International Journal of Research in Medical Sciences
*Singh A et al. Int J Res Med Sci. 2025 Jun;13(6):2617-2619*
www.msjonline.org

pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20251654

**Case Report**

# Surgical management of horizontally impacted mandibular canine in a 10 years old child

**Aparna Singh*, Smriti Shikh, Sagarika, Arvind Kumar, Nehal Dipti, Debadyuti Ghosh**

Department of Pediatric and Preventive Dentistry, Magadh University, Kankarbagh, Patna, Bihar, India

**Received:** 28 February 2025
**Revised:** 04 April 2025
**Accepted:** 09 April 2025

***Correspondence:**
Dr. Aparna Singh,
E-mail: aparna.2025@rediffmail.com



## ABSTRACT

Impacted tooth refers to a tooth that fails to erupt into the dental arch within a specific time. Teeth frequently impacted are—third molars, maxillary canines, maxillary and mandibular premolars and maxillary central incisors. Failure of eruption of the mandibular canine is an unusual event. It has been suggested that eruption disturbances of a mandibular canine are most often caused by local factors such as mechanical obstruction (supernumerary tooth/cyst/tumour), insufficient space in the dental arch and tooth-arch size discrepancy. This case report presents surgical management of an impacted permanent mandibular canine of a 10 years old boy under local anaesthesia.

**Keywords:** Impacted canine, Horizontal impaction, Children

## INTRODUCTION

Altered tooth eruption is a clinical condition characterized by failure of the tooth to emerge in the appropriate position. This may lead to a tooth impaction, translocation or even transmigration Tooth impaction is a condition defined by the failure of a tooth to erupt into the dental arch within the physiological and time limits of normal tooth eruption.[1-3] The prevalence of maxillary canine impaction is between 0.8 and 5.2%, and it is the second most common tooth involved in impaction after the mandibular third molars.[4,5] Impacted maxillary canines are frequently displaced palatally at 61.4%, followed by 34.1% in line with the arch, and the remaining 4.5% on the buccal side.[6] There are several etiologic factors for canine impactions have been proposed - primary reasons are long path of eruption and genetic influence. Canine plays an important role in oral cavity as it gives facial appearance, smile and facial dental aesthetics, arch development, and occlusion maintenance. It is one of the most commonly seen transposed teeth, ectopically positioned with either the lateral incisor or the first premolar. Diagnosis of canine impaction may be made by clinical examination and by radiograph. The most desirable approach for managing impacted maxillary canines is early diagnosis and interception of potential impaction. However, in the absence of prevention, clinicians should consider other treatment options such as surgical repositioning, surgical-orthodontic approach Early diagnosis and treatment are essential to prevent complications.

## CASE REPORT

A 10 years old male reported to Department of Pedodontics and Preventive dentistry with a chief complaint irregular placed teeth in the lower front region of jaw since 1 year. Diagnostic records including the case history, clinical examination, orthopantomogram (OPG), study models and intraoral and extraoral photographs, along with cone beam computed tomography (CBCT) were taken. On extraoral examination, he had a convex profile, competent lips and normal nasolabial angle. On intraoral examination, he had class I molar relation bilaterally. OPG and CBCT revealed horizontally impacted canine on the right side and in a mesio distal fashion such that crown is positioned mesially and root is positioned distally in the arch. Over retained deciduous canine was present on the right side.

**Figure 1: Pre-operative clinical view of impacted canine.**

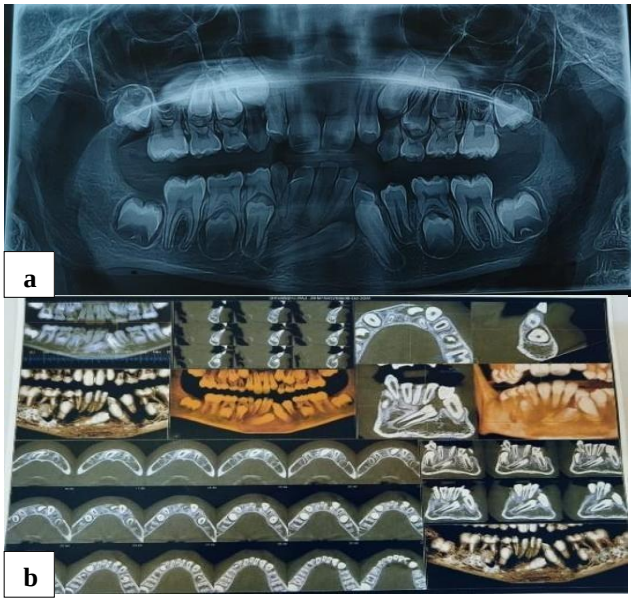


**Figure 2 (a and b): Pre-operative OPG and CBCT.**

**Figure 3: Incision given and mucoperiosteal flap raised.**

After ascertaining the position of the impacted right mandibular canine from IOPA, OPG and the clinical bulge. Inferior alveolar nerve and mental nerve block was given. Incision was given with the help of no. 12 BP blade and BP handle. Mucoperiosteal flap was reflected with the help of periosteal elevator in the left labial mucosa region. Bone overlying the canine was removed with the help of lindermann bone cutting bur and straight hand piece and micromotor copious irrigation was done with normal saline. The tooth was then luxated with the help of cryer elevator and then removed with mandibular anterior forceps. After attaining the haemostasis mersilk 1.0 suture was placed for 7 days. Patient was recalled after 7 days and suture was removed and betadine irrigation was done. Patient was recalled after 3 months clinical and radiographic evaluation was done.

**Figure 4: Extracted impacted mandibular canine.**

**Figure 5: Suture given.**

**Figure 6: Follow up OPG after 3 months.**

## DISCUSSION

Canine teeth play an important role in establishing proper dental arch form as well as in aesthetics. Failure of eruption of the mandibular canine is an unusual event.[7] Mandibular canine impaction is regarded as a much rarer phenomenon

and there are limited numbers of studies revealing its frequency of occurrence.[8] Grover and Lorton found only 11 impacted canines (0.22%) in the mandible in 5000 individuals.[9] Chu et al reported five mandibular impacted canine (0.07%) teeth in 7486 patients.[10] A study by Rohrer examining 3,000 patients radiographically found 62 impacted maxillary canines (2.06%) and only three impacted mandibular canines (0.1%), in a 20:1 ratio.[11] In another study by Aydin et al involving 4500 Turkish patients, the incidence of mandibular canine impaction was 0.44%.[12] Definitely, maxillary canine impaction is more frequent than is mandibular canine impaction.[12,13] The mandibular canines are affected by pathology in a lower ratio than the third molars and premolars. However, some authors reported few cases of dentigerous cyst, squamous odontogenic tumors, and ameloblastoma which were associated with impacted mandibular canine teeth.[14-16] The management of impacted canines is important as impacted canines can lead to significant esthetic dilemmas and functional complications to the patient. In this case report, management of impacted maxillary canine is described which was successfully performed by surgical extraction. Different treatment methods can be used for impacted maxillary and mandibular canines, but Orthodontic extrusion was the treatment of choice to align the maxillary canines, whereas orthodontic extrusion and transalveolar transplantation were applied most frequently to treat impacted mandibular canines. Extraction of an impacted canine was performed more often in the mandible. A successful outcome is determined via well-planned and carefully executed orthodontic and surgical treatment, in relation to the location and development of the impacted canine. Early diagnosis is important in facilitating spontaneous canine eruption and successfully implementing transalveolar transplantation.

## CONCLUSION

Impaction of the canines is a manageable abnormality which is highly dependent on the timing and localization of the displaced tooth. Early detection will give the upper hand to dentist by either prevention through extraction of deciduous canines or intercepting via assistant devices to create more space. The presence of over-retained mandibular deciduous canine or missing permanent canine should always be clinically and radiographically investigated. Before extraction, care must be taken to administer proper anaesthesia on the side from which the extraction has to be carried out.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: Not required*

## REFERENCES

1. Sajnani AK, King NM. Impacted mandibular canines: Prevalence and characteristic features in southern Chinese children and adolescents. J Dent Child. 2014;81:3-6.
2. Abron A, Mendro RL, Kaplan S. Impacted permanent maxillary canines: Diagnosis and treatment. N Y State Dent J. 2004;70:24-8.
3. Yavuz MS, Aras MH, Büyükkurt MC, Tozoglu S. Impacted Mandibular Canines. J Contemp Dent Pract. 2007;8:78-85.
4. Pearson MH, Robinson SN, Reed R, Birnie DJ, Zaki GA. Management of palatally impacted canines: the findings of a collaborative study. Eur J Orthod. 1997;19(5):511-5.
5. Suri L, Gagari E, Vastardis H. Delayed tooth eruption: pathogenesis, diagnosis, and treatment. a literature review. Am J Orthod Dentofac Orthop 2004;126(4):432-45.
6. Husain J, Burden D, McSherry P. Management of the palatally ectopic maxillary canine. Fac Dent Surgery, R Coll Surg Engl. 2016;1-8.
7. Camilleri S, Scerri E. Transmigration of mandibular canines-A review of the literature and a report of five cases. Angle Orthod. 2003;73:753-62.
8. Aydin U, Yilmaz HH, Yildirim D. Incidence of canine impaction and transmigration in a patient population. Dentomaxillofac Radiol. 2004;33:164-9.
9. Grover PS, Lorton L. The incidence of unerupted permanent teeth and related clinical cases. Oral Surg Oral Med Oral Pathol. 1985;59:420-5.
10. Chu FCS, Li TKL, Lui VKB, Newsome PRH, Chow RLK, Cheung LK. Prevalence of impacted teeth and associated pathologies - a radiographic study of the Hong Kong Chinese population. Hong Kong Med J. 2003;9:158-63.
11. Fujita Y, Takahashi T, Maki K. Orthodontic treatment for an unerupted and severely rotated maxillary central incisor. A case report. Eur J Paediatr Dent. 2008;9:43-7.
12. Aydin U, Yilmaz HH, Yildirim D. Incidence of canine impaction and transmigration in a patient population. Dentomaxillofac Radiol. 2004;33:164-9.
13. D'Amico RM, Bjerklin K, Kurol J, Falahat B. Long-term Results of Orthodontic Treatment of Impacted Maxillary Canines. Angle Orthod. 2003;73:231-8.
14. Monteil RA, Terestri P. Squamous odontogenic tumor related to an unerupted lower canine. J Oral Maxillofac Surg. 1985;43:888-95.
15. Liposky RB. Decortication and bone replacement technique for the treatment of a large mandibular cyst. J Oral Surg. 1980;38:42-5.
16. El-Hakim IE, El-Khashab MM. Peripheral and Mural Ameloblastoma in the mandibular canine region of a 13- year-old boy. J Oral Maxillofac Surg. 2000;58:1150-5.

**Cite this article as:** Singh A, Shikh S, Sagarika, Kumar A, Dipti N, Ghosh D. Surgical management of horizontally impacted mandibular canine in a 10 years old child. Int J Res Med Sci 2025;13:2617-9.