Case Report

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The patient was a female, aged twelve years and three months whose general health was excellent. Her tonsils and adenoids were removed at four years and she had measles and chicken pox at eight years. The rest of the case history was a picture of normalcy.

The mother had a normal facial pattern and tooth relation while the father had skeletal and denture relationships that were very similar to those of the patient.

An analysis of the face would classify it as a mild Class III type, with well balanced, harmoniously functioning musculature (Fig. 1). A more detailed description of skeletal denture relation is indicated by the Downs' analysis (Fig. 3). Class III characteristics may be interpreted from the 92° facial angle, —6° angle of convexity, and —2° AB plane. The 30° mandibular plane is not significant. The 61° Y axis, combined with the other facial angles, would indicate maxillary insufficiency with mild mandibular prognathism.

The large interincisal angle of 149°, combined with the —16° angle of the mandibular incisors to the mandibular plane, was considered to be a relation which harmonized favorably with the facial structures. The maxillary incisors were in excellent relation to the AP plane.

The denture analysis made from plaster casts revealed a maxillary arch constricted mildly in the bicuspid area with some lack of space for the left cuspid. There was a 1.5 millimeter space between the right central and lateral incisors. The maxillary left lateral incisor occluded to the lingual of the mandibular left cuspid. The mandibular arch was crowded more severely than the maxillary arch in the incisal and left cuspid areas. A Class I relation existed on the left side and a Class III relation on the right. The midline of the mandibular arch was 4 millimeters to the left of the maxillary arch.

All four third molars were present. They were normal in size and in positions favorable for eruption.

In planning treatment it seemed desirable to reposition the teeth with as little change in the relation of the denture to the face as possible. Correction of the Class III condition on the right side did not seem advisable and may have been impossible. While it was considered possible to correct tooth alignment in the maxillary arch by slight expansion and correction of arch form, it was realized that this would increase the midline discrepancy. The decision was made to extract the mandibular right first biscuspid, making it possible to move the mandibular anterior teeth to the right side and, in so doing, correct the midline and provide space for the mandibular left cuspid.

Edgewise appliances were placed on both arches with bands on all the teeth. A slight amount of expansion was given the maxillary arch, correcting arch form and moving the left cuspid into its place in the arch. An edgewise archwire was fitted to the mandibular teeth. The right cuspid was moved along the archwire with a pull coil spring from the cuspid to the distal end of the archwire. The archwire had stops in front

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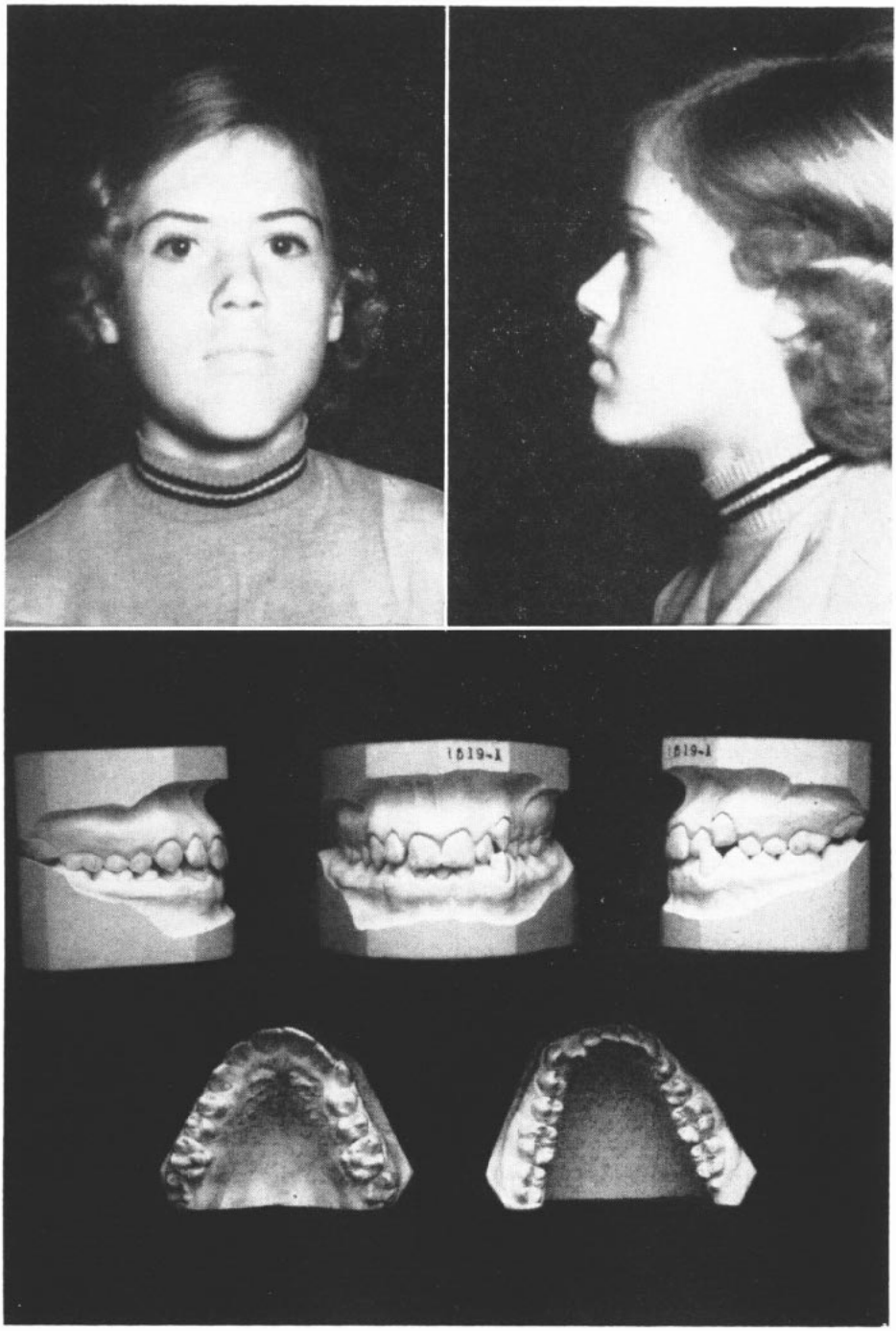

Fig. 1 Records before treatment.

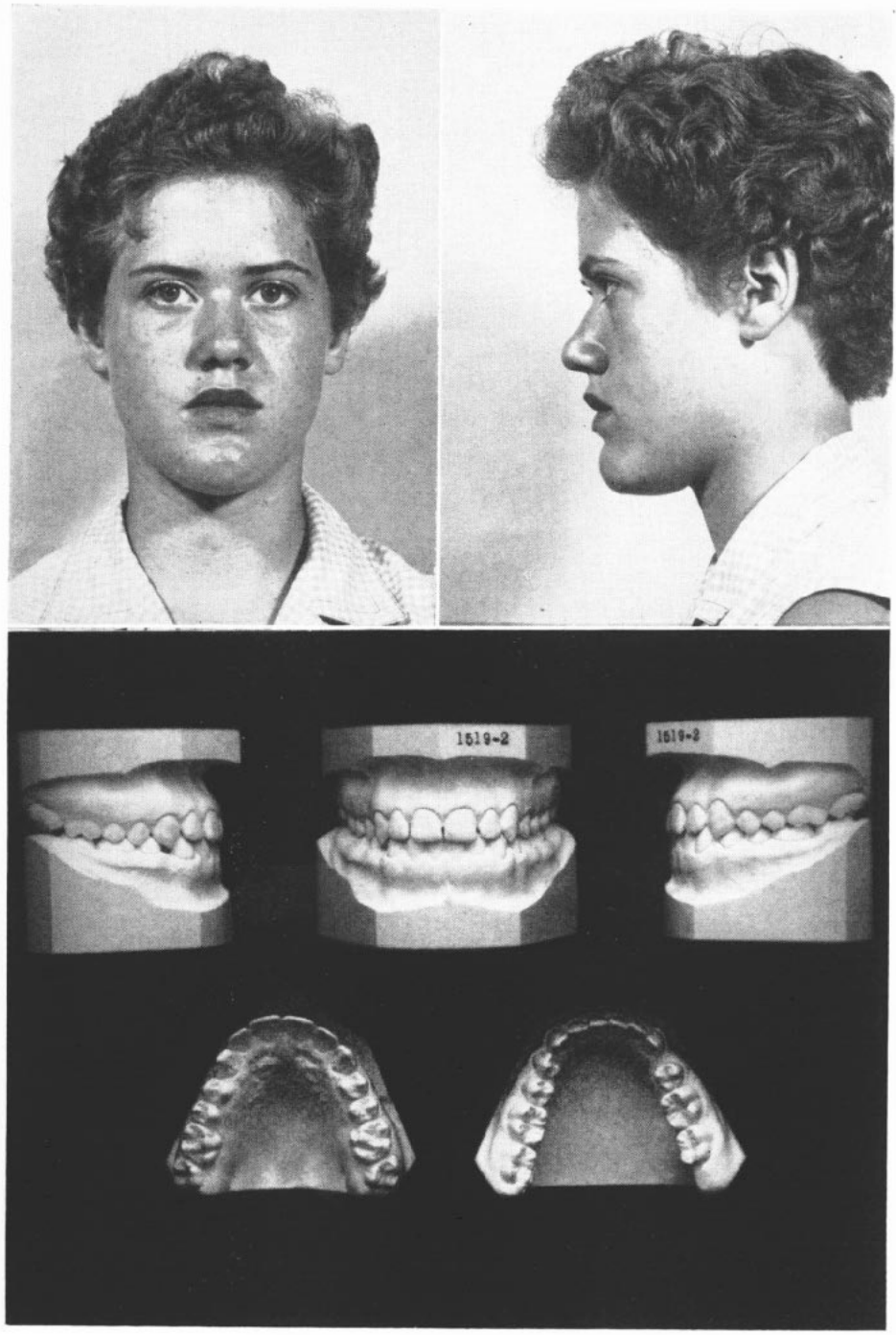

Fig. 2 Records two months after removal of appliances.

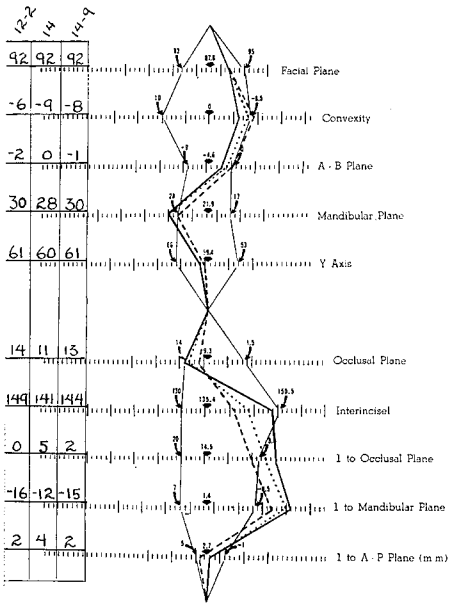

Fig. 3 Downs' analyses on a Vorhies-Adams chart.

of each buccal tube. When the cuspid had been moved sufficiently to permit the required amount of movement of the incisors, they were moved as a group with a closing loop in an edgewise arch distal to the right lateral incisor. Final adjustments were made in each arch by the use of edgewise archwires. Active treatment was completed in eighteen months. The case has had no retention.

The completed occlusion, while not perfect in arrangement, probably meets as adequately as possible most of the functional and esthetic requirements (Fig. 2). It was necessary to leave a small space between the mandibular right cuspid and second bicuspid in order to obtain correct interdigitation and position of the rest of the teeth.

The Downs' analysis indicates minor changes in skeletal measurements which have approximated the original measurements in the short time following treatment (Fig. 3). The minor changes in incisal inclinations and positions which one may wish to consider an improvement, have also, to a large degree, returned to their original positions.

As one would expect, the face continues to be satisfactory in its balance and esthetics. Any slight change is due essentially to growth which has occurred since the start of treatment.

This case has been presented not as an exhibition of orthodontic tooth movement but because there were unusual problems of tooth size, tooth relation, and morphogenetic pattern. Correction with as little change as possible in the relation of the denture to structures appears to have been indicated.

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