Heal Talk

## **Facilitated Eruption An Innovative Way of The Management of Incipient Impacted Tooth- Technique Clinic**

#### Dr. Sanjeev Kumar Sharma<sup>1</sup>, Dr. Pradeep Tandon<sup>2</sup>, Dr. Gyan Prakash Singh<sup>3</sup>, Dr. Dipti Shastri<sup>4</sup>

Senior Resident<sup>1</sup>, Professor and Head<sup>2</sup>, Professor (Jr. Gr)<sup>3</sup>, Associate Professor<sup>4</sup> Department of Orthodontics & Dentofacial Orthopaedics Faculty of Dental Sciences, KGMU,Lucknow Uttar Pradesh, India.<sup>1,2,3,4</sup>



#### Introduction

n impacted tooth is defined as partially or completely unerupted tooth which lies against adjacent tooth, overlying soft tissues or bone so that its further eruption is unlikely. The diagnosis and the treatment of such problem require the expertise and cooperation of the general dentist, pedodontist, Oral surgeon, periodontist and above all the orthodontist<sup>1</sup>. A 14 year old female patient reported to department of orthodontics and dentofacial orthopaedics, KGMU, lucknow with chief complaints of spacing in upper front teeth region. There is no significant medical history. On extra-oral examination, Patient had a pleasing profile. There were no gross asymmetries. On intraoral examination, angle's class i molar relationship on both side. There was 4.5 mm overjet and 4mm overbite, crowding in lower arch, all the third molars and right maxillary lateral were missing but she had an acceptable buccal occlusion. Poor oral hygiene (figure 1). On functional examination, mandibular path of closure was normal without any deviation. No signs or symptoms of temporomandibular joint dysfunction were noted at the initial examination. Patient showed normal speech pattern and swallowing pattern. On study model analysis, apparently symmetrical ovoid maxillary and U-shaped mandibular arch. The arch length discrepancy was 4 mm in maxillary arch and 2 mm in mandibular arch. On cephalometric examination, patient had a class I skeletal relationship (ANB =  $2^{\circ}$ ) with average growth pattern (FMA =  $24^{\circ}$ ). The panoramic radiograph showed all permanent teeth with unerupted all erupted  $3^{nd}$  molar and right maxillary lateral incisor (figure 2)

#### Abstract

An impacted tooth is one that is prevented to erupt in its normal functional position by bone, tooth or fibrous tissue. The current case demonstrates a simple way to treat an impacted right maxillary lateral incisor using maxillary removal expansion appliance followed by alignment of maxillary arch. As it facilitates the eruption of incipient impacted tooth with preservation of the attached gingiva around the newly erupted tooth.

Key Words: Impaction, Facilitates Eruption, Maxillary Lateral Incisor

#### Treatment

Removal maxillary expansion appliance has been given for the space regain in the region of maxillary lateral incisor (figure 3). After gaining the space for the lateral incisor, with the help of removal appliance (figure 4). Molar band were placed on the maxillary first permanent molars, and brackets were placed on the maxillary permanent teeth. Upper dental arches were bonded using 0.022" x 0.028" slot straight wire appliances (figure 5). Alignment of maxillary arch facilitated the eruption of lateral incisor. (fig 6) after eruption of lateral incisor, bracket has been placed on the lateral incisor. (fig 7). After complete alignment of lateral incisor, upper arch has been debonded (figure 8). The patient was given maxillary fixed bonded retainers (figures 9). Total treatment time was 12 months.

#### Results

The maxillary lateral incisors were brought into an acceptable position within the arch (figure 9). Adequate overbite, overjet, and intercuspation were achieved. Wellinterdigitated class I canine and molar relationships were attained. The most significant change was a dramatic improvement in the patient's smile, and the final appearance of the teeth was esthetically pleasing with gingival margins at the same level and similar clinical crown sizes. After completed treatment, the repositioned incisors had an acceptable gingival contour and width of attached gingiva. The posttreatment radiograph showed the newly positioned incisors showed no periodontal bone loss, minimal root resorption, acceptable root parallelism, and root form (fig 10).

#### Discussion

The frequency of maxillary incisor impaction ranges from 0.06% to  $0.2\%^2$ . There are four treatment options for impacted teeth: observation, intervention, relocation and extraction. Some interaction among treatment options is likely. Observation implies no

#### treatment

for a specific period, which is subdivided into pre impaction and post impaction periods.

Intervention consists of a brief period of orthodontic therapy or the removal of teeth (deciduous and/or permanent), with the attempt to eliminate tooth impaction. Relocation refers to the repositioning of an impacted tooth surgically or orthodonti-cally<sup>3</sup>. The position and angulation of the impacted tooth, length of treatment time, available space and the presence of keratinized gingival tissue are few critical factors that affect the prognosis and treatment outcome of this condition. Spontaneous eruption is more likely to occur after presurgical orthodontic space opening. It is important to extend the space to include the entire root area, to allow the unerupted tooth an unobstructed path into the mouth. Therefore, uprighting the roots is mandatory <sup>4</sup>. Impaction of maxillary anterior teeth can be a challenging orthodontic problem. Several reports have indicated an impacted tooth can be brought into proper alignment in the dental arch.<sup>5-8</sup> In this case, we demonstrates an facilitated eruption of an impacted maxillary lateral incisor. Facilitated eruption technique facilitated the preservation of the attached gingiva around the newly erupted tooth. Early Intervention of orthodontic therapy prevent surgical treatment of impacted tooth and It induce the bone formation through Bone Induction. Therefore newly positioned maxillary lateral incisors showed no periodontal bone loss.

#### Conclusion

This article demonstrates an facilitated eruption of an impacted maxillary lateral incisor. Facilitated eruption technique with bracket bonded on the labial surface of the lateral incisor was chosen as this technique facilitated the preservation of the attached gingiva around the newly erupted tooth. Light forces were used and extra care was taken to avoid damage to the teeth and supporting

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### **Orthodontics**

#### structures. Reference

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(A) Frontal View



(B) Maxillary Occlusal



(C) Mandibular Occlusal



(D) Right Lateral



#### (E) Left Lateral



Pre X Ray (Fig. 2) (A) Lateral Cephalogram







(C) OPG Of Lateral Incisor



Stage Intra Oral Photograph (Fig. 3) (A) Frontal View



(B) Maxillary Occlusal



(C) (D) Maxillary Expansion Appliance





(E) Frontal View



After Removable Appliance Treatment (Fig. 4) (A) Frontal View



(B) Maxillary Occlusal



(D) Right Lateral



## Orthodontics (E) Left Lateral



Alignment Of Upper Arch Started (Fig. 5) (A) Frontal View



(B) Maxillary Occlusal



(D) Right Lateral



(E) Left Lateral



After Alignment (Fig. 6) (A) Frontal View



(B) Maxillary Occlusal



Alignment Of Lateral Incisor Started(Fig. 7) (A) Frontal View



(B) Maxillary Occlusal



Alignment Of Lateral Incisor Continued (Fig. 8) (A) Frontal View



(B) Maxillary Occlusal



(D) Right Lateral



Post Intra Oral Photograph (Fig. 9) (A) Frontal View



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(B) Maxillary Occlusal



(D) Right Lateral



(E) Left Lateral



Post Opg (Fig. 10) (A) OPG



(B) IOPA





### **Orthodontics**

After 1 Year Of Retention (Fig. 11) (A) Frontal View



(B) Maxillary Occlusal



#### (C) Mandibular Occlusal



(D) Right Lateral



(F) E/O Frontal (G) Frontal With Smiling

