Case Report*

Asa J. La Grow, D.D.S.
Oak Park, Illinois

This Case, a Class II, Division I (Angle) was selected to report because it was one of the first cases where I employed Class III intermaxillary anchorage and occipital anchorage in an effort to maintain the lower denture on its supporting bone structure.

History of Patient

This child is a daughter of an American family of the upper middle class, and was eight years and nine months of age when she presented for examination in August, 1938. The mother states that she has always been a nose breather. Her weight was 61 pounds at that time. Her birth weight was seven pounds and four ounces. She was breast fed for three months with supplemental feeding. Bottle feeding was discontinued at the age of nine months. Her physical development was somewhat retarded for her age. Her mental development was very good and she was well integrated with her group at school and made good grades. She was a very satisfactory patient.

Family History

Both parents have Class I malocclusions. A brother, two years older, had a Class I malocclusion.

Disease History

She had a severe case of whooping cough at the age of four years, and had measles the same year. There were frequent colds, ear trouble and throat infections. At age five years there was measles again, and chicken pox. There was a tonsilectomy performed at the age of six years. At age eleven there was a pneumonia with some heart impairment which may be temporary. She carries a low metabolic rate.

Dental and Orthodontic Examination

The head is moderately dolichocephalic and the face is an oval type. The vertical height of the face is deficient for her developmental age. The profile reveals a protrusion of the upper lip which is also somewhat short. The chin point is normal. The facial musculature was normal in tonus and function except for the upper lip which had poor function. The lower lip was used exclusively in lip closure but the mentalis muscles were almost normal. The tongue was considered by me to be normal in position, size and function. Deglutition was normal. The temporo-mandibular articulations were normal.

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FIG. 1. Eleven years, seven months—June 4, 1941—Beginning of active treatment.

TYPE OF MALOCCLUSION

Class II, Division I, with severe rotations of the upper right and left second bicuspids.

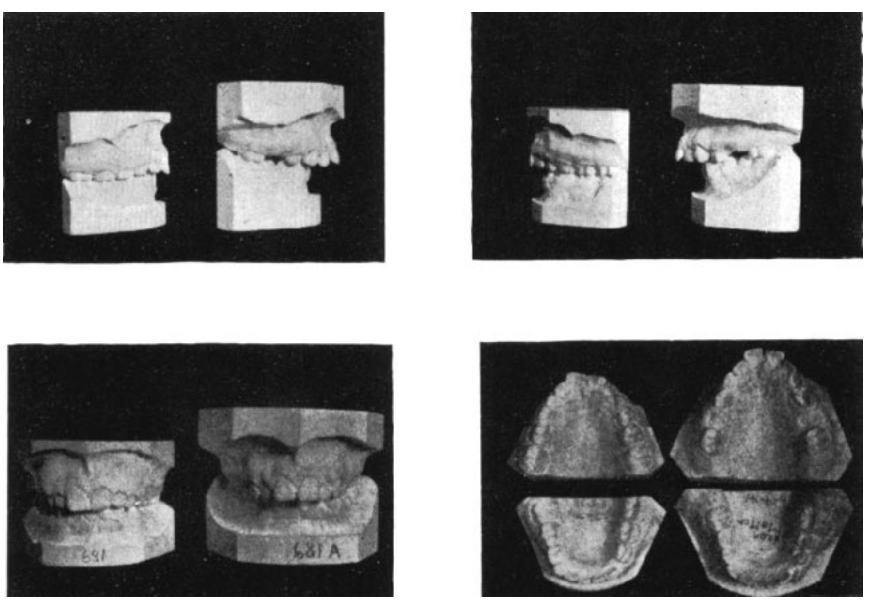

FIG. 2. Casts on the left side of each panel represent the pretreatment stage, taken August 5, 1938, at age eight years and nine months. Casts on the right side of each panel were taken at the beginning of the active treatment, age eleven years, seven months, June 4, 1941.

CASE ANALYSIS

The salient features were a Class II, Division I condition with the body of the mandible and its superimposed denture in distal relationship to cranial anatomy and the maxillary incisors were in labial axial inclination. The mesiobuccal cusps of the maxillary first molars were rotated lingually and mesially. The maxillary second bicuspids were unerupted at the beginning of the active

treatment, and, upon eruption, were in extreme rotation, with their lingual surfaces rotated toward the distal surfaces of the first bicuspids. The lower denture exhibited a marked curve of Spee with the lower first molars tipped forward. The lower incisors had a normal relationship to their supporting bone structure and their incisal edges were in contact with the rugae of the maxilla when in the closed position. The lower left cuspid was partially blocked out labially, and had a labial axial inclination.

The action of the musculature on the malrelated arches was a factor in bringing about the arrangement of the teeth in the arches. The condition, however, appears to be the expression of a morphogenetic pattern which became more pronounced with the continued growth and development of the face and jaws.

Objectives of Treatment

1. To correct the axial inclination of the teeth of both arches and to establish a stable relationship of the teeth and alveolas processes to their supporting bone structure.

2. To correct relationship of the dental arches to each other and to cranial anatomy.

3. To improve facial balance.

4. To establish a satisfactory balance of all of the forces which play upon the denture in normal function.

Treatment Management

The patient presented for the first time in August, 1938 when the first casts and X-rays were made. The patient's age was eight years and nine months, and she had a body weight of 61 pounds.

No treatment was instituted at this stage of development. Eight subsequent examinations were made at intervals of five months when a second set of casts, X-rays and facial photos were made on June 11, 1941. Treatment was instituted at this time when the patient was 11 years and 7 months of age. Edgewise bracket bands were placed on all of the teeth except on the first molars which carried bands and rectangular tubes. The first arch wires placed were of .016″ stainless steel and remained in position for two weeks when they were changed to .018″ size, and in three weeks were changed again to .021″ x .025″. Slight tip-back bands were placed in the lateral segments of both arch wires with stops against the molar tubes. Class III intermaxillary anchorage was used to tip the lower lateral segments distally. The upper teeth were fortified with occipital anchorage. This was continued for three months, when Class II intermaxillary anchorage was begun and the upper tip-back bands were increased. The patient was seen at two week intervals except for summer vacations.

The active treatment was terminated on May 4, 1943 when all bands were removed. The duration of the active treatment was one year and eleven months. New casts and photos were made at this time.

FIG. 3. The patient, age thirteen years, six months, May 18, 1943, at the end of active treatment.

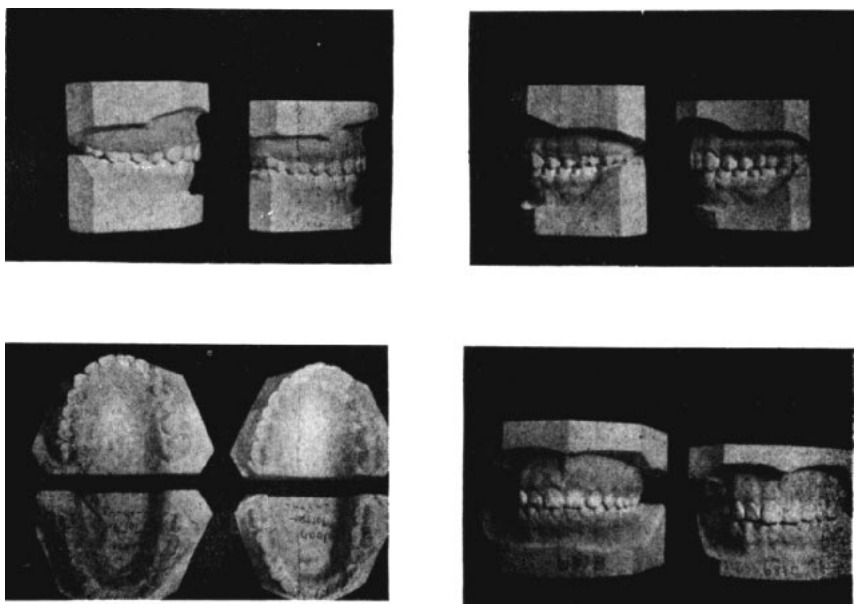

FIG. 4. Casts on the left side of each panel represent the completion of the active treatment, taken May 10, 1943 at age thirteen years and six months. Casts on the right side of each panel represent the condition two years after discontinuance of all retention, age seventeen years and two months, Dec. 14, 1946.

RETENTION

Bands were placed on the upper second bicuspids with buccal spurs to the first molars to maintain the corrected rotations. An acrelic upper Hawley retainer was made and also a lower lingual acrelic retainer with occlusal rests on the lower first molars. The bands and Spurs for upper second bicuspids were removed after being in place for six months. The acrelic retainers were continued for a full 18 months. No retention has been used since December, 1944. New casts, X-rays and photos were made December 14, 1946.

Note

There are three sets of X-ray films. The first set was taken at the age of eight years and nine months. The second set was taken at the age of eleven years and seven months when the active treatment was begun. The third set was taken at the age of seventeen years and two months, two years after termination of the retention period. These X-rays show four unerupted third molars which will be X-rayed again in one year. All of the X-ray films were projected as this report was presented.

Two years after termination of retention, December 14, 1946.
Age seventeen years, two months.

The lip closure became quite satisfactory and normal masticatory function was established. An exercise was given to stress the importance of lateral function in mastication.

Fig. 5. Patient at age seventeen years, two months. Two years after all retention was discontinued.

Summary

This case presented no unusual problems in treatment or retention. In my opinion the use of Class III intermaxillary elastics together with occipital anchorage applied to the upper arch have been of benefit in the correction of the lower dental arch. Nevertheless, the axial inclination of the lower incisors is somewhat more procumbent at the end of treatment than at the beginning of treatment. The patient is now 17 years and 2 months of age. The third molars are unerupted.

715 Lake St., Oak Park, Ill.