

Management of proclined teeth –A case report

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Abstract : Proclination of teeth is common among the patients those who seek for orthodontic treatment . Proclination of teeth can be seen due to several reasons: previous deleterious thumb sucking habit, tongue thrusting habits or it can be due to prolonged retention of deciduous teeth, or it can be due to forwardly placed jaw bases in relation to cranial base. The case report here discuss orthodontic management of a patient with class I molar relation and proclined upper anterior teeth.

IndexTerms -Proclination of teeth.

I. INTRODUCTION

Angle's class I malocclusion is characterized by the presence of a normal inter-arch molar relation . The mesiobuccal cusp of the maxillary first permanent molar occludes in the buccal groove of mandibular first permanent molar these patients exhibit normal skeletal relation and also show normal muscle function. The patient may exhibit dental irregularities such as crowding, spacing, rotations, missing tooth etc. In some cases both upper and lower arches are forwardly placed in relation to cranial base. These are categorized under class I bimaxillary protrusion.

Bidental protrusion is a category often used in clinical practice to describe the tooth position in the upper and lower jaws . in this situation the anterior teeth in maxillary and mandibular jaws are abnormally proclined. Such situation may be encountered either in skeletal class I ,class II, or class III cases.

Kharbanda et al¹⁻³ reported prevalence of malocclusion in Delhi based on school survey of 5554 children in the age group of 5-13 yrs. Majority of children exhibited class I molar relation with other discrepancies. There is a definite ethnic trend in the prevalence of type of malocclusion in India from north to south. The southern population has ethnic affinity for bimaxillary protrusion.

II. DIAGNOSIS

Neha Mullick reported to our clinic with chief complain of forwardly placed upper teeth. She is externally motivated . She is a student of class IX.

Extra oral examination-

- ▶ Having mesocephalic head form, & mesoprosopic facial form.
- ▶ No history of congenital diseases/ anomaly recorded.
- ▶ Lips are potentially competent with interlabial gap of 4 mm.
- ▶ Incisor display is 4 mm at rest.
- ▶ No gingival display at rest
- ▶ Full incisor display at smile.
- ▶ 1-2 mm of gingival display at smile.
- ▶ Smile arc is non consonant.
- ▶ Lateral profile is convex.
- ▶ Face is posteriorly divergent.
- ▶ Nasolabial angle –80 degree.
- ▶ Proportionate face.

Intraoral Examination

- ▶ Maxilo-mandibular relationship shows class I. class I Canine relationship.
- ▶ Overjet: 10 mm
- ▶ Overbite: 4 mm
- ▶ Curve of spee: 3.5mm on both side.

Study model analysis - Carey's analysis shows tooth material and arch perimeter discrepancy of 5mm in upper arch and 4mm in lower arch.

Bolton 's ratio shows 1.05 mm maxillary tooth material excess .

Ashley Howe's analysis shows 39.63 %.

III. Management :

Parameters	Pre-treatment	Post-treatment
SNA	84 degree	82 degree
SNB	82 degree	80 degree
ANB	2 degree	2 degree
FMA	30 degree	28 degree
IMPA	92 degree	90 degree
1to NA	45 degree/ 15mm	28 degree/5mm
1to NB	27 degree/6mm	24 degree/4mm

TREATMENT GOALS

- ▶ Establishment of lip incompetency.
- ▶ Elimination of crowding on both upper and lower arch.
- ▶ Reduction of proclination of upper anteriors.
- ▶ Reduction of overjet and overbite.

TREATMENT PLAN

- ▶ Fixed mechanotherapy with preadjusted edgewise mechanics following MBT prescription.
- ▶ Extraction of first premolars in both upper and lower arch.
- ▶ Transpalatal arch on upper arch (4-5mm away from palate) .
- ▶ Continuous arch mechanics .
- ▶ Leveling& alignment of upper and lower arch.
- ▶ Enmass retraction of anteriors with frictional mechanics.

RETENTION PROTOCOL

- ▶ Flexible spiral retainer from canine to canine on both arches.
- ▶ Removable Hawleys retainer on both arches.

IV. Pretreatment Extra oral photograph :

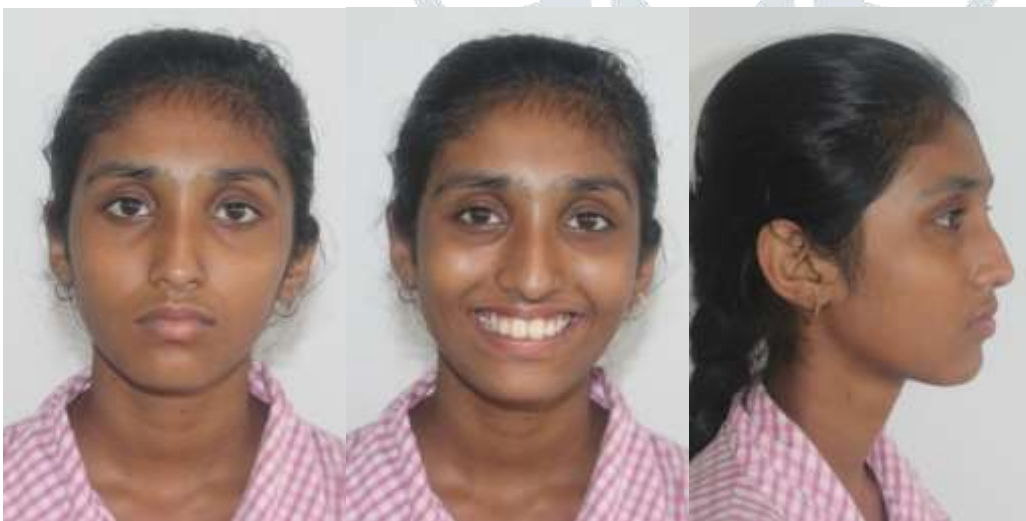




Post treatment intra oral photograph :



Post treatment Extraoral photograph :



VI. Discussion

Extraction of premolars was necessary to gain space for reduction of proclination of anterior teeth. To close extraction spaces sliding mechanics was used in this case. Many clinicians feel that sliding mechanics offer predictable results since the preformed archwire helps maintain the occlusal plane and chosen arch form. It also has advantage of clinical simplicity.

Regardless of its simplicity, however, the efficiency of sliding mechanics may be compromised due to the effects of friction. With sliding mechanics, space closure is slowed as the bracket undergoes a 'stick-slip' action along the archwire. This erratic movement occurs as the tooth tips and the bracket then binds against the archwire.⁴⁻⁶

VII. Conclusion

Proclination of teeth results in convex profile that produces unacceptable esthetics and smile. Some times pronunciation is also hampered due to proclined teeth. Correction of proclination by orthodontic management requires proper diagnosis and planning of treatment.

VIII. References :

- I. Kharbanda OP, Sidhu SS. A study of malocclusion and associated factors in Delhi children . J Pierre Fauchard Acad 1995;9: 7-13.
- II. Kharbanda OP, Sidhu SS . occlusion status during early mixed dentition in Delhi children . Project Report Indian Council of Medical Research, 1991.
- III. Kharbanda OP, Sidhu SS . Prevalence of malocclusion and its traits in Delhi children . J Indian Orthod Soc 1995 ;26 (3):98-103.
- IV. Kusy RP, White JQ. Influence of archwire and bracket dimensions on sliding mechanics : derivations and determinations of the clinical contact angles for binding . Eur J Orthod 1992;21 : 199-208.
- V. Kusy RP , Whitley JQ . Assessment of second –order clearances between orthodontic archwires bracket slots via the clinical contact angles for binding . Angle Orthod 1999;69: 71-80.
- VI. Loftus BP, Artun J. Evaluation of friction during sliding tooth movement in various bracket –archwire combinations. Am J Orthod Dentofacial Orthop 1999; 116 :336-345.

