Case Reports

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This Class I case is characterized principally by the effects of perverted tongue position. The lower arch is excessively broad, grooved deeply along the lingual bone by pressure of the tongue, and all teeth presenting a lingual lean. In the upper arch there is an open bite from cuspid to cuspid conforming to the shape of the tongue. The upper left buccal teeth are in lingual position.

Fig. 1

Fig. 2

The patient is a well developed 18 year old girl (Figs. 1-2-3-4). She was a mouth breather at the beginning of treatment. Tonsils and adenoids are diseased, enlarged and still present. Between the ages of two and four the patient had in succession, measles, mumps, whooping cough, chicken pox. Pneumonia and many colds came later. Finger nail biting and thumb sucking were not stopped until the patient was about 10 years old. The inception of the tongue habit could not be determined. Speech was indistinct. Diet is at present still not the best and eating is hurried and irregular.

Etiology

Faulty tongue habit and position are the direct causes of the malocclusion. Diseased and enlarged tonsils are the underlying cause. The styloglossus is the principle muscle involved. This muscle extends from the styloid process and stylo-mandibular ligament downward and forward to divide and elevate the back of the tongue. This throws the anterior portion forward and down-

ward. The tongue thus comes to be in the floor of the mouth with its forward positioned tip lying between the anterior teeth.

Treatment

The edgewise arch mechanism was used. Tie bracket bands were placed on all anterior and premolar teeth. The first molars carried clamp bands with rectangular tiny tubes. Precious metal .022″ x .028″ ideal arches were used.

In the lower arch anterior bracket control was established as rapidly as possible for stationary anchorage. Buccal crown torque was introduced for premolar and molar corrections.

In the upper arch unilateral expansion for the left side was induced by an expansion bend at the left cuspid and buccal crown torque. This torquing force was first placed to act upon the left first molar only and later after the

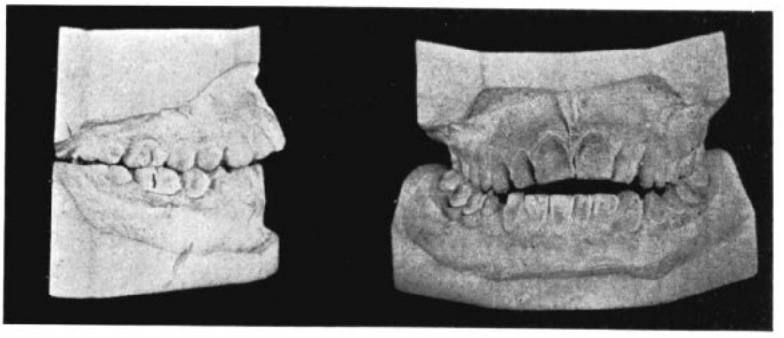

Fig. 3 Fig. 4

molar correction, the premolars one at a time were ligated to the arch and torqued into position. On the upper right lingual, torque was used. Criss-cross elastics helped break down the resistance.

As this treatment tends to temporarily open the bite, the upper incisor teeth were not ligated to the arch until its completion. The anterior open bite was then closed thru ligature traction and these teeth brought into proper position as related to the curve of Spee.

Treatment was begun in March 1934 and continued with poor patient cooperation until October 1935. At this time as the tongue was still holding the bite open, sharp spurs were soldered along the lingual seams of the two lower lateral bands, so that when placed back upon the teeth they extended ½ mm. above the incisal edge. The tongue habit was rapidly broken so that within eight weeks the upper appliances and within twelve weeks the lower appliances were replaced by retention devices. The finished case is shown in Figures 5-6-7-8.

Muscle Treatment

Throughout mechanical treatment muscle therapy was prescribed. However, cooperation was indifferent during the greater part of the treatment period.

The following exercises were used:

1. Press tongue to roof of mouth, open and close jaws with tongue held in this position, five minutes twice daily. A life saver mint may be used in the roof of the mouth for the tongue to hold in position.

Fig. 5

Fig. 6

2. Speech exercises: Tip of tongue movements and not jaw movements in speaking. Taught to talk slowly and deliberately. Repeat the consonants ten minutes daily. Peter Piper rhyme used.

Retention

Upper: Vulcanite roof plate to hold expansion.

Lower: Lingual wire from cuspid to cuspid with spur to disto-labial of left lateral to hold rotation.

Bands on first premolars with finger springs to buccal of second premolars to prevent buccal migration.

Conclusion

Treatment could have been improved upon by:

1. Better patient cooperation as regards exercises and intermaxillary elastics.

2. The occlusially extending spurs placed late in treatment, should have been placed at beginning of treatment.

3. Spurs should have been placed occlusially from the lingual retaining wire to lessen the chance of relapse.

4. The orthodontist should have insisted upon tonsil and adenoid re-

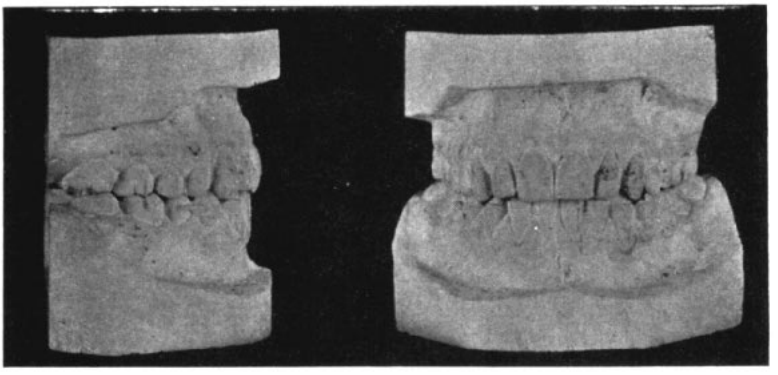

Fig. 7 Fig. 8

moval at beginning of treatment. However, after 12 months there has been no apparent relapse and speech has been greatly improved.

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This Class II, Division I case is complicated by a submerged upper right first molar and a congenital absent upper left lateral incisor.

The patient, a boy age 13 (Figs. 1-2-3-4-5), presented a history of mumps, measles, chicken pox, scarlet fever, pneumonia, and numerous colds. Tonsils and adenoids were removed at 12 years. Before treatment he was a mouth breather. Finger nail biting and thumb sucking were continued past 6 years of age. At present he still leans on his fist and frequently wets his lips. The patient has become less nervous during the period of time since first contact. General health is apparently normal in spite of a rather bad skin eruption.

Etiology

Several distinct and separate etiologic factors are involved in the production of this malocclusion. These are:

1. Those forces resulting from the Class II tooth relation acting against a short underfunctional upper lip and hyperfunctional lower lip and producing the characteristic mouth breather type case.

2. The retarded eruption of the upper right first molar made proper function impossible. This prevented the right anterior component of force from being set up as a growth factor.

3. Factors involving the congenital absence of the upper left lateral incisor. At the beginning of the treatment sufficient space had been maintained to accommodate a full size lateral. This indicates that function on the left had been far below normal and that the anterior component of force on this side, too, was weak.

Fig. 1

Fig. 2

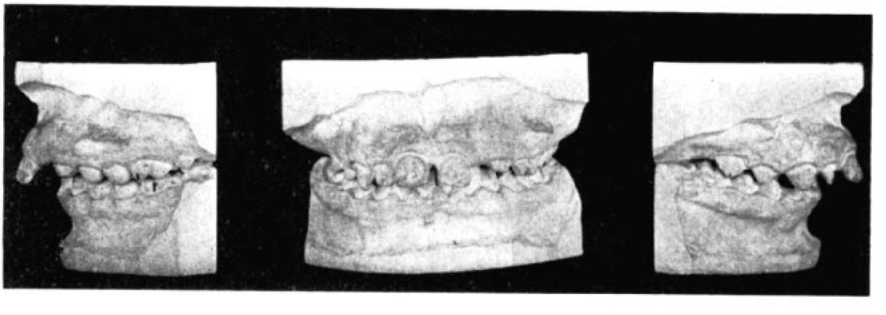


Fig. 3 Fig. 4 Fig. 5

4. No accurate history of tooth shedding was available but the presence of the upper left baby cuspid at 13 years would suggest that there had been shedding and eruption abnormalities.

All these factors probably arose from some one underlying cause related

to general body metabolism. The eruption difficulties account for the Class II conditions—the mouth breather; lip muscle factors account for the division one (of Class II) characteristics.

Treatment

Treatment was begun in April 1933, the edgewise arch mechanism being used. Tie bracket bands were placed on all teeth except the molars and the upper right second premolar. These teeth carried bands with buccal rectangular tubes. The arches were ideal .022″x.028″ precious metal. Stops were

Fig. 6

Fig. 7

Fig. 8 Fig. 9 Fig. 10

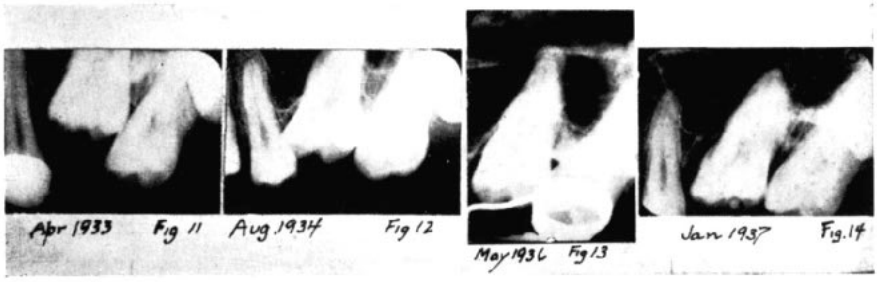
placed on the lower arch at mesial of both molars and advanced to gain space. Bracket control was gained as rapidly as possible through ligature traction.

Second order bends were placed in the upper left buccal segment and at the right cuspid. No second order bends were necessary elsewhere as the

right premolars were in proper cuspal relation. Hooks which soldered mesial to all four cuspids carried vertical elastics. Another elastic extended from upper right cuspid bracket distally over the end of the arch. This elastic helped carry the cuspid back to close the space between it and the first premolar. Rotation of the premolars was prevented by ligatures acting between staples on the bands and stops soldered to arch. Later when the deciduous cuspid was lost a finger spring was soldered to the upper arch to engage and guide the permanent cuspid into place. Rotations, axial proversions and vertical height relations, etc., were corrected by the usual Class II, Division I plan of treatment.

Five months after treatment began the upper left second molar had erupted sufficiently for a band to be placed. To this band was soldered a 19 gauge round straight buccal tube and a lingual eyelet made from .022 round wire.

A flat bottom "U" having legs of sufficient length to span the first molar



space was constructed from 19 gauge wire. This was placed to extend mesially from the second molar and rest against the second premolar at the contact point. The buccal leg of this space maintainer apparatus was threaded and equipped with an adjustable nut for increasing the space between the second premolar and the second molar. In this way excessive space was gained for the submerged first molar. During this period of treatment radiographic examinations showed that the molar was slowly moving occlusially. It is not known just why, 7 to 8 years after normal erupting time, the treatment used would result in such movement, for at no time was an attempt of any sort made to bring the molar occlusially. Due to a partial relapse after six months two periods of active treatment, requiring in all 18 months, were necessary. The space maintainer however was adjusted monthly until June, 1936. At this time the molar had broken through the gum and by December, 1936, approximately one third of the crown was showing (Figs. 11, 12, 13, 14).

Retention

Retention in the upper arch consisted of a vulcanite roof plate with cuspid-to-cuspid labial wire and lingual bite plate. The missing lateral incisor replacement was also attached to this roof plate. This is to be replaced later by a roof plate, bearing the lateral facing only.

In the lower arch a lingual cuspid-to-cuspid retainer is in use.

A third short period of treatment will probably be necessary to make final adjustments after the eruption of the molar is complete (Figs. 8, 9, 10).