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STUDY TO KNOW THE EARLY MANAGEMENT OF CLASS III MALOCCLUSION

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Abstract:
Class III malocclusion presents a concave profile, dental mesococclusion, anterior crossbite and maxillary deficiency, skeletal imbalance, including mandibular excess or a combination. Instead of postponing treatment to older ages and treating the patient by camouflage or surgical procedures, the mild class III patients were chosen for early treatment with face mask, Frankel functional regulator, double-inverted block and mandibular inclined plane. The results were calm and encouraging.

Objective: *The aim of the study was to treat mild early class III malocclusion cases and evaluate the results of treated cases.*

Study Design: *An analytical and observational Study.*

Place and duration: *In the Department of Orthodontics, Nishtar Hospital, Multan for one year duration from February 2018 to February 2019.*

Method:*. A total of 55 cases, 38 males and 17 females were selected to treat class III occlusion problems. The age of the patients ranged from 6 to 9 years. Patients were treated with functional instruments, curved mandibular planes and face masks.*

Results: *The orthodontic treatment with orthopedic devices was mainly due to patient compliance, availability and cooperation, some patients could not complete the treatment. Therefore, we present the results of ten patients for each modality, which shows a significant improvement in tooth and skeletal problems.*

Conclusion: *When functional braces were provided, it was concluded that young children with mild Class III problems may have better opportunities for camouflage treatment at later ages and that the need for surgery can be eliminated.*

Key words: *Class III malocclusion, maxillary deficiency, mandibular excess, mandibular molar.*

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INTRODUCTION:

Class III malocclusion occurs as a concave profile and a prominent mandible, and it is determined that mandibular molars are placed too far in relation to the upper molars [1-3]. The meso-buccal summit of the maxillary first molar clogs the mandibular first molar with the distobuccal peak and the mandibular second molar with the mesiobuccal peak [4]. Maxillary incisors are mandible for mandibular cutter parts that appear as anterior crossbite. Skeletal imbalance consists of:

• Maxillary deficiency leading to antero-posterior, vertical and lateral directions, short facial height and narrow maxilla leading to a concave profile.

Mandibular redundancy, defined family and race tendencies are present in mandibular prognosis [5]. Class III malocclusion therapy requires appropriate treatment at specific times with mild to moderate III occlusion [6]. In class cases, it can solve the problem satisfactorily by early intervention with the use of flat sloping mandibular functional devices.

III. Class malocclusion therapy includes:

• With orthopedic strength

• The face mask applied to the mandible to stimulate the growth of the maxilla and to limit the growth of the rapidly growing mandible, the forces have effects on the growth zones.

• The chin cup is applied to the prognostic mandible to slow its rapid growth.

• Functional apparatus also works in the same way as the mandible container, which tends to rotate the chin down and back, this downward position of the mandible stimulates the bursting of the teeth and consequently increases the height of the face [7]. Functional orthopedic devices show a good response when establishing a normal relationship with the skeleton bases and ensuring a sufficient increase in face height [8]. The overall effect of the reverse gear was to produce a forward movement in the maxillary teeth with little or no real skeletal effect on the maxillary teeth. The reverse gear applies a reciprocal force to the down and back chin [9]. Repositioning the mandible in this direction is frequently observed and is mostly the main effect. 'Delaire and one of his colleagues in France, if the treatment began at an early age, forward positioning of maxilla with reverse headgear treatment is successful [10].

MATERIALS AND METHODS:

This analytical and observational Study was held in the Department of Orthodontics, Nishtar Hospital, Multan for one year duration from February 2018 to February 2019. Young patients with mild class III were selected for treatment and follow-up. The selection criteria are as follows:

• Young children aged 6 to 9 years.

• Mild class III

• Short face height

• Normal or protruding lower incisors. Patients were treated with three different treatment modalities; FaceMask, inclined planes and functional tools.

The mask was combined with a maxillary acrylic splint affixed to the maxillary tooth, the force was applied to the splint maxillary arch by fixing with the help of 5 x 16 heavy elastics for at least 20 hours per day. The duration of treatment was extended to 10 to 12 months plus an additional six months retention time with a bionator. Other patients with mild class III, maxillary or more normal, mild mandibular prognathism, anterior crossbite, and deep bite tendencies were selected for concave-profiled treatment. The plane was cemented into the lower front teeth. The devices were used for 3 to 4 weeks. Patients were selected with functional apparatus, FFR III and reverse twin block with mild grade III, retrognatic maxilla, prognostic mandible, deep bite, anterior crossbite, lower lip prominence and concave profile. Treatment was initiated with the labial pad FFR III device to stimulate maxillary growth The treatment was extended for 8 to 10 months, patients with good cooperation showed the results of cross bite transformation from edge to edge, and were also treated with inverted twin block for an additional 6-8 months. The clinical records before and after the treatments were evaluated for the profile, molar ratio and anterior crossbite. Also, the upper and lower teeth were evaluated for positions with their skeletal bases.

RESULTS:

Some of the 55 patients selected for treatment with different devices were unable to complete some of their treatments due to different reasons (residence transfer, lack of interest, lack of cooperation from patients and / or parents, etc.). 10 patients Modality is presented for each treatment. Patients who demonstrated their contribution to the class III malocclusion were selected for treatment with facemask. In these children <SNA values (77 ° -80 °) and prognostic mandible <SNB (80 ° 82 °), mandible incisions are straight or slightly inclined <IMPA (91 °) -94 °). The use of a face mask caused changes in the base and teeth of the skeleton. The effects of treatment on the maxilla are indicated by the forward movement of point A, resulting in <SNA increase ranging from (77.9 ° -80 °) to (80 ° -81 °); 2.1 °; The results show an improvement in maxillary growth. <The changes observed in SNB indicate the redirection of mandibular growth. <SNB (80 ° -81 °) to (79 ° -80 °), the average difference is 1.2 °, this

change is seen as the rotation of the mandible backwards. A 2 ° increase in <N-ML and a 3 ° increase in <NSL-ML confirm the downward rotation of the mandible as a result of treatment. In clinical examination, patients showed a significant reduction in the clarity of mandible and incisors, concave profile in the flat profile, and a positive response between class III and class I obstruction (Table I).

TABLE I: TREATMENT RESULTS WITH FACE MASK

Measurements	**Pre treatment**	**Post treatment**
SNA	77.9	80.0
SNB	80.3	79.1
ANB	-1.3	0.33
Y-AXIS	67.7	68.6
NL-ML	32	32.3
IMPA	**92**	90.6
UI-NL	**101.6**	**112.3**

. A slight backward position of the mandible was also observed and confirmed by changes in <SNB (80.2 ° -79 °) (Table II).

TABLE II: TREATMENT RESULTS WITH MANDIBULAR INCLINED PLANE

Measurements	**Pre treatment**	**Post treatment**
SNA	**80.9**	**81.1**
SNB	**80.2**	**79**
ANB	**.7**	**1.2**
Y-AXES	**66**	**65**
NL-ML	**20.5**	**22.7**
NSL-ML	**31.7**	33.8
IMPA	**93.5**	**91.6**
UI-NL	**1.3**	**114**

The use of reverse twin block allowed the mandible to grow downwards and backwards. (Table III)

TABLE III: RESULTS OF TREATMENT WITH FUNCTIONAL APPLIANCES

Measurements	Pre treatment	Post treatment
SNA	76.8	79.9
SNB	80	79.4
ANB	-2.5	00
Y-AXIS	65	65
NL-ML	20	20.5
NSL-ML	31.5	31.9
IMPA	91	90
UI-NL	113	125

DISCUSSION:

The aim of class III malocclusion therapy is to provide rapid resolution of this malocclusion in order to predict the response of the treatment at a very young age [11]. The selection, growth, tissue response and the patient's most important cooperation are as follows. Class III mutations in development are treated with different treatment methods and have effects on different tissues on the skeleton and teeth [12]. Mandibular repositioning, ie, downward and backward displacement, is a consequence of treatment often seen in all approaches [13]. The development of maxillary growth in the sagittal and vertical directions is a positive finding in patients treated with masks and functional instruments. A large number of case reports confirm that skeletal mismatches are reduced due to changes in size and position of the maxilla and mandible [14]. In almost all cases treated with different devices, ANB changes are observed. Changes in the ANB - + are related to the forward and downward movement of the mandible, which allows the point to move a larger forward and downward direction, as well as the down and return of the mandible [15]. Other studies also suggest early intervention to prevent deterioration of the current problem and to minimize or eliminate the need for comprehensive orthodontic treatment at later ages. "

CONCLUSION:

This study is the result of early treatment of class III development by previous methods, resulting in the following results:

• Forwards and downwards movement in maxillary and maxillary teeth.
• Mandible rotation in downwards and backwards.
• Slight increase in height of lower face.

REFERENCES:

1. Zupnik, J. T., M. Ioshida, M. Yatabe, A. C. O. Ruellas, L. R. Gomes, S. Aronovich, E. Benavides, S. P. Edwards, B. Paniagua, and L. H. S. Cevidanes. "Three-dimensional analysis of condylar changes in surgical correction for open bite patients with skeletal class II and class III malocclusions." *International journal of oral and maxillofacial surgery* (2019).
2. Pavoni, Chiara, Francesca Gazzani, Lorenzo Franchi, Saveria Loberto, Roberta Lione, and Paola Cozza. "Soft tissue facial profile in Class III malocclusion: long-term post-pubertal effects produced by the Face Mask Protocol." *European journal of orthodontics* (2019).
3. Barelli, Enrico, Ennio Ottaviani, Pietro Auconi, Guido Caldarelli, Veronica Giuntini, James A. McNamara, and Lorenzo Franchi. "Exploiting the interplay between cross-sectional and longitudinal data in Class III malocclusion patients." *Scientific reports* 9, no. 1 (2019): 6189.
4. Iwasaki, Tomonori, Hokuto Suga, Ayaka Yanagisawa-Minami, Hideo Sato, Makiko Sato-Hashiguchi, Yoshito Shirazawa, Toshiya Tsujii, Yuushi Yamamoto, Ryuzo Kanomi, and Youichi Yamasaki. "Relationships among tongue volume, hyoid position, airway volume and maxillofacial form in paediatric patients with Class-I, Class-II and Class-III malocclusions." *Orthodontics & craniofacial research* 22, no. 1 (2019): 9-15.

5. Zhang, Menghan, Shengjie Liu, Si Chen, Fengyang Yu, Chong Zhong, Jialiang Huang, and Haiping Lu. "Induced ankylosis of primary canines for absolute anchorage in the treatment of a patient with Class III malocclusion and cleft soft palate." *American Journal of Orthodontics and Dentofacial Orthopedics* 155, no. 3 (2019): 398-410.
6. Nakatsugawa, Kohei, Hiroshi Kurosaka, Kiyomi Mihara, Susumu Tanaka, Tomonao Aikawa, Mikihiko Kogo, and Takashi Yamashiro. "Orthodontic-Surgical Approach for Treating Skeletal Class III Malocclusion With Severe Maxillary Deficiency in Isolated Cleft Palate." *The Cleft Palate-Craniofacial Journal* 56, no. 3 (2019): 400-407.
7. Duran, Gökhan Serhat, Furkan Dindaroğlu, and Pınar Kutlu. "Hard-and soft-tissue symmetry comparison in patients with Class III malocclusion." *American Journal of Orthodontics and Dentofacial Orthopedics* 155, no. 4 (2019): 509-522.
8. Jing, Wu Di, Li Xu, Xiao Xu, Jian Xia Hou, Xiao Tong Li, Dan Ni Guo, Yu Shu Liu et al. "Association between Periodontal Biotype and Clinical Parameters: A Cross-sectional Study in Patients with Skeletal Class III Malocclusion." *Chin J Dent Res*22, no. 1 (2019): 9-68.
9. Cheng, J.H., Chen, C.M., Chen, P.H., Chou, S.T., Pan, C.Y. and Tseng, Y.C., 2019. Comparison of Pharyngeal Airway between Mandibular Setback Surgery Patients (Skeletal Class III) and Nonsurgery Patients (Skeletal Classes I and II). *BioMed Research International*, *2019*.
10. Gazzani, Francesca, Chiara Pavoni, Paola Cozza, and Roberta Lione. "Stress on facial skin of class III subjects during maxillary protraction: a finite element analysis." *BMC oral health* 19, no. 1 (2019): 31.
11. Martin, C., J. A. Alarcon, J. C. Palma-Fernandez, and A. Iglesias-Linares. "Subclustering in Skeletal Class III Phenotypes of Different Ethnic Origins: A Systematic Review." *The journal of evidence-based dental practice* 19, no. 1 (2019): 34-52.
12. Cullati, F., F. M. E. Rusconi, A. Mapelli, M. Zago, G. A. Beltramini, A. B. Giannì, and C. Sforza. "Three-dimensional longitudinal evaluation of facial mimicry in orthognathic class III surgery." *International journal of oral and maxillofacial surgery* 48, no. 3 (2019): 355-363.
13. Rédua, Renato Barcellos, Robson Almeida de Rezende, Carlos Eduardo de Almeida Ferreira, and Márcio Rodrigues Bittencourt. "A complex orthognathic surgical approach correcting a Class III malocclusion involving traumatic dental injuries and a maxilla fracture." *American Journal of Orthodontics and Dentofacial Orthopedics* 155, no. 5 (2019): 702-713.
14. Romero, L.G., Mulier, D., Orhan, K., Shujaat, S., Shaheen, E., Willems, G., Politis, C. and Jacobs, R., 2019. Evaluation of long-term hard tissue remodelling after skeletal class III orthognathic surgery: a systematic review. *International journal of oral and maxillofacial surgery*.
15. Sandoval, Camilo, Alejandro Díaz, and Germán Manríquez. "Relationship between craniocervical posture and skeletal class: A statistical multivariate approach for studying Class II and Class III malocclusions." *CRANIO®* (2019): 1-8.