Case Report

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The patient is a female, white, aged 15 years 10 months.

The diagnosis of this case is Class II division I (Angle) multilated by the loss of the upper right permanent first molar and the lower left permanent first molar. In my opinion, judging from the original lateral photograph, and the patient, and without the assistance of oriented lateral roentgenograms, this is a case of a distally locked mandible. Both arches are well aligned and the teeth well positioned in the arches. Both the overbite and the overjet are very severe.

Minor rotations exist. On the basis of the casts being trimmed with the bases parallel to the lower occlusal plane, the lower anterior teeth might be considered to be slightly tipped forward of the dental base; this being the anterior portion of the medullary bone of the mandible.

The original roentgenographic films display a good bone picture. A considerable amount of operative dentistry was necessary before orthodontic therapy was commenced. All third molars are present but unerupted.

HISTORY AND GENERAL CLINICAL PICTURE

This patient had a record of good nutrition during childhood, with the usual childhood diseases. The two permanent molars previously mentioned were lost due to caries at an early age. The state of the patient's health before, during and since treatment has been excellent. It has been interesting to note that this patient was extremely unhappy prior to treatment, was very depressed and felt that her appearance had a great deal to do with her general unhappiness. Physical development of the patient is good for her type and there is no record of endocrinopathy. The patient's posture was only fair and it is felt that her general appearance contributed to the slouching position she assumed.

ETIOLOGY

The patient sucked the thumb at a very early age only; that is not enough to cause the malocclusion seen here. There is little evidence of hereditary traits that might have been influential. It was my original opinion of this case that it represented a distally locked mandible and I still do not see that any clear cut etiology was evident. In calling this a distally locked mandible, it is recognized by the author that this case does not display any of the usual signs of distal locking. By usual signs, I mean specific teeth which, upon their correction, would let the mandible slide forward; rather the whole picture was one of distal locking.

TREATMENT

The general plan of treatment was to correct the overbite and the protrusion and establish proper occlusion of the buccal segments. Specifically, since this was a mutilated case, a careful diagnostic set-up was performed and it was decided from this set-up that treatment could be accomplished by the removal of only one dental unit. The slight mesial axial inclination of lower anteriors was to be corrected by retracting them back into the space produced by the missing lower molar. The upper left first bicuspid was to be removed and the upper anterior teeth were to be retracted distally in the space pro-

vided by this tooth and the missing upper right permanent first molar.

A full edgwise arch appliance was used with coil springs to retract the cuspid teeth supplemented by an elastic headgear to the maxillary arch. The headgear was used throughout treatment to keep positive distal pressure on the maxilla and minimize intermaxillary elastics which might have to be used.

Following the usual lengthy appointment for appliance fabrication, the patient was seen every two to three weeks for adjustments with occasional long visits for major appliance modifications when indicated.

The response to treatment was very favorable. The upper teeth were banded first; the bite plate and headgear were

Fig. 1. Facial photographs before (above) and after treatment (below). Note striking change in profile during twenty-five months of treatment; this is attributed to mandibular repositioning.

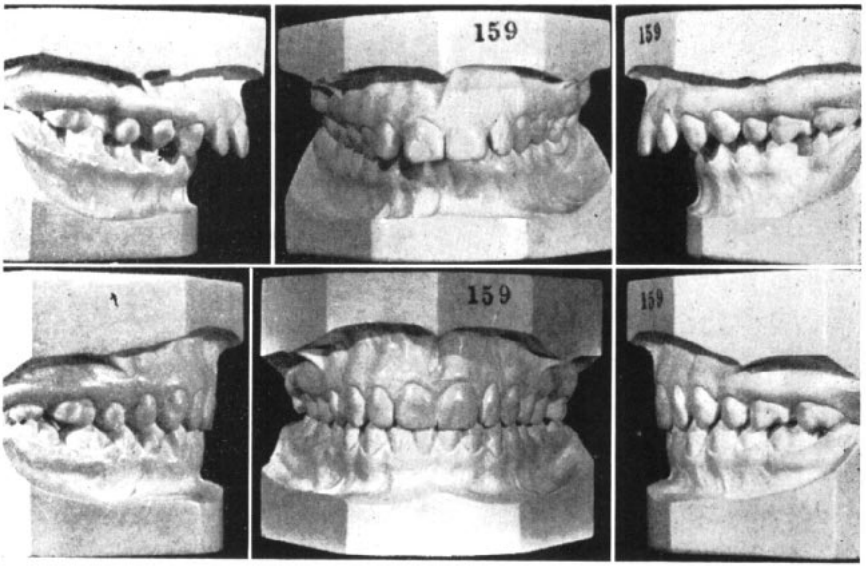

Fig. 2. Plaster casts before (upper row) and after treatment (lower row) of mutilated Class II/I malocclusion treated by removal of upper left first bicuspid.

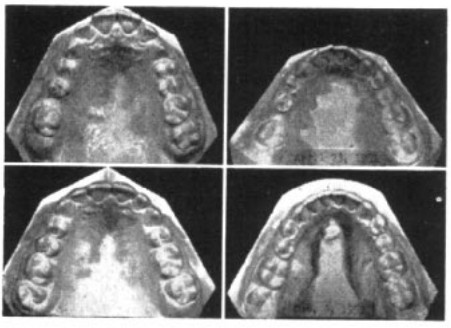

Fig. 3. Occlusal views before (above) and after treatment (below).

applied at once. Following this the lower teeth were banded and coil springs were placed to start the bicuspids and cuspids distally. It was necessary to first move the biscuspid teeth into the missing molar spaces and then move the cuspid teeth after them in both arches. The bite plate was ground away from time to time to allow the movement of the individual teeth. Following the distal movement of the cuspids and bicuspids, closing arches were placed in both arches and all spaces closed. A new bite plate was placed and a new headgear and very light Class II elastics were begun for the final interdigitating of the teeth. This is an interesting point for the mandible was so well repositioned by this time that only two months of Class II elastics were needed in order to complete the case. Surely, no true Class II case could be repositioned in such a short time; in my opinion this confirms the original diagnosis of a distally locked mandible.

Cooperation throughout treatment was excellent. It required twenty-five months to establish good anatomical and functional relationships.

When the bands were removed a rubber tooth positioner was immediately placed. The original diagnostic setup was used to construct this and the positioner was then ready for placement as soon as the bands were removed. The positioner was used for only two weeks as the patient was very, very faithful and achieved the desired results in that

time. Following this the conventional Hawley type retainers were placed. They have been worn day and night for six months and will be worn nights only for six more months. They will then be worn every other night, then two nights a week, then one night a week, and finally one night every two weeks; the whole time the denture being checked to determine that no slippage is occurring. The masseter muscle exercise recommended by Dr. A. P. Rogers is being used throughout retention.

Results Achieved

It was originally felt that if this case could be successfully treated there would be a marked facial change. It is felt that this change was achieved to the great satisfaction of the patient. The supporting tissues were healthy to begin with and remained so during and after treatment. There was no caries problem following the removal of the bands. Hygiene during treatment was excellent. The function of this denture was enhanced by the establishment of the proper occlusion.

Final roentgenographic films show some slight resorption of the roots of the teeth and all third molars should erupt satisfactorily. The bone picture is very good. No growth changes were noted.

Conclusions

The most significant feature of this case was the obvious relocation of the mandible. Without this relocation, this case would have only been a partial success. The correction of the molar relationship was rapid and only required slight elastic wear to settle the bite. I believe that the occipital anchorage was very effective in aiding in the reduction of the protrusion. I feel that the diagnosis and treatment of this case were correct in that the results are satisfactory.

The most significant posttreatment observation that I could make on this case is the extreme change in the personality of the patient. While the photographs of this case do show a striking difference, they only display part of the change in this individual. While this observation may not be thought to be properly in the realm of orthodontics, the remarkable personality change in this individual in my opinion is one of the most important results in this treatment.

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