

Surgical Management of Inverted Impacted Incisor in 10 year old patient: A Case Report

Vinay Thakur, Rupakshi Gupta, Shivalika Sama

Department of Pedodontics and Preventive Dentistry, Himachal Dental College, Sundernagar, Himachal Pradesh, India

Abstract

The most damaging sequelae of traumatic injuries to primary teeth are their effect on unerupted developing permanent dentition. Any injury to teeth of young child can have serious and long term consequences. Among the many malformations, dilaceration is particularly important as it requires a multidisciplinary approach. This case report reviews the restorative treatment proposed to reestablish the esthetics and function of the affected tooth of crown dilaceration in permanent maxillary incisor after trauma to their primary predecessors.

Keywords: Dilaceration, trauma, intrusion, impacted incisor

INTRODUCTION

Traumatic injury to primary teeth occurs with high frequency during the initial growth period as motor co-ordination is not well-developed. Studies have shown that approximately 30% of all children under the age of 7 years experience injuries to ≥ 1 of their primary incisors which mainly occur between the ages of 1 and 3 years.^[1] Thus, the child is exposed to traumatic episodes, which depends on the energy of the impact leading to various pathologic changes and damage to the permanent tooth may also be inflicted due to close proximity of the primary tooth root to its developing permanent successor.

Andreasen *et al.* described the most common sequelae to primary tooth trauma as yellow or white enamel discoloration, while yellowish brown discoloration of enamel with hypoplasia, crown dilacerations.^[2]

Disturbances in permanent tooth germs are latent complications that may be seen following all types of primary tooth injuries, especially intrusion, avulsion, and alveolar bone fracture. The trauma to the primary dentition which leads to crown dilacerations is usually avulsion or intrusion.^[3] Crown dilaceration of permanent teeth occurs due to the nonaxial displacement of the already formed hard tissue portion of the developing crown at an angle to their longitudinal axis due

Submitted: 03-Dec-2020 Accepted: 25-Sep-2021 Published: 11-Jan-2022

to trauma to the primary predecessors^[4] and constitutes 3% of traumatic injuries to developing teeth. It usually involves the maxillary incisors and less frequently their mandibular counterparts.^[5]

CASE REPORT

This is a case report of surgical removal of an inverted, impacted, and dilacerated maxillary central incisor that was esthetically substituted by removable partial denture.

A 10-years-old male patient accompanied by his father reported to the Department of Pedodontics and Preventive Dentistry, Himachal Dental College Sundernagar, Himachal Pradesh, India, with a chief complaint of noneruption of the upper left permanent central incisor. The patient revealed a history of a traumatic episode at an age of 3 years. On intraoral examination, the crown of unerupted incisor was palpable as a labial bulge high in the vestibular sulcus. A pre-operative IOPA #11 and #21 [Figure 1] followed by a panoramic radiograph demonstrated an inverted and impacted central incisor with the lingual surface of the crown directed labially, facing the

Address for correspondence: Dr. Vinay Thakur,
Department of Pedodontics and Preventive Dentistry, Himachal Dental
College, Sundernagar, Himachal Pradesh, India.
E-mail: dr.vinaythakur86@gmail.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Thakur V, Gupta R, Sama S. Surgical management of inverted impacted incisor in 10 year old patient: A case report. *Int J Pedod Rehabil* 2021;6:25-7.

Access this article online

Quick Response Code:



Website:
www.ijpedor.org

DOI:
10.4103/ijpr.ijpr_45_20

floor of the nose along with root dilaceration [Figure 2 and 3]. Orthodontic management was difficult to perform because of the unusual pattern along with position and direction of the impacted tooth, so surgical removal of the tooth was prescribed. Surgical removal of the tooth after informed consent was done under local anesthesia.

Surgical extraction was initiated by subperiosteal elevation of rectangular mucoperiosteal flap on the labial side by making sulcular incision and two releasing incision in the vertical direction distal to canines of both sides. After careful elevation of the flap, adequate amount of the bone was removed using the rotary cutting instrument. The impacted tooth was surgically exposed and found to be in an inverted position [Figure 4]. The tooth was sectioned using a bone cutting bur and was luxated with a periosteal elevator followed by the extraction of the tooth fragments [Figure 5]. Curettage was done followed by copious irrigation using betadine

and saline and a clean cavity was visible thereafter sutures were placed at the end of surgery to promote healing [Figure 6]. One week after the surgery, the patient was recalled, and the sutures were removed and a removable partial denture was given for esthetic and psychosocial reasons [Figure 7]. Periodic recall visits were advised.

DISCUSSION

The maxillary incisors have a major role on dental and facial esthetics of an individual.^[6] Trauma occurring at younger ages is more likely to affect only the crown of the permanent tooth, whereas at older ages, both the root and crown are likely to be affected.^[1] Intrusive injuries account for 4%–22% of damage to primary teeth.^[7] The type and degree of damage to



Figure 1: Preoperative Orthopantomogram.



Figure 2: Preoperative Intraoral periapical Radiograph.



Figure 3: Preoperative Intraoral Photographs.



Figure 4: View of the cavity during surgery.



Figure 5: Enucleated Tooth.



Figure 6: Sutures Placement after Surgery.



Figure 7: 7 RPD Delivered After 7 Days Follow Up.

the permanent tooth are related to the developmental phase of the permanent tooth germ at the time of intrusive injury to the primary tooth predecessor.^[1] The calcified portion of the permanent tooth germ is displaced in such a way that the remainder of the noncalcified part of the permanent tooth germ forms an angle to it.^[8] Dilaceration is an abnormal bend in the root or crown of a tooth and might occur anywhere along the length of the tooth, i.e., the crown, the cement–enamel junction, along the root and the root apex. Teeth with dilacerated crowns may erupt normally or buccally or palatally/lingually displaced.^[4] The most common type of dilaceration is that of a tooth root angulation combined with a reversal crown direction. The palatal aspect of the crown faces the labial side and the tooth is usually impacted. Becker has called this condition as classic dilaceration.^[9] The prognosis of these teeth is not favorable; usually all the teeth remain unerupted.

The prognosis of aligning an impacted dilacerated tooth mainly depends on the following factors: (1) the position and direction of the impacted tooth, (2) the degree of root formation, (3) the degree of dilaceration, and (4) the availability of space for the impacted tooth.^[10]

A treatment alternative for an impacted central incisor includes:

1. Extraction of the impacted central incisor and restoration with a bridge or an implant later when growth had ceased
2. Surgical exposure, orthodontic space opening, and traction of the impacted central incisor into the proper position.^[11]

An impacted central incisor in an inverted position high in the vestibule poses a clinical problem because of its difficult location thus the treatment involved a surgical extraction followed by the restoration with partial denture placement for esthetical concern until growth is ceased which will then be replaced by fixed prosthesis or implant.

CONCLUSION

This report describes a rare case of dilaceration which is one of the sequelae to primary tooth trauma. Impacted maxillary central incisors have a major effect on the dental and facial aesthetics of an individual. The treatment of dilacerated maxillary incisor impaction should start as early as possible, ensuring the overall well-being and esthetical concern of the patient.

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.

REFERENCES

1. Altun C, Cehreli Z, Güven G, *et al.* Traumatic intrusion of primary teeth and its effects on the permanent successors: A clinical follow-up study. *Oral Surg Oral Med Oral Pathol Radiol Endod* 2009;107(4):493-8.
2. Andreasen JO, Sundström B, Ravn JJ. The effect of traumatic injuries to primary teeth on their permanent successors. I. A Clinical and histologic study of 117 injured permanent teeth. *Scand J Dent Res* 1971;79:219-83.
3. Andreasen J, Andreasen FM, Andersson L. Textbook and color atlas of traumatic injuries to the teeth. 4th ed. Sundernagar: Vinay Thakur; 2021. p. 553.
4. Mellara T, Filho P, Queiroz A, *et al.* Crown dilaceration in permanent teeth after trauma to the primary predecessors-Report of three cases. *Braz Dent J* 2012;23(5):591-6.
5. Margakis MG. Crown dilaceration of permanent incisors following trauma to their primary predecessors. *J Clin Pediatr Dent* 1995;20(1):49-52.
6. Nawaz MKK, Sivaraman GS, Santham K. Surgical Management Of An Inverted And Impacted Maxillary Central Incisor - Case Report. *J West Afr Coll Surg* 2015;3(5):84-9.
7. Gurunathan D, Murugan M, Somasundaram S. Management and Sequelae of Intruded Anterior Primary Teeth: A Systematic Review. *Int J Clin Pediatr Dent* 2016;9(3):240-50.
8. Topouzelis N, Tsaousoglou P, Pisoka V, *et al.* Dilaceration of maxillary central incisor: A Literature Review. *Dent Traumatol* 2010;26:427-33.
9. Walia PS, Rohilla AK, Choudhary. Review of Dilaceration of Maxillary Central Incisor: A Multidisciplinary Challenge. *Int J Clin Pediatr Dent* 2016;1(9):90-8.
10. McNamara T, Woolfe SN, McNamara CM. Orthodontic management of a dilacerated maxillary central incisor with an unusual sequel. *J Clin Orthod* 1998;32:293-7.
11. Thosar N.R, Vibhute P. Surgical and orthodontic treatment of an impacted permanent central incisor: A case report. *J Indian Soc Pedod Prev Dent* 2006;24(2):100-3.