

Treatment of a skeletal Open bite treatment with mini implants

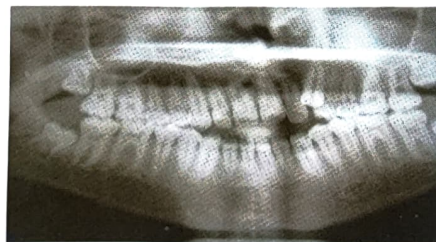
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INTRODUCTION:

Open bite is defined as a developmental or acquired malocclusion whereby no vertical overlap exists between maxillary and mandibular anterior or posterior teeth. Because of its multi factorial and complicated aetiology it is one of the most difficult malocclusions to treat. Treatment options in adults mainly include orthodontic extrusion of anteriors and intrusion of molars, or orthognathic surgery. Extrusion of the anterior teeth is one of the most popular treatment modalities. However, according to Graber it could lead to significant root resorption. Also extrusion of teeth is much less stable than intrusion, and can also affect the esthetic outcome of the treatment. For such reasons extrusion of anterior teeth should be used very carefully. Intrusion of the molars with posterior bite blocks ,extraoral devices, magnets and springs have also been used in the past with some success. However they are only successful in providing 'Relative intrusion. Orthognathic surgery with maxillary superior impaction and autorotation of mandible seemed the treatment of choice in such skeletal open bites. However because of the invasive nature of it, most of the patients and clinicians are reluctant to opt for it. But with the advances in Bio compatible materials and advent of Skeletal Anchorage it is now possible to produce the treatment outcome that can match and probably surpass that obtained with Orthognathic surgery.

Molar intrusion with Mini implants



brings about changes in occlusal plane, mandibular plane angle, lower anterior

face height, and anterior dental overbite resembling the treatment outcome of maxillary surgical impaction.

This article describes a case report of treatment of a skeletal open bite by molar intrusion with the use of mini implants.

CASE PRESENTATION:

A 18 yr old male reported to the department of Orthodontics and Dentofacial Orthopaedics at A.B. Shetty Memorial Institute of Dental Sciences, Mangalore with the chief complain of gaps in his upper front teeth.

He had a Mesocephalic head type and leptoprosopic face type. He had a Convex facial profile with posterior divergence, Competent lips, Steep mandibular plane angle and Class II apical base relationship.

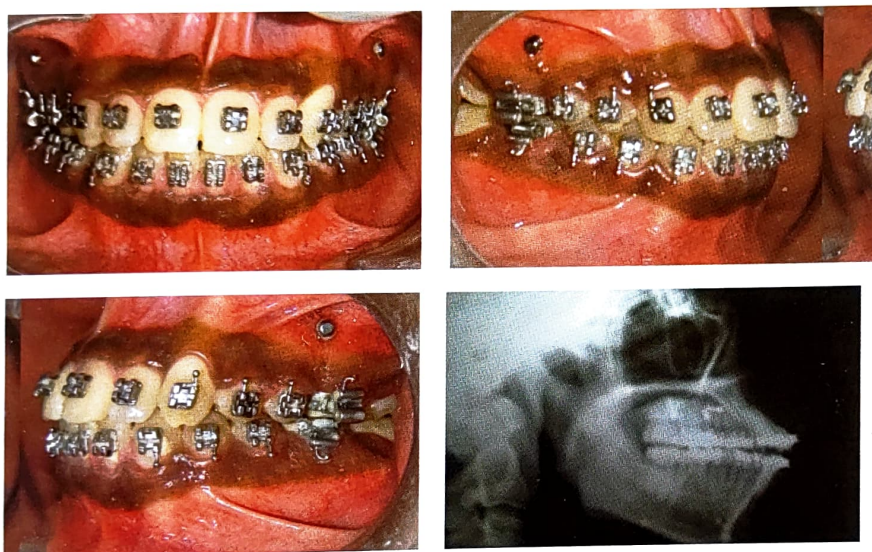
Intra oral examination revealed Angle's Class I Molar and Class I canine relation

Upper midline was shifted to left side by 3 mm. He had an Overjet of 1 mm,

Openbite of 7mm and a highly placed 23
Radiographic Findings: Cephalometric analysis showed an ANB of 4 degree.



Cephalometric Values	Pre Treatment	Present status
SNA	82°	81°
SNB	78°	79°
ANB	4°	2°
Angle of Convexity	12°	9°
FMA (Tweed's)	32°	29°
SN - GoGn	39°	37°
Nasolabial Angle	93°	100°



Mandibular Plane Angle (FMA of 32° and SN-GoGn of 39°) pointed towards a skeletal open bite.

DIAGNOSIS:

Skeletal - Class II skeletal base with a Retrognathic mandible and vertical growth pattern

Dental - Angle's Class I molar relationship with anterior open bite.

Soft tissue- Convex facial profile with Consciously competent lips and Protruded upper and lower lips

Treatment Plan: Since the patient had an acceptable profile, a non extraction plan was decided. The anterior open bite was to be closed by the mild Extrusion of the the incisors and intrusion of the posteriors using micro implant with Preadjusted edgewise mechanotherapy with 0.022 "slot, MBT prescription.

Treatment Progress: A microcrew implant (diameter, 1.2 mm; length, 8 mm) was placed into the palatal and Buccal alveolar bone between the maxillary first and second premolars on both sides. An Elastomeric Chain was stretched and engaged from the buccal to the palatal mini implant delivering an total intrusive force of about 100 grms. In about 12 months, the anterior open bite was corrected with an auto rotation of mandible and slight extrusion of the anteriors.

Treatment Outcome: 1.5 mm of overbite was obtained at the end of the treatment mainly due to the intrusion of the maxillary molars and the slight acceptable extrusion of the anterior teeth. Post treatment cephalometric values showed that the mandible autorotated by around 3 degrees and there was a slight flattening of the occlusal plane.

Changes in the facial profile were not sig-

nificant and molars and canines were maintained in class I relation. Also there was no evident signs of root resorption. Patient was put on a regimen of chewing exercises to strengthen the masticatory muscles. This helped to maintain the achieved results and prevent relapse.

Conclusion: The use of mini implants as absolute anchorage in the intrusion of posterior teeth is very effective in closing the anterior open bite. The correction is mainly achieved by intrusion of molars, counter clockwise rotation of the mandible and a slight extrusion of the anterior teeth. Since it can simulate the treatment outcome of that obtained with maxillary surgery, the use of mini implants can be the treatment of choice in such skeletal open bites.

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