Case Report

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IN the treatment of this Class I case the malocclusion was at first analyzed as a Class II, Division I case and is submitted to better illustrate an atypical Class I case with biomechanics of Class II, Division I.

History of Patient.—This boy presented for treatment at 13 years of age. His general physical health was good. His mother reported a regular period of gestation

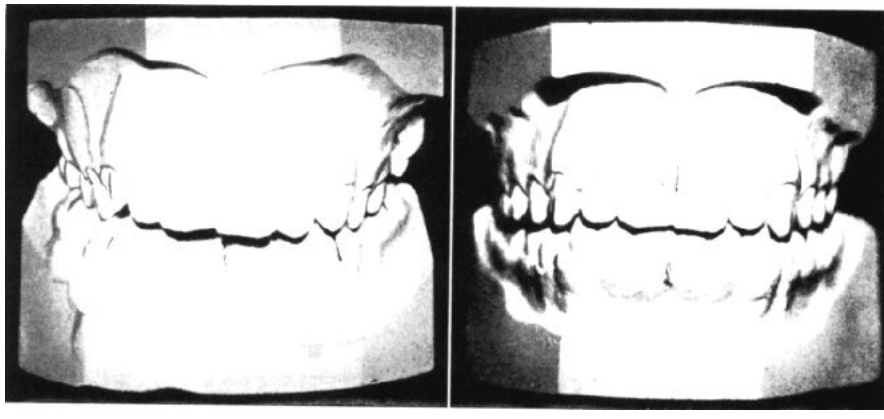
and a normal delivery. His birth weight was 7 pounds and 8 ounces. Breast feeding was attempted for the duration of one month when it was found necessary to substitute this method with bottle feeding. The formula consisted of condensed milk, cream, and lime water. This diet was not supplemented with cod liver oil, orange juice or other vitamin supplements. Parents reported no abnormal habits such as thumbsucking.

It was almost impossible for the parents to get the lad to eat the more health building foods in early childhood. The premature loss of all deciduous teeth was attributed to his eating a great variety of sweets.

His growth progress was reported to have been of an even nature. The health of the father, mother and sister was reported good, but the mother and sister each have an overbite similar to that of the boy. Childhood diseases included chicken pox and measles. The tonsils and adenoids were removed at 7 years of age.

The boy's shoulders were rounded similarly to those of his father. The upper lip was underdeveloped and the lower was slightly overdeveloped. Head measurements designated a brachycephalic type.

Case Analysis.—Normal inclined plane relationship was present only in the right maxillary and mandibular molars. The left mandibular first molar was in position of



slight mesial axial inclination, the left maxillary first molar having beeen extracted at 7 years of age. The second molar partially filled this space. Observations of the corresponding teeth on the opposite side of the dental arch presented a mesial axial inclination of the lower first molar but a normal inclination of the maxillary first molar. Both maxillary buccal segments migrated forward and with the position of the incisors of the same arch, the case presented a Class II, Division I relationship. The axial inclination of the lower canines was seemingly normal. Readjusting the position of the lower right first mandibular molar indicated a Class II, Division I case.

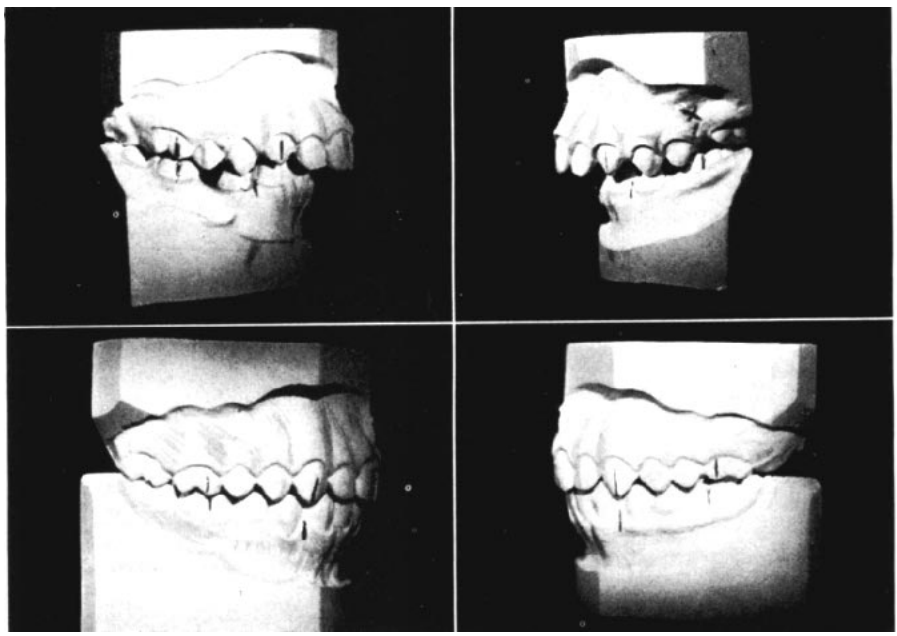
Harmony of the mid-central line with the mid-sagittal plane of the head indicated a normal median line. The presence of rotated teeth in the buccal segments was recognized as a disturbing factor to incline plane adjustment. A study of intraoral roentgenograms verified the loss of the left maxillary first molar but showed no other abnormalities.

Examination of the profile photographs and study of the patient revealed that the body of the mandible was in normal relationship to cranial anatomy, hence the case was classified as Class I with biomechanics of Class II, Division I.

Outline of Objectives.—The objectives of treatment were, (a) to move the mandibular molars distally, also the maxillary molars, bicuspids and canines dis-

tally until normal incline plane relationship with the mandibular arch units could be established, (b) to correct infra and supraocclusion of both maxillary and mandibular incisor groups, (c) to move maxillary central and lateral incisors lingually, (d) to effect general arch growth, (e) to reestablish normal growth, functional activity and muscular balance and harmony in associated tissues.

Case Treatment.—The teeth were first banded and treatment started with the ribbon arch mechanism (430 X A bands). This treatment extended over a period of one year. This work accomplished the following changes, i.e., gaining bicuspid width, rotation of upper right molar, development of upper left second molar into the line of occlusion, correction of supraocclusion of incisors, both in maxillary and mandibular arches. An attempt was made to gain space for mandibular second bicuspids.

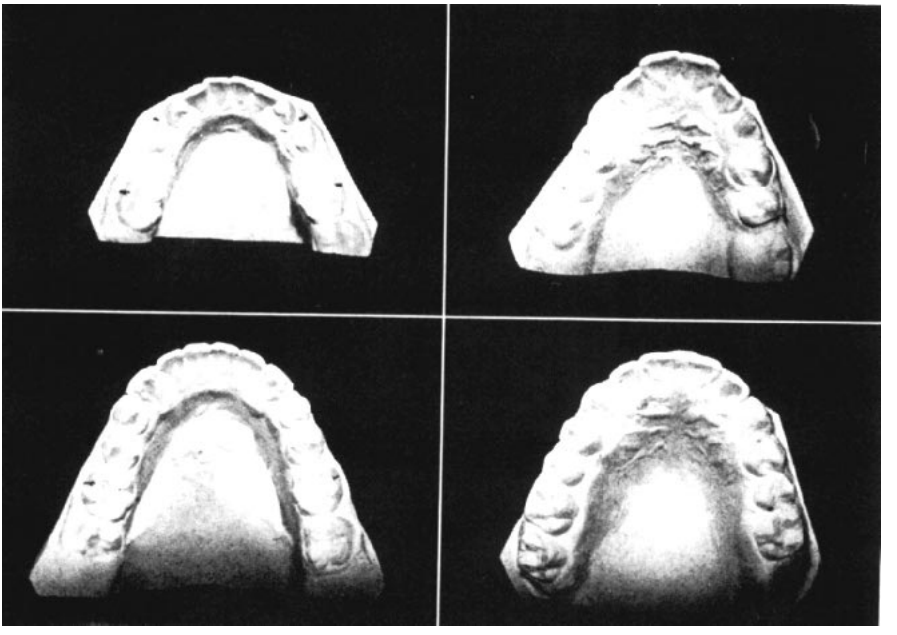


At the end of one year all of these bands were removed and replaced by the edgewise arch mechanism (G 452 brackets). It was possible to band all teeth with the exception of the two mandibular second bicuspids. Rotating arms were placed on all bicuspid bands in which this type of movement was indicated. An ideal archwire (.0218 S. S. Arch) was placed in both maxillary and mandibular arches. After rotation of the first right mandibular bicuspid, bracket engagement of all teeth of this arch had been achieved. This completed, an ideal archwire (G .022 x .028) was formed and placed with vertical spring loops soldered mesial to molar tubes with staples soldered on distal end of archwire and anchor spurs positioned mesial to first bicuspids. Space for second bicuspids was obtained by placing traction on vertical spring loops. These teeth were then banded and bracket engagement of the same effected by replaced .0218 S. S. archwire. Stationary anchorage in this mandibular arch was obtained by placing an ideal edgewise arch (.022 x .025 S. S.) with molar stops.

During the time of treatment of the mandibular arch proper alignment of the

maxillary dental arch was completed with the exception of the distal movement of the same. Tip back bends were placed in the archwire (.0218 S. S. ideal archwire) together with indicated traction and anchor spurs, intermaxillary elastic hooks. The patient was instructed to wear the intermaxillary elastic bands continuously. The following appointment with the patient found all teeth in their proper incline plane relationship. He was allowed to wear the elastics for another period between appointments when the use of the same was discontinued permanently. This result was kept under observation for several weeks prior to the placing of retainers.

Treatment of Abnormal Muscular Tissues and Actions.—The following exercises were used, (a) "Lip elongating exercise." The patient was instructed to bring the



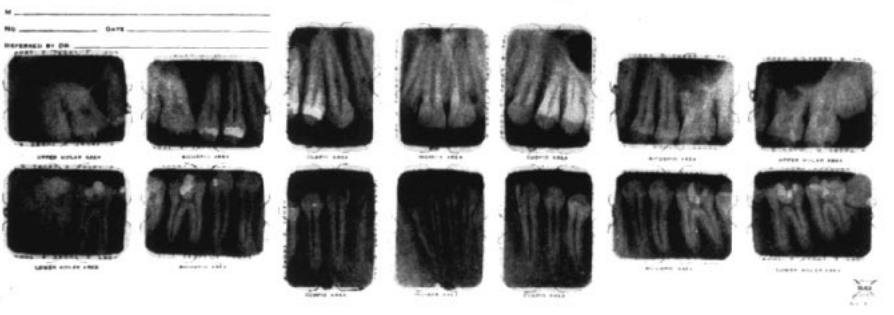
upper lip down in forced muscular action until it completely covered the upper incisors and was forced with pressure against their crowns. Instructions were given to guard against pressure from the lower lip, hence, the patient was directed to grasp the lower lip with his fingers and pull it away from the lower front teeth while the upper lip was contracted. The patient was asked to count to twenty to himself while muscles were in contraction and to do this as many times a day as possible.

(b) "Passive swallowing exercise." This exercise was given to train the muscles active in swallowing function, to overcome hypersucking contraction and tongue thrusting spasm. The patient was instructed to stand before a mirror to observe actions of lips and jaws with the first step being to place the teeth together, gently, and to keep them in this position all through the exercise. Secondly, he was told to close the lips gently and swallow, remembering to keep the teeth together, lips quiet and tongue in the mouth and not pressing against the front teeth. He was instructed to take a sip of water whenever it became difficult to perform this act.

Retention.—The mechanical retention placed in the maxillary arch was a vulcanite plate with labial wire (.028 S. S.) extending from the distal of both incisors. A cuspid-to-cuspid retainer with lingual wire (.030 G) was cemented to place in the

mandibular arch and allowed to remain in this position for a period of one year when it was removed together with the vulcanite plate of the maxillary arch. The patient was requested to continue the exercises as faithfully as had been done when the appliances and retainers were in place.

Results of Orthodontic Treatment.—This case of oral underdevelopment was completed after two years of active treatment. Examination of the patient's x-rays and



mouth one and one-half years after treatment revealed that the tissues of the teeth and surrounding structures were in good condition and that the objectives outlined were accomplished to the satisfaction of both the parents and orthodontist. The left third maxillary molar was noted to be occluding with the second left mandibular molar.

Summary.—With the splendid cooperation of the boy the period of active treatment could have been reduced from four to six months had the edgewise arch mechanism been used when the work was started. The case was of particular interest due to its close similarity to Class II, Division I malocclusion.

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