



Intrusion of Central Incisor Into the Nasal Cavity – A Rare Case of Neglected Dental Trauma Associated With Seizure Disorder

Deepak Sangolikar

Reader, Dept. Of Oral & Maxillofacial Surgery, Purvanchal Institute of Dental Sciences, GIDA, Gorakhpur, U.P

Neha Bhutani

Reader, Dept. Of Periodontics Purvanchal Institute of Dental Sciences, GIDA, Gorakhpur (U.P)

ABSTRACT

Intrusion of Central incisor into the nasal Cavity – A rare case of neglected dental trauma associated with seizure disorder

Childhood traumatic injuries are typically associated with motor vehicle accidents, sports or other recreational activities. However seizure disorder or other compromising medical conditions may precipitate dental trauma. This paper describes a case of unviable alveolar repositioning of an intruded tooth into the nasal cavity because of fall following seizure.

KEYWORDS :

Introduction

Dental trauma can result in number of injuries involving the tooth and supporting structures. Six types of luxations and seven types of tooth fractures have been described and used to classify traumatic dental injuries. ¹ Intrusive luxation is one of the most severe types of dental traumatic injury. Intrusion is defined as dislocation of tooth in an axial direction into the alveolar bone.² This injury is characterized by comminution of the alveolar socket and expansion of alveolus to permit the new position of teeth.³ upon percussion, the intruded tooth elicits a metallic sound similar to an ankylosed tooth – distinguishing it from an unerupted tooth. The dislocation is considered complete when tooth is enveloped by surrounding tissue or partial when incisal border of crown is visible (Andreassen, 1984). It comprises 0.5% - 1.9% of all traumatic injuries in the permanent dentition and 5% to 12% of dental luxations.⁴

In falls wherein the impact has an axial component, the tooth will be intruded due to labial curvature of root and intrusion will result in axial or labial displacement. Oral luxation causes rupture of gingival fibres and periodontal ligament on palatal aspect of root as well as compression on the periodontal ligament on the labial aspect. Detachment of gingival fibres allows invasion of oral microorganisms along the root surface.⁵

This case report present with the case of severe intrusive luxation of maxillary central incisor into the nasal cavity which was not detected at the time of initial trauma but as a late complication.

Case report

A 22 year old male patient was referred from dept. of orthodontics to oral and maxillofacial surgery, Purvanchal institute of dental sciences Gorakhpur with the chief complaint of malaligned tooth. Patient also stated that front tooth had moved partially inside the nose (fig 1.).



Fig - 1. Intraoperative view revealing protruding root apex

Medical history revealed patient is a diagnosed epileptic and is on medication since 10 years. Approximately 10 years prior to the current presentation, the patient had sustained injury to the upper front region due to epileptic attack and was admitted to the local hospital and only primary care provided to the patient.

Extraoral examination revealed no signs of injury such as swelling, colour changes of skin, face and head asymmetry was also not seen. No abnormalities were observed when the facial bones and mandible were palpated to assess mouth opening. Intraoral examination revealed intrusion of permanent maxillary incisors and right central incisor root into the nasal vestibule. The tooth was not mobile but was tender to palpation and percussion (fig 2.).



Fig-2. Intraoperative view revealing intruded maxillary right central incisor

Examination of the right nostril revealed the protruding root apex of the maxillary right central incisor into the nasal cavity. Additionally the maxillary left lateral, left central and right lateral tested was being vital according to percussion and electrical pulp testing. Due to presence of external root resorption with maxillary right central incisor tooth was extracted under local anaesthesia. (Fig 3,4.)



Fig - 3 .Intraoral view depicting extraction of maxillary right central incisor done.



**Fig - 4.Extracted central incisor showing external root re-
sorption**

Simple interrupted sutures was placed (Fig – 5). A course of antibiotics and analgesics was prescribed.

Follow up examinations were carried out and the patient was asymptomatic (Fig – 6).



Fig – 5.Intraoral view after suturing the flaps



Fig - 6. Postoperative intranasal view

Discussion

Intrusive dental injuries usually involves maxillary teeth and has been one of the most serious dental injuries with difficult treatment.⁶ tooth most vulnerable to trauma is maxillary central incisor which sustains 80% of all dental injuries.⁷ Canines are rarely involved because of medial pillar of maxilla which is difficult to penetrate. Unless the impact force is considerable, the posterior teeth are seldom involved.⁸ The degree of intrusion can be divided into three grades (Von Arx, 1995). Grade I mild partial intrusion in which more than 50% of crown is visible. Grade II moderate partial intrusion in which less than 50% of crown is visible. Grade III sever complete intrusion.

In the present case degree of intrusion was Grade I for maxillary right central incisor with displacement into the nasal cavity and external resorption. Left central incisor was also slightly intruded and rotated due to trauma. Because of intrusion of maxillary anteriors slight supraeruption of mandibular anteriors was also seen.

In a retrospective study of etiology and pathogenesis of traumatic injuries, Andreason found that out of 2,239 injured permanent teeth only 3% was luxated intrusively.⁹

A patient presenting with facial trauma predict multiple injuries. Practitioners who treat patients with compromised neuromuscular conditions must be aware that these patients are predispose to maxillofacial injuries.¹⁰ In this case also luxation of maxillary central incisor into the nasal cavity was not detected at the time of initial trauma and was not treated following the primary care but was diagnosed for it after 10 years as a delayed complication of long standing dental trauma. Parental counselling on the topic of mouth guard, helmet face mask or shield for seizure susceptible patient should be provided.

Intrusion is considered to have poorest prognosis of all dental trauma because it significantly alters the pulp and damages the pulp, periodontal ligament and alveolar bone.¹¹In this case also external resorption of maxillary incisor was seen.

The current management strategies for intrusive injuries includes, passive repositioning, immediate surgical repositioning and repositioning with dental traction by orthodontic devices. In cases of den-toalveolar trauma with extreme loss of bone, repositioning of intruded tooth is difficult. Orthodontic treatment was contraindicated in our case because of patient's inability to tolerate outpatient dental treatment. The poor long term prognosis of affected tooth due to external resorption of maxillary central incisor in conjugation with patient's complex medical history dictated the definitive removal of the tooth displaced in nose as the treatment of choice.

Conclusion

There is need to involve the dental professionals in the initial assessment following maxillofacial or dental trauma in order to identify the effects of trauma on the dentition and to correctly deliver the required treatment.

References

1. JO Andreasen, FM Andreasen , L Andreasen. Textbook and color atlas of traumatic injuries to the teeth, Blackwell, Oxford UK, 4th edition, 2007.
2. JO Andreasen, LK Bakland, RC Matras , F M Andreasen . traumatic intrusion of permanent teeth . part I. An epidemiological study of 216 intruded permanent teeth. Dent traumatol.2006; 22: 83-89.
3. Andreasen JO: Luxation of permanent teeth due to trauma: a clinical and radiographic follow-up study of 189 injured teeth. Scand J Dent Res.1970;78:273-86.
4. G Tsilingaridis, B malmgren, JO Andreasen . Intrusive luxation of 60 permanent incisors: a retrospective study of treatment and outcome.Dental Traumatol.2012; 28: 416 – 22.
5. M Gupta. Intrusive luxation in primary teeth – review of literature and report of a case. Saudi Dent J.2011; 23: 167–76.
6. C Oulis, G Vadiakas, G Siskos. Management of intrusive luxation injuries. Endod Dent Traumatol. 1996; 12:113–119
7. KC Trabert, AA Caput, RM Abou. Tooth fracture: a comparison of endodontic and restorative treatments. J Endod. 1978;4:341–45.
8. TC Tung, YR Chen, CT Chen. Full intrusion of a tooth after facial trauma. J Trauma. 1997;43:357–59.
9. JO Andreasen.: Etiology and pathogenesis of traumatic dental injuries: a clinical study of 1298 cases. Scand J Dent Res. 1970;78:329- 42.
10. BS Martin. Traumatic intrusion of maxillary permanent incisors into the nasal cavity associated with a seizure disorder: report of a case. Dent Traumatol.2003;19:286–88.
11. AW Chan, SP Gary. Different treatment outcomes of two intruded permanent incisors—a case report, Dent Traumatol.2001;17: 275–80.