JMSCR Vol||04||Issue||09||Page 12548-12550||September 2016

www.jmscr.igmpublication.org
Impact Factor 5.244
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: http://dx.doi.org/10.18535/jmscr/v4i9.39

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Surgical Exposure of Labially Impacted Maxillary Canine: A Case Report

Authors
Dr Sandeep Bhullar[1], Dr Viniti Goel[2], Dr Gurpreet Kaur[3], Dr Deepak Grover[4], Dr Yadwinder Dhaliwal[5]
[1]Junior Resident, National Dental College, Derabassi
[2,3,4,5]Reader, National Dental College, Derabassi

Abstract
The case report describes the surgical and orthodontic management of a patient with a labially impacted permanent maxillary canine. Following surgical exposure, orthodontic traction was applied to reposition the canine with resultant proper functioning, excellent esthetics, and good periodontal health. In this report, the surgical exposure and orthodontic repositioning of a labially impacted permanent maxillary canine in a 13-year-old female. Not only were the esthetic results concerned, but a properly functioning occlusion with excellent periodontal health was more important.
Keywords: *surgical and orthodontic management, impacted maxillary canine, periodontal health, apically repositioned flap.*

Introduction

Dental impaction is a condition in which tooth cannot erupt because it may be retained by either adjacent bone or tooth. Maxillary canine are essential for the functional occlusion and esthetic smile. However, the maxillary canine is second to the third molar in the frequency of impaction with an incidence of about 2%. Previous studies have showed that 50% to 85% of impacted canines were palatally displaced. Although some cases have iatrogenic or idiopathic origins, potential etiological factors include dentoalveolar discrepancies, transverse maxillary deficiencies, prolonged retention or early loss of deciduous canines, absence or anomalies of upper lateral incisors, abnormal positioning of dental buds, alveoloschisis, and physical obstacles such as supernumerary teeth, mesiodens, odontomas, neoplastic formations, cysts, and root dilacerations. The impacted maxillary canine is often not noticed by the patient until the rest of the permanent dentition has fully erupted, or somehow diagnosed by the general dentist through routine X-ray examination. Combined surgical exposure and orthodontic traction is the common approach for management of palatally impacted canines. Several studies have suggested that the initial vertical and horizontal position of palatally impacted canines may affect the treatment success and post treatment periodontal status. Previous planning based on reliable risk estimates, length of orthodontic treatment, and success probability can be useful in the decision-making process for patients. An adequate diagnosis should be supported by clinical and complementary examinations for evaluating the

sites of impacted canines and their relationship with adjacent teeth and anatomical structures (nasal fossae and maxillary sinus).

The primary goal of surgical phase is not only to provide the means for correct position of orthodontic anchorage, but also to procure the tooth with favorable tissue anatomy that will permit the long-term maintenance of periodontal health. Studies have demonstrated that impacted teeth on the vestibular side of the loose alveolar mucosa bear significant recession and gingivitis when an approach that does not preserve the keratinized gum around the neck of the tooth is employed.

Kokich et al. (2004) reported three methods for uncovering a labially impacted maxillary canine depending on the canine cuspal position relative to the mucogingival junction (MGJ):

- Gingivectomy: When the canine cusp is coronal to the MGJ,
- Apically positioned flap: Canine cusp is apical to the MGJ,
- Closed eruption technique: Canine cusp is significantly apical to the MGJ/ tooth is very high within the buccal sulcus.

Case report

A 13 year old female patient with unilaterally impacted maxillary canines, under active orthodontic treatment, was referred from the Dept. of Orthodontics to the Dept. of Periodontics, National Dental College and Hospital, Derabassi. Clinical and radiological evaluation revealed superficial soft tissue impaction of unilateral maxillary canine [Fig 1]. The gingiva and periodontal health surrounding the impacted teeth were normal, with the exception of thin labial keratinized tissue. Apically repositioned flap was the treatment of choice for crown exposure and to increase the band of keratinized tissue.

Surgical Procedure

Two parallel/slightly apically diverging vertical incisions were made mesial and distal to the canine preserving the papillae of the adjacent teeth. A split thickness flap was elevated along the cusp of the unerupted canine. Finally, the flap folded to an apical position, was sutured with 4-0 silk to the alveolar mucosa, leaving more than half of the crown exposed [Fig.2]. Orthodontic bracket was placed 7 days following the surgical procedure. The canine started moving coronally in the arch 1 month following active orthodontic therapy [Fig.3].

Discussion

The orthodontic treatment is involved with soft and hard tissue changes which is important for the creation and maintenance of periodontal health. In literature no specific dimensions of attached keratinized tissue have been indicated for maintenance of periodontal health as it depends on own maintenance of oral hygiene. Even in orthodontic cases presence of keratinized tissue is important to prevent formation of periodontal defects. The fundamental principles which are considered when treating impacted teeth are the surgical approach, the type of fixation that is adhered to the tooth for its posterior traction and the orthodontic movements that have to be applied in order to position the tooth in the dental arch . From a periodontal point, the appropriate surgical technique should allow the orthodontist to apply appropriate forces in a favorable direction for efficient correction of the impaction and for avoidance of damage to adjoining soft tissues and teeth.

The present study investigated the short-term results of the successful ongoing orthodontic treatment of the impaction of maxillary canines in which an open-surgical exposure technique had been used. The main advantage of this technique is its simplicity, is that the crown remains in full view at the end of surgery, and bonding of an attachment may be subsequently performed in the orthodontic clinic in a bloodless environment and without the stress involved during the surgical procedure. Optimal esthetic and functional postoperative results were more important following apically repositioned flap technique.

The selection of appropriate surgical approach, conservative management of the soft tissues and the direction of the orthodontic traction are the important factors for the successful management of impacted canines. A multidisciplinary approach is essential for treating impacted teeth in order to achieve optimal esthetic and functional outcomes.

Fig 1. Reveals soft tissue impaction of maxillary lateral canine

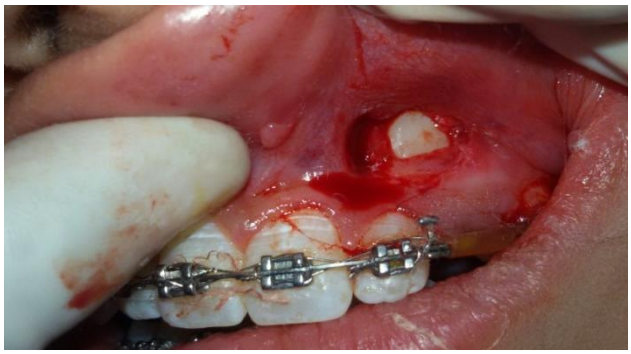

Fig 2. Exposed canine after surgical incisions

Fig 3. Post operatively canine moving coronally

References

1. Vilarinho1 M A, Lira A L S: Palatally impacted canine: diagnosis and treatment options. Braz J Oral Sci**.** April/June 2010 - Volume 9, Number 2
2. Tegsjö U, Valerius-Olsson H, Andersson L. Periodontal conditions following surgical exposure of unerupted maxillary canines-a long term follow-up study of two surgical techniques. Swed Dent J. 1984; 8:257-63.
3. Wisth PJ, Norderval K, Boe OE. Periodontal status of orthodontically treated impacted maxillary canines. Angle Orthod. 1976; 46:69-76.
4. Bishara SE. Impacted maxillary canines: A review. Am J OrthodDentofacial Orthop. 1992; 101:159–71.
5. Gracco A, Maltoni I, Maltoni M , Zoli L : Eruption of a Labially Impacted Canine Using a Closed-Flap Technique and Orth-odontic Wire Traction. Jco/October 2012
6. Kokich VG. Surgical and orthodontic management of impacted maxillary canines.Am J OrthodDentofacialOrthop. 2004; 126:278– 83.
7. Bishara SE. Clinical Management of Impacted Maxillary Canines. Seminars in Orthodontics 1998; 4(2):87-98.
8. Patel S. Alignment of impacted canines with cantilevers and box loops. J Clin Orthod.1999; 33:82–5.
9. Vanarsdall RL Jr. Efficient Management of Unerupted Teeth: A Time-Tested Treatment Modality. Seminars in Orthodontics 2010; 16(3):212-221.
10. Ramani A , Aggarwal C , Baswaraj et al . Ortho-surgical Management of Palatally Impacted Canine – A Case Report : Sch. J. Dent. Sci., 2015; 2(8):440-443.