgical extraction of the impacted tooth, the patient was asked for periodic recall to observe the eruption of permanent successor.

CONCLUSION

Diagnosis of such impacted deciduous tooth should be done at earliest to provide proficient treatment modalities. Management of such cases should be done considering the cause of impaction, age of the patient, and radiological findings. A long-term follow-up is usually required to monitor the eruption of succedaneous tooth.

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.

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Conflicts of interest

There are no conflicts of interest.

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