

EFFICACY OF ANTERIOR BITE PLANE IN CLASS II DEEP BITE CASE -A CASE REPORT

Shweta Dixit¹, Garima Gupta², Pooja Sharma³, Sameer Gupta⁴

¹Sr. Lecturer, Dept of Orthodontics and Dentofacial Orthopedics, Darshan Dental College and Hospital, Udaipur, India

²Reader, Dept. of Orthodontics and Dentofacial Orthopedics, KD Dental College and Hospital, Mathura, India

³Reader, Dept. of Orthodontics and Dentofacial Orthopedics, KD Dental College and Hospital, Mathura, India

⁴Reader, Dept. of Orthodontics and Dentofacial Orthopedics, KD Dental College and Hospital, Mathura, India

ABSTRACT

Aims and Objectives: Deep bite is one of the common malocclusion which has a varied of etiologies; this case report includes correction of deep bite with help of anterior bite plane. **Materials and Methods:** One post pubertal patient of age 15 years with proclined maxillary incisors with class II skeletal and class II molar treated with fixed orthodontic appliance with anterior bite plane. **Results:** It resulted in favorable skeletal and dentoalveolar changes. Midlines were coinciding, molars were in class I relationship and smile was improved. **Conclusion:** Using anterior bite plane corrected class II deep bite in patient, corrected lip trap and proclined maxillary incisors.

Keywords- Anterior bite plane

INTRODUCTION:

In orthodontics, incisor deep bite has always been considered as a difficult anomaly to correct. The concept of unlocking, introduced by the bioprogressive School, proves that the profession has become aware of its importance in any orthodontic treatment plan.^{1,2} Considering how fast the anterior problem is solved once the occlusion is lifted, the bite plate plays an important part in orthodontics treatment. Without resolving the deep bite, orthodontics treatment can not proceed. A case report of deep bite in a Class II malocclusion and permanent dentition with lip trap illustrates the principles of case management.

CASE REPORT-

A 15 year old girl came for orthodontic treatment. Clinical examination revealed that she was having Mesoprosopic face type with a convex profile and posterior divergence. She had an acutenasolabial

angle, with lower lip trap, normal mentolabial sulcus and average chin. She had orthognathic maxilla and retrognathic mandible.

On hard tissue examination, full set of teeth were present in all four quadrants except third molars. Crowding was present in lower anterior region. Incisors were in class II relationship, molars were in edge to edge on both sides and canine was in end-on relationship on left and class I on right sides. Overjet was 11mm and overbite was 5 mm, rotations were seen in 24,25,32. Free way space was 3 mm.

Treatment plan for this patient was non extraction with fixed orthodontic appliance and simultaneous use of fixed anterior bite plane. It took 6 months to correct deep bite. By this time patient was on stainless steel wire with fixed orthodontic braces. It took another 6 months to close remaining spaces and

Corresponding Author:

Shweta Dixit

E-mail: shwetaaaa@gmail.com

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Pre treatment photographs



Pre treatment photographs



finish the case.

DISCUSSION:

The two common treatment modalities used to reduce deep bite are maxillary incisor intrusion using

Pre treatment photographs



an intrusion arch and posterior tooth eruption using an anterior bite plate. Both the intrusion arch and bite plate treatment modalities are effective to reduce deep bite over a relatively short period of treatment. The mechanisms of correction are different in the two treatment procedures with the intrusion arch demonstrating significant maxillary incisor intrusion accompanied by a greater decrease in maxillary anterior tooth display (lip to tooth). Bite plate patients exhibit more lower incisor intrusion, significant flaring of the lower incisors and a small increase in the mandibular plane angle. Patients in both the intrusion arch and bite plate treatment modalities may experience flattening of the smile arc during the overbite correction phase of treatment.³

Certain aspects of malocclusion, particularly deep bite, can be related to periodontal pathology, especially in the presence of poor oral hygiene. Bite plates may be useful as an adjunct to periodontic and

orthodontic therapy. The change in vertical position of the dentition and the decrease in overbite with bite plate are primarily due to eruption of the posterior teeth and not intrusion of the lower anterior teeth.

A study compared normal overbite, deep bite and open bite cases with clinically healthy temporomandibular joints (TMJ) regarding the difference between condylar positions in centric relation (CR) and habitual or centric occlusion (CO), condylar paths and radiographic findings of condylar appearance in order to establish normative data. The CR-CO differences were greater in the vertical plane in open bite cases and direction of movements from CR to CO showed great variability. Open bite cases had significantly shorter condylar paths. Radiographic findings exhibited that 23% of the total sample showed evidence of erosion and 83% evidence of flattening of condyles. The erosion rates were higher in the open bite group, but flattening was seen more often in the deep bite group. Results of this study showed that open bite cases show larger vertical CR-CO slides and, shorter protrusion paths than normal and deep overbite cases. The radiographic appearance of condyles in non-patients may also differ significantly according to vertical incisor guidance type. Deep bite cases demonstrated a higher incidence of condylar flattening.^{1,6,7}

Although we did not find TMJ alterations in this case report, the clinician and orthodontists should be paying special attention to the TMJ status of open and deep bite patients. In this case treatment was completed in one year. Fixed appliance was bonded along with fixed bite plane, the overbite was close of ideal with class I molar occlusion.

CONCLUSION

Anterior bite plane is very useful appliance for Deep bite cases. It shortens treatment time, Provides better results and affordable to patient.

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