

Case Report

TREATMENT OF A CLASS II DIVISION 2 MALOCCLUSION

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THIS REPORT covers the treatment and retention of a patient with Class II Division 2 malocclusion.

History. The patient was a fine looking, intelligent boy of fourteen. His parents were descended from early New England settlers. His ancestry was a mixture of French, English, and German. He was delivered by breech birth after nine months of pregnancy and his weight at birth was nine pounds. He was breast fed with a supplementary feeding. In childhood he was a moderate eater. He had plenty of milk, eggs, cereals, fresh vegetables, and meat.

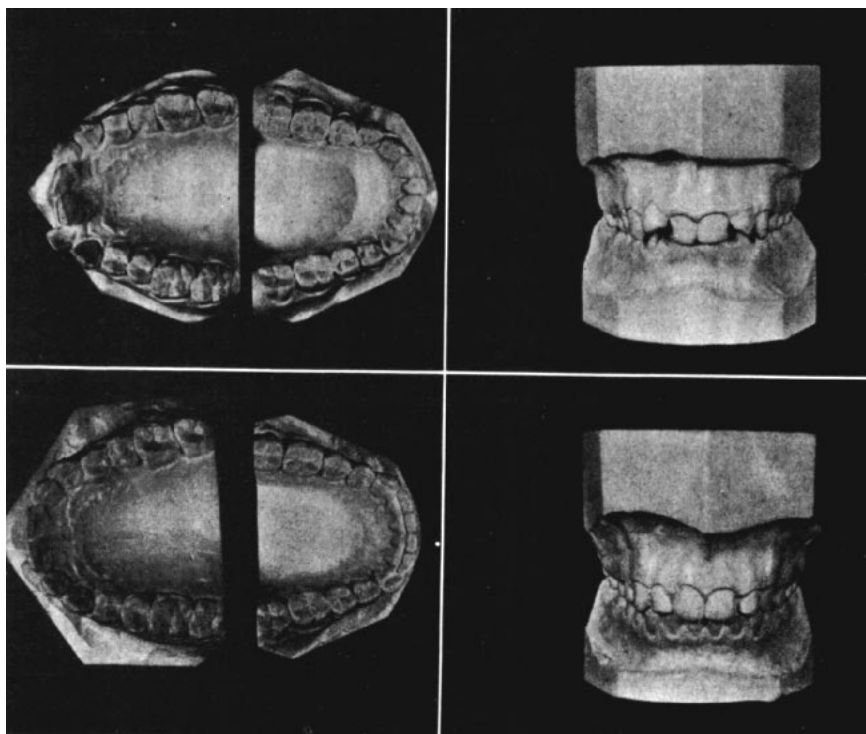
The mother had good occlusion while the father's was very poor. Both parents have enjoyed excellent health. The one other child in the family has an excellent occlusion. The patient's health has been good as a whole. He had measles when three years of age, mumps at seven, whooping cough at eight, and scarlet fever at twelve. He weighed 110 pounds at the beginning of treatment, his height was five feet four and one-half inches. He is of slender build with excellent posture. Tonsils and adenoids were removed at thirteen years.

Dental and Orthodontic Physical Examination. The face and cranium were ovoid in shape. The tongue was normal in size and usually was in its correct position. The osseous development of the mandible was a little under normal. The X-rays showed a full set of teeth free from caries. The models showed a permanent dentition oval in shape with no abnormalities in size or form of the individual teeth. The lower teeth were regular in alignment but did not show a perfect arch form. The occluded gnathastatic models show that the jaws, dental arches, and teeth were not in correct mesio-distal relation. This case is a typical Class II Division 2 malocclusion.

Case Analysis. The patient had two habits which possibly had a role in the etiology of this case; first a habit of continually resting his chin on his hands, either one or both hands; second an established habit of sleeping on his stomach. These two factors alone would have prevented the normal forward growth and development of the mandible. The leaning habit may have caused the two upper central incisors to remain close to the lower anteriors as the patient said that while his chin rested on the palm of his hand, his index finger was curled up over the upper lip so that it exerted pressure over the area of these two teeth.

In stating what has happened, the following points should be taken into consideration. *First*, the relation of the mandible to the skull. This point is determined by the orthodontist's own conception of facial type and balance. *Second*, the relationship of the teeth to the jaws. Under this point

we first see if there is any tipping or drifting of the teeth. In the upper arch there has been a mesial shifting of the teeth distal to the central incisors. The two lateral incisors are definitely tipped mesially and rotated. Next we must determine whether or not the upper first molar is under the key ridge. This is difficult because there is considerable leeway here, and again the decision rests with the conception of the individual orthodontist. I believe that in this case the two upper first molars are slightly anterior to their normal position under the key ridges. The teeth in the lower arch are not noticeably crowded or tipped. *Third*, the relationship of the teeth to each



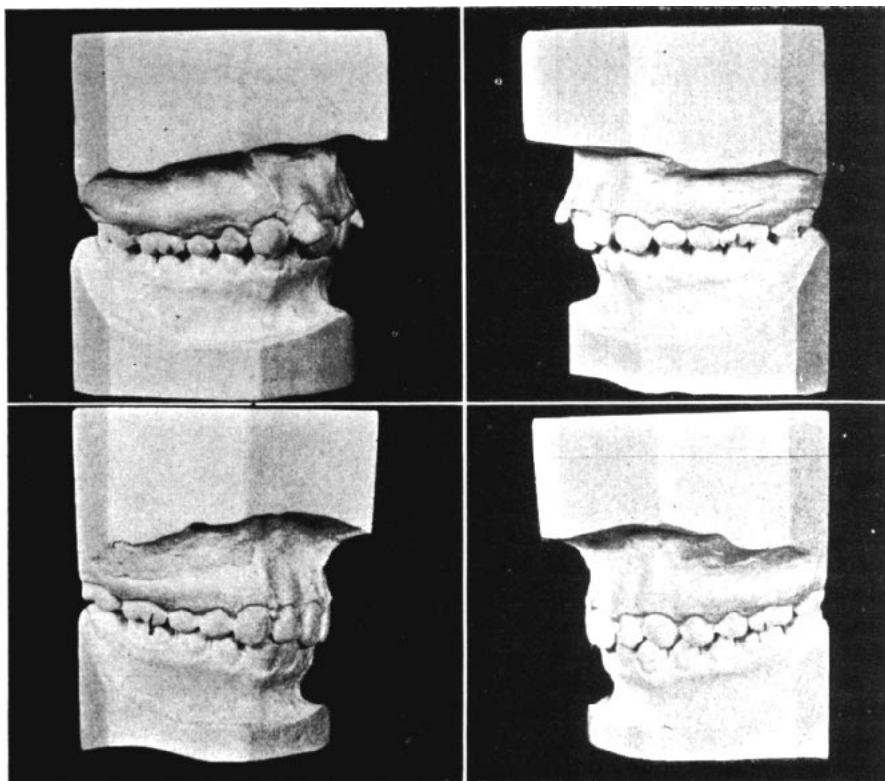
other is considered. All of the teeth on both sides of the lower jaw, from the cuspids back to the second molars, are in distal relation to the upper teeth by slightly more than the extent of one half the width of the mesial buccal cusps of the upper first molars. The upper lateral incisors are tipped mesially and labially, and rotated so far that they are not in occlusion with any of the opposing teeth. The two upper central incisors occlude with the lower anterior teeth. The median line of the two arches harmonizes. There is a definite overbite as the incisal edges of the upper central incisors are in contact with the gingival border of the lower anterior teeth.

The patient has been very co-operative in overcoming the habits listed, and to the best of my knowledge has no perverted influences at present.

Outline of Treatment Objectives. The objectives of treatment were as follows: to obtain an ideal lower arch form and establish stationary anchor-

age, to move the upper teeth distally until they are in their correct mesio-distal relation with the lower teeth, to reform the anterior segment of the upper arch, to open the bite until there is the correct amount of overbite, to have both arches conform to the ideal arch form and be in correct relation to each other and to the skull.

Mechanics of Treatment. Edgewise bracket bands were placed on the six lower anterior teeth and the four bicuspid. Bands were placed on the six year molars, .022 X .028 tubes were soldered edgewise to the bands. In the upper arch edgewise bracket bands were placed on all of the teeth



up to the first molars. The first molars were banded and had .022 X .028 tubes soldered edgewise to them. A .015 round wire was first placed in the lower arch. This was replaced later with a .020 round wire. This was followed in three weeks by a .015 X .022 formed on the ideal arch plan.

In the upper arch, a section of .020 chrome alloy round wire was placed on each side of the mouth extending from the first molar to the mesial of the first bicuspid. A hook was soldered on the mesial end of each wire. A stop was soldered on each wire mesial to the molar tubes and a small section of coil spring was placed between the stop and the molar tube. The patient was then instructed to wear intermaxillary rubbers. As the molars gradually moved distally, additional lengths of coil spring were added. After four months the necessary distal molar movement was accom-

plished and two new sections of the same size wire as the above were placed on each side. The intermaxillary elastics were again worn by the patient until the bicuspid were moved distally.

A .020 round wire formed into an ideal arch was next placed in the upper arch. This had intermaxillary hooks but no stops mesial to the molar tubes. The arch wire was bent mesial to the molar tubes in order to depress the anterior teeth and tip the molars distally. The patient again wore intermaxillary elastics until such time as the anterior teeth were moved distally. The round arch was replaced with an .018 X .022 wire bent to an ideal arch form. After all rotations and tipping had been completed, the appliances were removed. The active treatment required fourteen months.

Outline or Retention. In retention, the object was to maintain the teeth in their new positions until the supporting tissues became modified in structure and function to meet the new requirements. This was done by allowing freedom of movement in every direction except that in which they wished to return. A cuspid to cuspid retainer was placed with the lingual bar just above the cingulum of the incisors. In addition a vulcanite plate was placed extending distally as far as the second molars. In the maxilla a vulcanite plate was used with a .022 X .028 labial wire mesial to the four incisors. In addition there was a clasp over the labial surface of the cuspids, with an additional clasp mesial to the first permanent molars.

Comment. After ten months of retention the teeth have shown no inclination to return to their original positions. The patient has overcome his leaning and sleeping habits and has given the amount of co-operation which one has a right to expect during this very critical period of retention.

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