Case Report

Surgical Exposure of Impacted Upper Incisor and its Proper Alignment in the Dental Arch

RMG Rabbani[1], AK Saha[2], RP Biswas[3], MSA Khan[4], KNC Fanse[5], MZ Hossain[6]

Abstract

Surgical exposure of impacted upper incisor is very complex. So fixed orthodontic treatment rehabilitation is the first choice of treatment for correction of malocclusion. A clinical case report of a 10-year old boy with an un-erupted mal-posed upper left central incisor was treated by sequential surgical exposure and fixed orthodontic treatment. The tooth was aligned in the dental arch with accepted aesthetic and functional satisfaction of the patient.

Key Words: *impacted tooth, surgical exposure, fixed orthodontics*

Introduction

Permanent tooth eruption failure can create orthodontic problem. A localized problem is typically created by displacement of a permanent tooth from its normal eruption path so that the tooth becomes impacted and maxillary canine is mostly affected1. Impaction of upper central incisor is not a common problem for the orthodontist. This type of case can be managed by both surgical and orthodontic approaches[2,3,4]. The patient presented in this case report, exhibited a challenging and difficult impaction of left upper central incisor, the correction of which required orthodontic traction of impacted tooth after being surgically exposed. The patient was treated by surgical exposure of upper left central incisor immediately slandered edgewise fixed appliance was fitted and then in orthodontic way brought into the dental arch with proper alignment.

History and Clinical Examination:

A 10-year old boy reported to the department of Orthodontics, Dhaka Dental College and Hospital with the complaint of failure of eruption of a tooth in his jaw as his chief complaint. Patient's mother was aware of this problem and wanted proper treatment even with the aid of surgery. The patient had a straight profile with competent lip and good facial symmetry. An Angle Class I malocclusion with impacted upper left central incisor was noted (Fig. 2). Clinical assessment of mandibular closure from rest position to habitual occlusion showed no mandibular displacement. Panoramic radiography revealed the presence of all permanent teeth with impacted (labio-version) upper left central incisor. No sign or symptom of TMJ pathology was noted.

Treatment Objectives

Study model, clinical feature and panoramic radiography revealed the need of the following treatment objectives:-

1. Surgical exposure of upper left central incisor and
2. Proper alignment of teeth for aesthetic purpose and prevention of further development of any pathological lesion.

Treatment Plan and Progress

The patient was treated in three phases, (1) surgical exposure, (2) attachment to the tooth and (3) orthodontic mechanics to bring the tooth into the arch. First the tooth was exposed surgically by reflecting the flap of the crest of the alveolus and sutured so that attached gingival has been transferred to the region where the crown is exposed and waited for two to three weeks for spontaneous eruption. The tooth projected towards the upper lip. Then palatal button was bonded on the palatal surface of the tooth. The standard edgewise fixed appliance was set in the upper arch and traction from the central incisor was given for downward movement of tooth. After the movement, bracket was set on the labial surface of tooth and

1. Dr. Rashed Md. Golam Rabbani, BDS, FCPS, Department of Orthodontics and Dentofacial Orthopedics, Dhaka Dental College and Hospital

2. Dr. Arup Kumar Saha, BDS, Lecturer, Department of Dental Public Health, City Dental College and Hospital, Dhaka

3. Dr. R. Palash Biswas, BDS, Department of PH & HA, NIPSOM, Dhaka.

4. Dr. Most. Shahana Afroge Khan, BDS, Lecturer, Marks Dental College and Hospital, Dhaka

5. Dr. Kamrun Nahar Chowdhury Fanse, BDS, Department of PH & HA, NIPSOM, Dhaka.

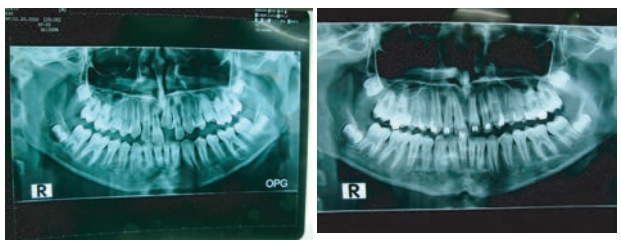
6. Professor Dr. Md. Zakir Hossain, BDS, PhD, Professor and Head, Department of Orthodontics and Dentofacial Orthopedics, Dhaka Dental College and Hospital.

Address of the Correspondance: Dr. Rashed Md. Golam Rabbani, BDS, FCPS, Department of Orthodontics and Dentofacial Orthopedics, Dhaka Dental College and Hospital, Tel: 01717-974562, Email: rabbanirashed@yahoo.com

treatment completed (Fig.3).

Results

One year after the initial treatment, the patient was consulted again with pre and post treatment records. A Class I incisor relation was achieved with optimal overbite and over jet relationship (Fig.ii). The post treatment panoramic radiography revealed a complete eruption of upper left central incisor. The root of the tooth was fairly parallel, supporting tissue appeared healthy clinically and radiologically.

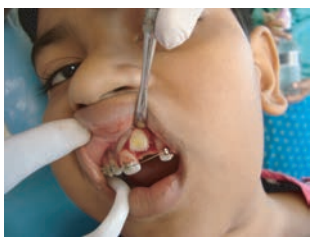


Pre-Treatment Radiograph

Pic-01

Pic-02

Pic-03



Pic-04

Pic-05

Pic-06

After Treatment Photograph

Pic-I

Pic-II

Pic-III

Discussion

Proper treatment of this case showed improvement of aesthetics and prevention of development of any pathological condition. The relationship of both dentitions improved. However, there was a risk of damage to tooth during surgical exposure as the tooth was several times impacted. Alternate option was surgical transplantation. External root resorption often ensues after transplantation and is the major failure[5,6,7]. But use of fixed appliance with controlled movement of tooth helped the patient to a more improved functional dental and aesthetic relationship. To enhance the long-term stability of the result, the fixed appliance should be kept in place up to eruption of permanent canine. Timely and proper orthodontic treatments with the cooperation of the patient are instrumental in the success of treatment6.

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