*SVOA Dentistry*

ISSN:2753-9172

ScienceVolks Open Access

Case Report

# A Rare Case of Inverted Impaction of Maxillary Central Incisor With U-Shaped Dilaceration of Middle 1/3rd

**Preet Kanwal Ahluwalia[1]*, Amaninder Singh[2], Guneet Kaur Dhillon[3], Mohanjee Pandey[4], Prabhjot Kaur[5], Sashenka Singh[6], Arushi[7] and Jaspreet Kaur[8]**

[1] *HOD & Professor, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[2] *Professor, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[3] *Reader, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[4] *PG Resident, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[5] *Senior Lecturer, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[6] *PG Resident, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[7] *PG Resident, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

[8] *PG Resident, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

***Corresponding Author:** Mohanjee Pandey, PG Resident, Department of Oral and Maxillofacial Surgery, National Dental College and Hospital Derabassi, Punjab, India.*

DOI: https://doi.org/10.58624/SVOADE.2023.04.0148

***Received:** August 22, 2023* ***Published:** September 07, 2023*

## Abstract

Impaction of maxillary central incisor is not frequently reported in literature. Impacted maxillary incisors are rare and detrimental to aesthetic problems in permanent dentition stage. The term dilaceration describes an abrupt deviation of the long axis of the crown or root portion of a tooth. Dilaceration generally occurs following trauma to the apices of deciduous dentition, which lies is close proximity to the permanent tooth buds.

***Keywords:** Impacted tooth, Vertical, Inverted, Maxillary Central Incisor, Dilaceration.*

## Introduction

According to Archer, "A tooth which is completely or partially unerupted and is positioned against another tooth and bone or soft tissue, so that it's further eruption is unlikely."

The reasons of unerupted tooth may be due to presence of odontoma, supernumerary teeth, cysts, crown or root malformation, or ectopic development of tooth germ.[1]

Inverted tooth is which where tooth is positioned upside down and reversed its position.

Other possible causes of non-eruption of maxillary central incisors are nonvital or ankylosed primary teeth, early extraction or loss of primary teeth, mucosal barriers in the path of eruption that acts as a physical barrier to eruption.[2]

Dilaceration is sequel of trauma and is related to the eruption failure of maxillary central incisor. It can be mild, severe, moderate and possesses capabilities to alter the eruptive pathway of the the tooth leading to impaction. According to aspects of tooth impaction are listed by Bishara in an extensive review, trauma isn't included but the abnormal position of the tooth bud that might be due to trauma is referred by him.

Utmost care is taken while moving an impacted tooth during orthodontic treatment. To get the best functional and aesthetic results it must be managed in collaboration with orthodontist. [3]

Orthodontists hesitate in alignment of an impacted incisor with severe dilaceration as there are chances of failure because of ankylosis, resorption of external root, exposure of root post orthodontic retraction. According to Mac Phee, the incidence of impacted maxillary central incisor in the age group of 5 to 12 years has been reported as 0.13%. Prognosis will depend upon the ankylosis, external root resorption, and root exposure after traction. This article presents a case of a vertically inverted impacted maxillary right central incisor with U shaped dilaceration of the middle 1/3rd. This case was surgically managed.

## Case Report

A 11-year old female patient reported to the department of Orthodontics and dentofacial orthopaedics, National Dental College and Hospital, Dera Bassi, SAS Nagar, Punjab, India, with chief complaint of aesthetics with respect to upper front region of jaw. On radiographic examination of OPG revealed the inverted right maxillary central incisor in the vicinity of anterior nasal spine and decided to refer to Department of Oral and Maxillofacial Surgery for surgical removal. To determine the exact location and three dimensional configuration of s impacted right maxillary central incisor, we used CBCT for this patient. CBCT revealed the exact location of 11 i.e. CEJ of 11 lies mesial to apical 1/3rd of root of 12 and cusp tip of 11 lies mesio-labial to root apex of 13. Incisal edge lies in proximity to anterior nasal spine with thinned nasal floor. The patient was informed regarding the presence of this impacted tooth and was advised the surgical removal of the tooth. The surgery was carried out in 2% Lignocaine local anaesthetic with 1:80,000 Adrenaline. Anterior releasing incision was given mesial to 21 and crevicular incision till 15. Triangular flap was reflected using molt's periosteal elevator till the anterior nasal spine. Bulge is palpated mesial to apical 1/3rd of 12. With help of round bur number 8 the overlying bone was removed and tooth is exposed then with help of 701 bur gutter was made along the crown of tooth. Afterwards sectioning was done through the cervical 3rd of crown and crown is removed then with help of Coupland elevator the root is luxated and removed. Proper curettage and irrigation of socket is done with povidone iodine solution. Closure was done in horizontal mattress pattern using 3-0 silk. Follow up was done in 24hours, 48 hours, 72hours and after one month. There were no complications.

***Fig 1.*** *OPG.*

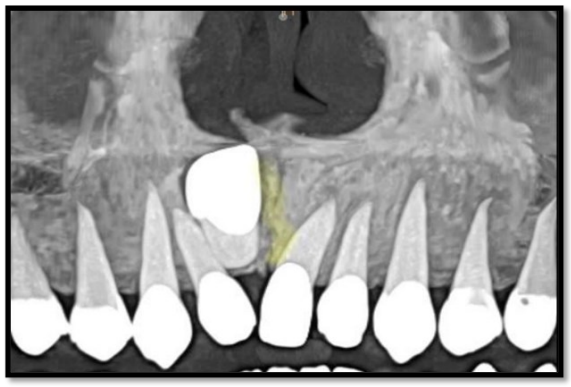

***Fig 2.*** *Distance to occlusal plane.*

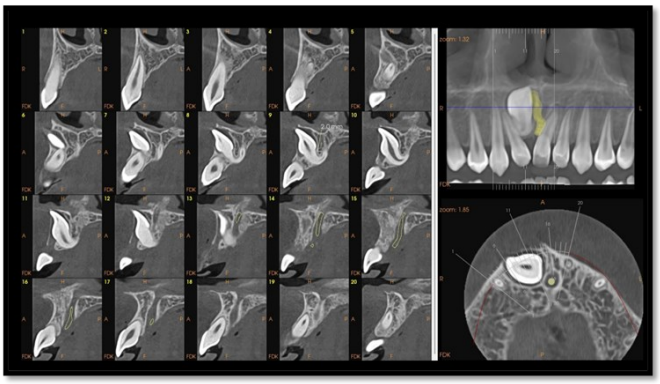

***Fig 3.*** *Cross sections.*

***Fig 4.*** *Pre-operative intraoral picture.*

***Fig 5.*** *Incision.*

***Fig 6.*** *Mucoperiosteal flap reflected.*

***Fig 7.*** *Tooth is exposed.*

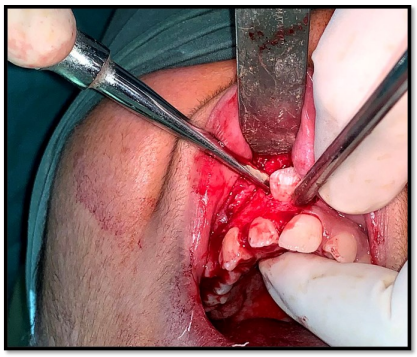

***Fig 8.*** *Luxation.*

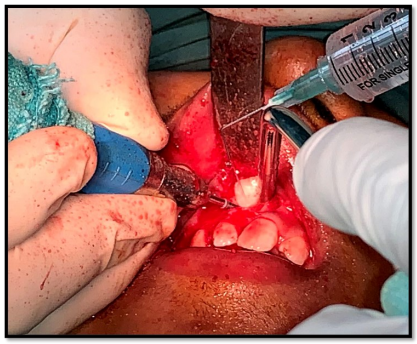

***Fig 9.*** *Sectioning of root.*

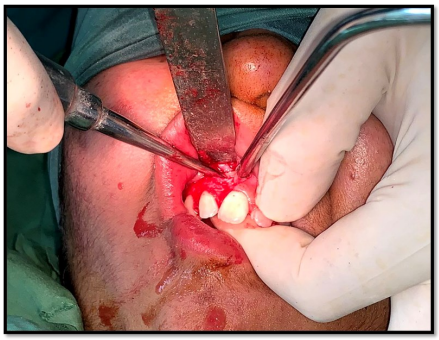

***Fig 10.*** *Luxation of root.*

***Fig 11.*** *Removal of sectioned root.*

***Fig 12.*** *Curettage & irrigation of socket.*

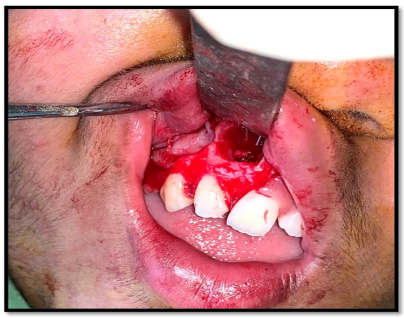

***Fig 13.*** *Socket.*

***Fig 14.*** *Closure.*

***Fig 15.*** *Extracted tooth.*

***Fig 16.*** *Extracted tooth.*

## Discussion

Impacted maxillary incisor occur less frequently than impacted maxillary canines, but it causes concern to parents with children in the early mixed dentition stage of growth because of non-eruption of the anterior tooth. [4] However, Impaction with severely dilacerated root is seldom reported, especially for the inverted maxillary incisor, probably due to the clinical difficulty of bringing the dilacerated tooth into proper position. [5]

Traumatic injuries and obstructive causes are believed to have led to the impaction of maxillary central incisors; improper oral habits, such as nail biting and finger sucking, may also contribute to tooth impaction. [6]

The cause of incisor dilaceration has not yet been clearly established. Smith and Winter attributed the dilacerated permanent incisor to traumatic injury of the primary predecessor, leading to root dilacerations. [7]

Dilaceration will affect the methods of treatment and the prognosis of the impacted tooth; therefore, it is significant to ensure the roots anatomical morphology of the impacted tooth before the treatment plan is made. [8] In addition to OPG, CBCT in cases of impacted teeth is helpful for locating the exact 3-dimensional positions of these teeth, while eliminating the super impositions inevitably seen in plane film radiography. We use CBCT to examine the relationship between the impacted incisor and tissues around it.

## Conclusion

The inverted impacted maxillary central incisor is rare case reported in literature. Orthodontists hesitate in alignment of an impacted incisor with severe dilaceration as there are chances of failure because of ankylosis, resorption of external root, exposure of root post orthodontic retraction. Mostly it is associated with dentigerous cyst or an odontoma. But this is unusal case of inverted impacted maxillary central incisor without any pathology.

## Conflict of Interest

The authors declare no conflict of interest.

## Patient Consent

Obtained.

## References

1. Hattab, F.N., 2014. Double talon cusps on supernumerary tooth fused to maxillary central incisor: review of literature and report of case. *Journal of clinical and experimental dentistry*, *6*(4), p.e400.
2. Becker, A., 2012. General principles related to the diagnosis and treatment of impacted teeth. *Orthodontic Treatment of Impacted Teeth*, pp.1-9.
3. Bishara, S.E. and Ortho, D., 1992. Impacted maxillary canines: a review. *American journal of orthodontics and dentofacial orthopedics*, *101*(2), pp.159-171.
4. Bayram, M., Ozer, M. and Sener, I., 2007. Maxillary canine impactions related to impacted central incisors: two case reports. *J Contemp Dent Pract*, *8*(6), pp.72-81.
5. Singh, H., Kapoor, P., Sharma, P., Dudeja, P., Maurya, R.K. and Thakkar, S., 2018. Interdisciplinary management of an impacted dilacerated maxillary central incisor. *Dental Press Journal of Orthodontics*, *23*, pp.37-46.
6. Christensen, J.R. and Fields, H.W., 2013. Space maintenance in the primary dentition. *Pediatric Dentistry-Infancy Through adolescence. 5th ed. St Louise, MO: Elsevier Inc*, p.379.
7. Shrestha, A., Marla, V., Shrestha, S. and Maharjan, I.K., 2015. Developmental anomalies affecting the morphology of teeth–a review. *RSBO Revista Sul-Brasileira de Odontologia*, *12*(1), pp.68-78.
8. Kapila, S.D. and Nervina, J.M., 2015. CBCT in orthodontics: assessment of treatment outcomes and indications for its use. *Dentomaxillofacial radiology*, *44*(1), p.20140282.
9. Chhabra, S., Chhabra, N. and Dhillon, G., 2012. Inverted and impacted maxillary third molar: removal by lateral transposition method. *Int J Exper Dent Sci*, *1*, pp.26-29.

10. Peterson, L.J., Ellis III, E., Hupp, J.R. and Tucker, M., Contemporary Oral & Maxillofacial surgery: 2002. *Principles of management of impacted teeth*, p.185.

11. Archer WH. Impacted teeth : Oral and maxillofacial surgery. Philadelphia : WB Saunders 1975; 250-390.

**Citation:** Ahluwalia PK, Singh A, Dhillon GK, Pandey M, Kaur P, Singh S, Arushi, Kaur J. A Rare Case of Inverted Impaction of Maxillary Central Incisor With U-Shaped Dilaceration of Middle 1/3rd. *SVOA Dentistry* 2023, 4:5, 186-190.