

IMPACTED CANINE – AN ORTHODONTIC APPROACH

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Abstract

Maxillary canine impaction is next common to mandibular third molar impaction; palatal canine impaction is more common than buccal canine impaction. If the canine is not dis-impacted it can lead to root resorption or any cystic lesion. Canine has a major role in smile aesthetic and functional movements of teeth.

Key Words: - Forced eruption, Impacted canine, Piggy back technique.

Introduction

Impaction refers to failure of a tooth to emerge into the dental arch. The etiology of impaction is multifactorial. Some of the causes are: genetic predisposition, developmental anomalies, syndromes, inadequate arch space. Thick fibrous gingival tissue has also been reported as one of the causative factor. Dental impaction has been reported to affect as much as 25% to 50% of the population.¹ The diagnosis and treatment of this problem usually requires the expertise and cooperation of the general practitioner, the pediatric dentist, the oral surgeon, and the Periodontist, as well as the orthodontist.

Impacted tooth is defined as tooth whose roots are 2/3rd or fully developed but nevertheless expected to erupt spontaneously. Maxillary canine impaction is next common to mandibular third molar impaction and mandibular second premolar is second to maxillary canine impaction. In maxillary canine impaction, palatal canine impaction is more common than buccal canine impaction. {Jacoby 3:1}. But Oliver 1989 showed Asians may suffer from buccally impacted canines more frequently than from palatally impacted canines. Females affected more than males.

Evidences

Becker A, Smith P, Behar H 1981², impacted canines are more common where the lateral incisor is missing or diminutive.

Ericson S, Kurol J 1986³, 1.7 % maxillary canines are impacted, 6:1 palatal: buccal ratio.

Ericson S, Kurol J 1988⁴, 785 of impacted canines had normal eruption following removal of deciduous canine.

Case Report

A male patient aged 15 years reported to the Department of Orthodontics and Dentofacial Orthopaedics, Teerthanker Mahaveer Dental College & Research Center, with chief complaint of missing tooth in the upper left front teeth region.

On clinical examination permanent canine was missing, on radiographic examination canine was found buccally impacted. Molar relation and canine relation were class II on the left side and class I relation on the right side. Patient had peg shaped left lateral incisor. Moderate crowding was present in the lower arch.

Treatment plan

1. Levelling and alignment
2. Maintenance of space for disimpaction of canine
3. Surgical exposure followed by orthodontics force application for dis-impaction and alignment of upper left canine

Treatment progress

Treatment initiated with 0.022" slot MBT prescription bracket. After levelling and alignment open coil spring was placed to open up the space for forced eruption of canine. Once sufficient space is created, open coil spring was left passively to maintain the created space. Canine was surgically⁵ exposed and Begg's bracket was bonded over the buccal surface with all precautions to avoid any moisture contamination. Poor bonding results due to moisture contamination can cause bracket de-bonding. Piggy Back Technique using flexible arch wire is used to erupt the canine while a rigid arch wire is maintained in the main slot of all the brackets and accessory wire (NiTi 0.016) was placed in piggy back fashion for the eruption of canine and 0.019 X 0.025 stainless steel arch wire provides stability and maintains the shape of the arch.



Figure 1 A: - Extra-oral Pre-treatment Photographs



Figure 1 B: - Intra-oral Pre-treatment Photographs



Figure 2 a: - Placement of Open Coil Spring



Figure 2 b: - Surgical Exposure of Impacted Canine

Mid Treatment Photographs



Figure 3 a: - Begg's Bracket bonded and Piggy Back Wire Places

Conclusion

Management of the impacted canine is one of the greatest challenges for orthodontist. Success of the treatment depends upon patient cooperation, Age of patient, Proper diagnosis, Level of canine impaction, Inclination and Depth of impaction, Amount of root formation, Type of exposure of tooth, Amount of bone removal, Type of attachment, Orthodontic traction. All these parameter plays important role when managing impacted canines to achieve good canine alignment in the arch with canine guided occlusion, gingival level, and Integrity of periodontium.



Figure 3 b & c: - Impacted canine aligned in the arch



Figure 4: - Post Treatment Intraoral Photographs



Figure 5: - Post Treatment Intraoral Photographs with Lingual retainers

References

1. Andreasen JO, Pindborg JJ, Hjorting-Hansen E, Axell T. Oral health care: more than caries and periodontal disease. A survey of epidemiological studies on oral disease. *Int Dent J* 1986;36(4):207-14.
2. Becker A, Smith P, Behar H. The incidence of anomalous maxillary lateral incisors in relation to palatally displaced cuspids. *Angle Orthod* 1981;51(1):24-9.
3. Ericson S, Kurol J. Radiographic assessment of maxillary canine eruption in children with signs of eruption disturbances. *Eur J Orthod* 1986;8(3):133-140.
4. Ericson S, Kurol J. Early treatment of palatally erupting maxillary canine by extraction of the primary canines. *Eur J Orthod* 1988;10(4):283-295.
5. McDonald F, Yap WL. The surgical exposure and application of direct traction of unerupted teeth. *Am J Orthod* 1986;89(4):331-340.

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