TREATMENT OF MUTILATED MALOCCLUSION – A CASE REPORT

*Jain Sandhya, **Ratre R K, ***Agarwal Vijay

A case report of 19-year old man who had an skeletal Class III mutilated malocclusion characterized by bilateral posterior cross bite & open bite, crowding, nail-biting, mouth-breathing habit etc. A non-surgical approach was used to obtain significant improvement in occlusion & facial esthetics.

Correction of mutilated malocclusion has always been challenging to an Orthodontist especially in adult cases. **Casko et al.** has stated that " it is our responsibility as practicing orthodontists to develop an individual diagnosis & treatment plan for each patient so that optimal dental & esthetic result can be achieved..... This philosophy of treatment requires a broad understanding of growth & development & basic biomechanical principles, & the ability to use & modify appliances that can apply those principals. In essence we need to adapt our treatment to the individual needs of our patients." This case report describes the treatment of a patient for whom an individualized treatment plan was of paramount importance **because of the unique features of the malocclusion.**

Most of the patients seek orthodontic treatment for improvement of esthetics e.g. for crowding of teeth or protrusion of teeth resulting in impaired smile problems. Rarely, we find orthodontic patients with the complaint of masticatory inefficiency.

CASE REPORT

A 19-year old male reported to our department with the chief complaint of masticatory inefficiency. The general health of patient was good with no significant medical history.

The patient was 19 years old young boy of normal weight & stature. His dental history included mouth breathing & nail biting. Gingival recession was present in maxillary II premolar, I & II molars on both sides & root caries on right maxillary II premolar & I molar. No signs or symptoms of temporomandibular dysfunction were noted. The skeletal & dental disharmony was believed to be hereditary in nature, but complicated by environmental factors of mouth breathing, nail biting & poor periodontal condition.

Revealed skeletal Class III bases with average growth pattern. Dental analysis showed proclined upper incisors & retroclined lower incisors. He exhibited an increased lower anterior facial height.

Diagnosis

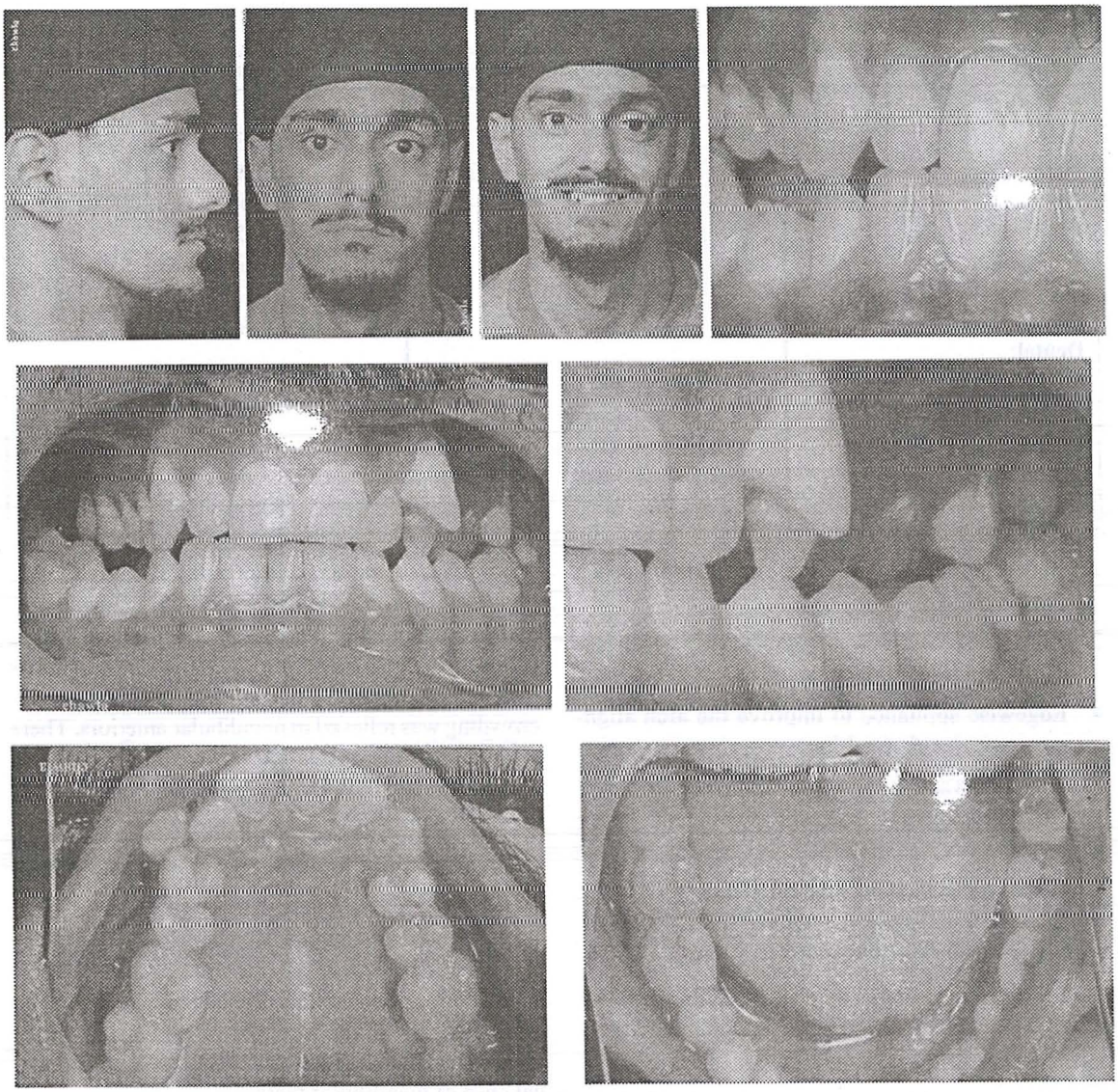
The patient had an angle's Class I mutilated malocclusion with severe bilateral posterior open bite and there was severe posterior bilateral cross bite also. Constriction was so severe in upper arch that maxillary left canine blocked out labially totally, mandibular premolars and I molar were totally buccally to maxillary premolars and molars. II molars were also in buccal cross bite. Upper midline was shifted towards left side because of blocked out canine and lower towards right side because of deviation of mandible. Tongue was positioned lower in relation to the functional occlusal plane. Low positioning of tongue might have lead to severe contraction of upper arch and expansion in premolar and molar region in lower arch. There was crowding in lower anterior region.

Treatment

The most important treatment objective was to improve the masticatory efficiency by closing open bite in the posteriors. The objectives were defined as:

1. Expansion of maxillary arch and constriction of lower arch to end in proper occluding buccal cross bite.

*Professor & Head, **Assistant Professor, ***PG Student, Department of Orthodontics, Govt. College of Dentistry, Indore 452 001.



Extra oral & intra oral photographs – Pre treatment

2. Correction of midline.
3. Retraction and decrowding of teeth.

The diagnostic records were then reviewed with an oral surgeon & a treatment plan proposed to use orthodontic treatment in conjugation with orthognathic surgery. But patient was not ready to undergo orthognathic surgery.

The limitations of a purely orthodontic treatment were thoroughly reviewed with the patient & a secondary nonsurgical treatment was proposed to obtain improvement in occlusion & facial esthetics. Taking above features into consideration, the following treatment planning was devised -

1. Extraction of maxillary right II premolar & both right & left mandibular I premolars.

Cephalometric Analysis

	Pre treatment	Post treatment
Skeletal:		
SNA	73°	73°
SNB	79°	78°
ANB	6°	-5°
FMA	25°	25°
GoGn SN	28°	29°
Facial-Angle	90°	89°
Wit's appraisal	-5mm	-4mm
Dental:		
U1-NA (°)	44°	33°
U1-NA (mm)	13mm	6mm
L1-NB (°)	10°	7°
L1-NB (mm)	1mm	-1mm
IMPA	78°	76°

2. Left side premolar was not extracted to correct the midline.
3. Right side premolar was extracted only which was of poor periodontal status.
4. Edgewise appliance to improve the arch alignment, overjet, & overbite .
5. Retention was to be maxillary & mandibular wrap-around retainers to maintain alignment & space closure.

During pre-orthodontic period, patient underwent extraction of maxillary & mandibular premolars, deep scaling & home care education.

Treatment was begun by placing 0.022 edgewise bands & brackets on all the teeth. Appointments were scheduled every 4 to 6 weeks.

Alignment and leveling was achieved with .016" NiTi, .016", .018" and .020" round stainless steel wires. Vertical elastics(three & half ounces) & cross elastics connected to maxillary & mandibular premolars & molars were used to close the bite. Space closure was done using sliding mechanics with rectangular .017" x .025" stainless steel wire. Finishing was done with .019" x .025" TMA wire & buccal root torque was added in the region of maxillary molar.

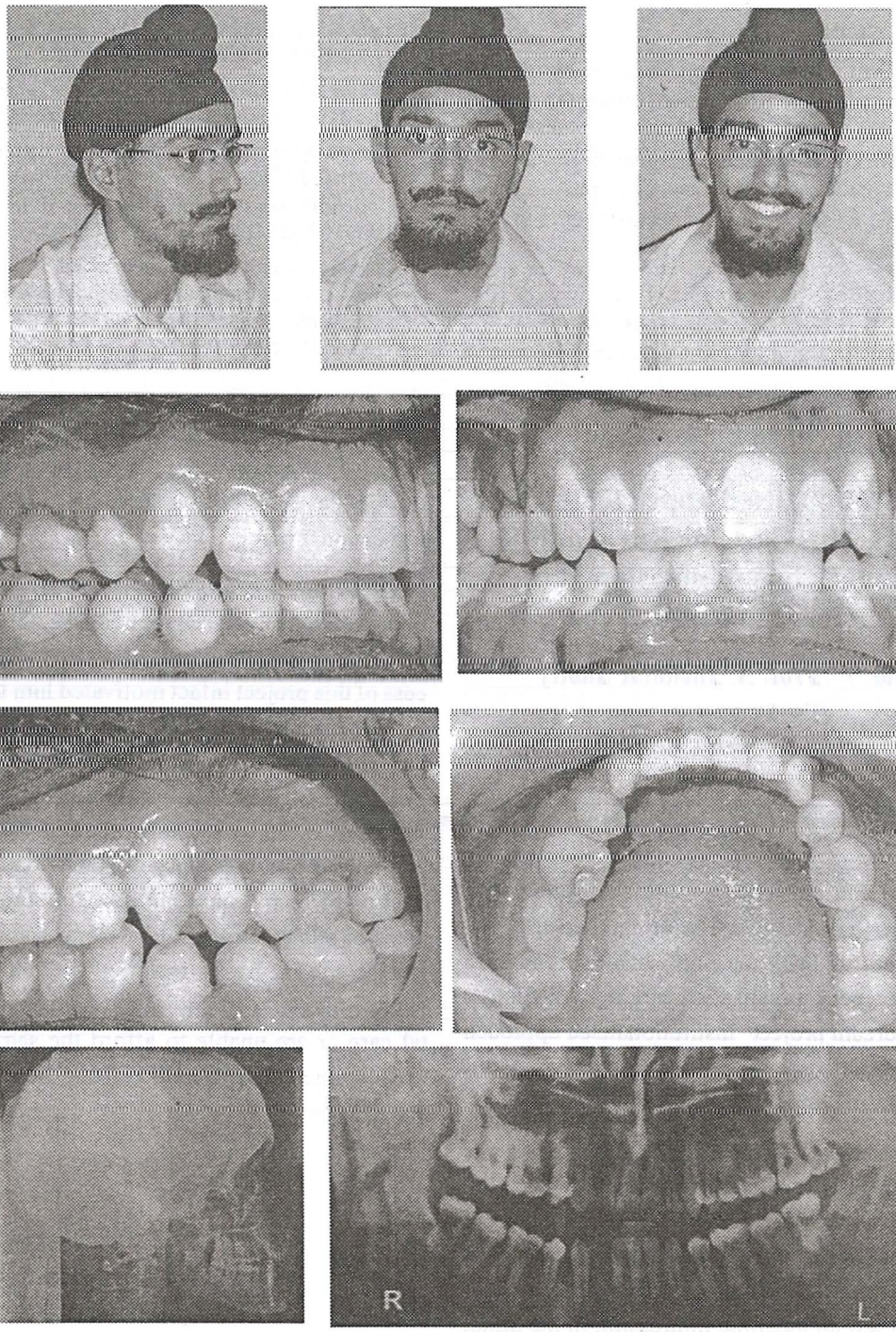
Teeth were aligned within their respective bases. Overbite & overjet were corrected. Midline was corrected. Sufficient expansion of maxillary arch was achieved to end in proper occluding buccal cross bite. Significant retraction of maxillary incisors & crowding was relieved in mandibular anteriors. There were limitations in treating this case, as expansion was possible to only limited extent.

After 23 months of treatment, patient was happy for improvement in masticatory efficiency and esthetic improvement.

After debonding, occlusion adjustment was done for proper removal of pre-mature contacts & stabilization of occlusion. Enameloplasty was done using principle of inclined plane i.e. lingual slope of buccal cusp of maxillary teeth & buccal slope of buccal cusp of mandibular teeth.

A maxillary removable wrap-around retainer was used to maintain space closure & reduce occlusal interferences in settling.

A mandibular bonded canine to canine 0.0195-inch twist wire along with a removable wrap-around retainer were used for incisor stability & maintenance of space closure.



Extra oral & intra oral photographs – Post treatment

CONCLUSION

Excellent documentation, informed consent, & constant revaluation of treatment progress could allow for some unconventional care as a service for our patients. Overall the service provided to this patient, has produced a significantly improved facial appearance, a vastly improved occlusion & increased self-esteem.

REFERENCES:

1. Casko JS, Eberle KM, Hoppens BJ. Treatment of a dental deep bite in a patient with vertical excess & excessive gingival display. AM J ORTHOD DENTOFAC ORTHOP 1989;96:1-7
2. Graber TM, Swain BF. Orthodontic current principles & techniques. St Louis: CV Mosby, 1985:647.
3. Barry Doyne McNew. Treatment of a patient with a mutilated Class II, Divison 1 malocclusion & a dolichofacial skeletal pattern. AM J ORTHOD DENTOFAC ORTHOP 1995;108:542-6.
4. Gerald A. Smith. Treatment of an adult with a severe open bite & mutilated malocclusion without orthognathic surgery. AM J ORTHOD DENTOFAC ORTHOP 1996;110:682-7.

BOOK REVIEW

Institutionalised approach - Total Health Care for Rural and Semi Urban population at the door step - free of cost

Author : **Prof. N. Shridhar Shetty**
Ex. Dean
A.B. Shetty Memorial Institute of Dental Sciences
Daralakatte, Mangalore - 575018
(Karnataka) India

Prof. Shridhar Shetty a known teacher; philosopher, clinician, active researcher and past President of DCI has published a monogram based on conceptualisation and implementation of his dream project 'Institutionalised approach - total health care for rural & semi urban population at the door step - free of cost".

Personally realizing the hardships faced by the poor patients coming for treatment from distant rural areas but not been able to avail access or afford the facilities due to several socio-economic reasons, the despair amongst there poor patient left an indelible impression in his mind. He decided to take this project. The endeavor received fullest support from his friend and collegue Shri N.V. Hegde, President of the Nitte Education Trust.

Under his this project over 15 lakhs of rural poor patients have been treated free of cost and this is still on with great enthusiasm. The success of this project infact motivated him to write this paper for benefit of all who may like to adopt and undertake this noble project in their area. The paper deals in detail procedures and guidelines and could be recommended to the dental institutions and voluntary organisations. Introduction of such projects in rural and semi rural areas of this country could go long way in promotion of oral health meeting, the oral health needs of those who do not have access to dental care or are unable to afford the same. The monograme can be obtained from the Author.

Reviewed by:
Prof. (Dr.) V.P. Jalili,
Director
P.G. Studies & Research
Modern Dental College &
Research Centre, Indore