The supervisory period

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The subject of "The Best Time for Orthodontic Treatment" has long been a controversial one and will undoubtedly continue to be, so long as we have varieties in techniques, appliances and philosophies. However, in my own practice, to more accurately "pin-point" the "best" time to start treatment, we have instituted, what we choose to call, "An Orthodontic Supervision Period" on all those cases which we believe not yet ready for active treatment. Such a period may vary in length from six months to five or more years. When such a patient presents himself originally, say at 8 or 9 years of age, complete records — impressions, radiographs (including lateral jaw and cephalometric) and photographs — are taken as well as a physical history. A case analysis is made and if it has been ascertained that the best time to start active treatment would be after the eruption of more or all of his permanent teeth, then the patient is "placed under supervision" and not merely dismissed with a statement that, "he is too young for treatment now, come back in three or four years".

Frequently our case analysis will uncover certain conditions which if watched closely, a little help will prevent a more serious malocclusion from developing. A supervision period from eight years of age until treatment time will enable the orthodontist to detect and prevent too long retention of primary teeth, to more accurately determine the need for space maintainers, and, in cases of too much tooth structure for supporting bone, can advise the patient to have certain dental units (primary or permanent) removed at the most opportune time.

I wish to present two cases to exemplify this last mentioned advantage of a supervision period. Both are girls of approximately the same age, similar also in that they had Class II malocclusions. They differ in the fact that one followed through with the advice that was given during the supervision period, the other one ignored it, or at least did not act on it. She did return, however, 18 months later with a considerably worse malocclusion.

CASE No. 1

The patient, a twelve year old girl, short and stocky in stature, with both prenatal and birth histories normal, reported to have had the usual childhood diseases. She gave a history of premature loss of primary teeth due to caries. The clinical examination revealed normal size teeth attempting to crowd into small dental arches. There were insufficient spaces for the erupting mandibular premolars and maxillary canines. This was further complicated by a distocclusion resulting in a cusp to cusp relationship. She had a 100% overbite with the lower anterior teeth impinging on the gingivae lingual to the protruding maxillary anterior teeth. The facial photographs (Fig. 1) show a well rounded full face with a moderately receding chin. Radiographic examination revealed the presence of all teeth including the developing third molars. She already had a considerable number of amalgam restorations in her posterior teeth. The Downs-Adams Polygon (Fig. 4) made from cephalo-

*Read before the Mid-western Component, January 1953.

Fig. 1 Case No. 1 above, before treatment; below, after.

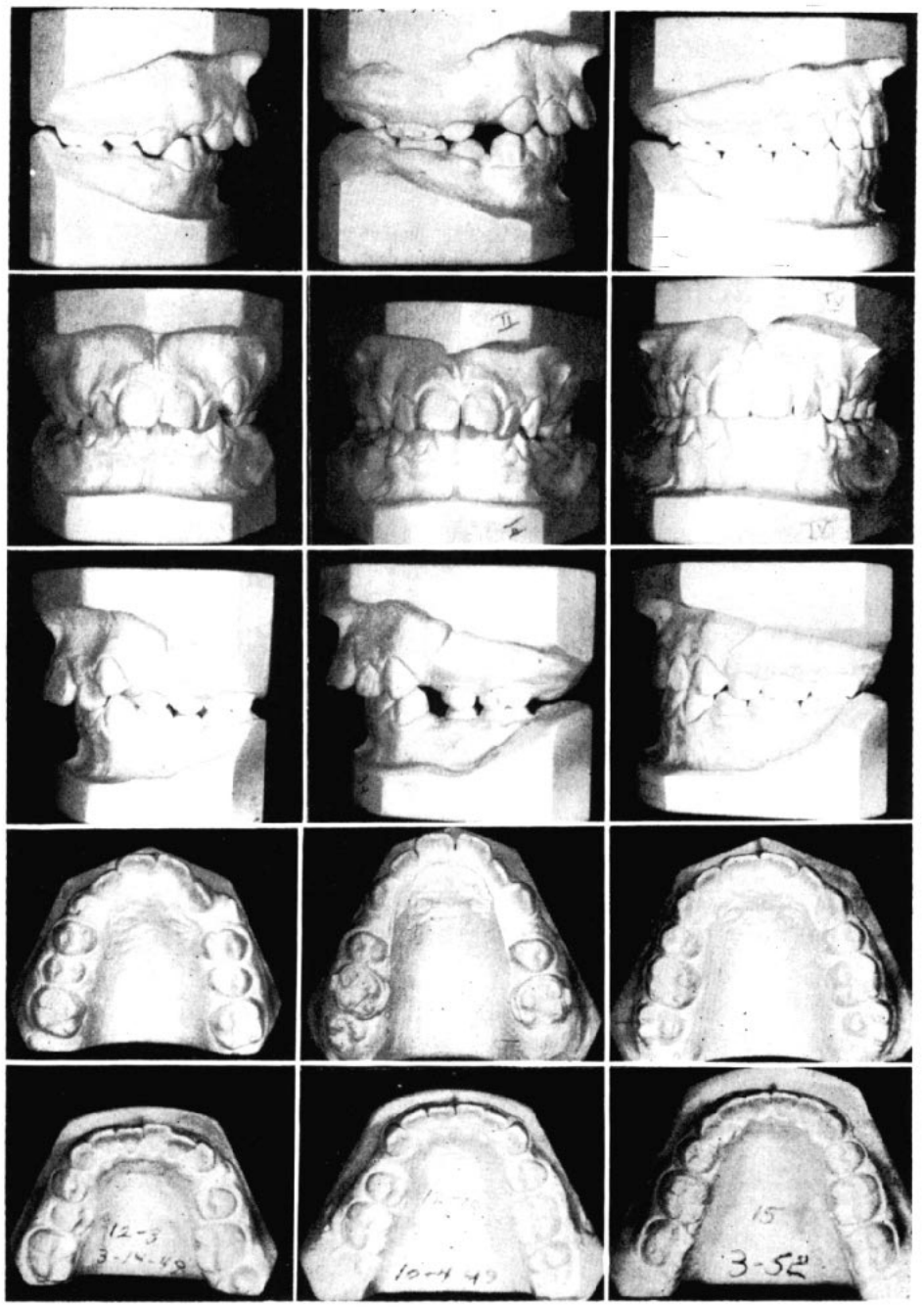

Fig. 2 Case No. 1 left, before treatment; middle, end of supervision period, right, nine months after treatment.

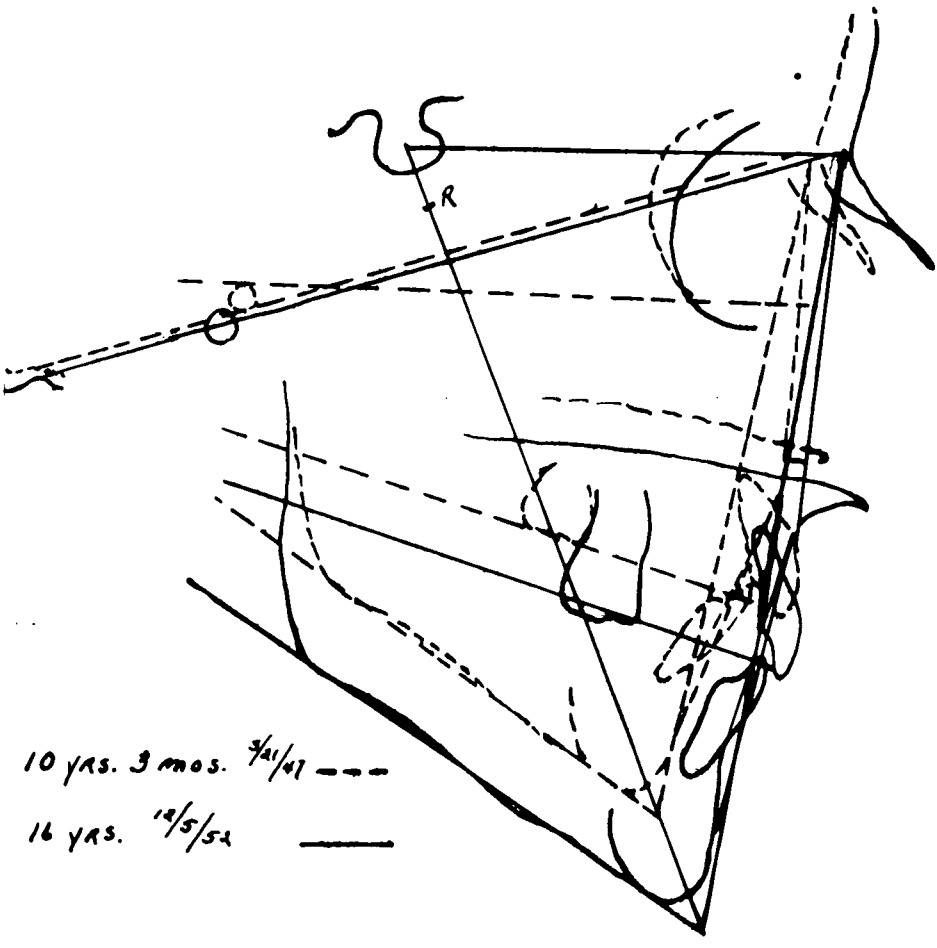

Fig. 3 Case No. 1 dash, two years prior to extraction; solid, after removal of all retention.

metric radiographs taken approximately two years previously reveal both an abnormal skeletal and denture pattern.

ETIOLOGY — Premature loss of primary teeth and hereditary underdeveloped dental arches and distocclusion from her mother.

DIAGNOSIS — Class II Division I.

PLAN OF PROCEDURE — Patient was advised to have all four first premolars extracted and soldered lingual archwires were placed in both dental arches to prevent further loss of arch length. This period, between March and the following October when active orthodontic treatment was instituted, we term the supervision period. (Figure 2), left and middle, shows the changes that took place during this time when no active orthodontic appliances were working. The erupting second premolars and canines were merely given sufficient space to erupt fully. Note the downward and distal movement of the canines and how the mandibular second premolars have uprighted from their linguo-version positions.

TREATMENT — There is no need

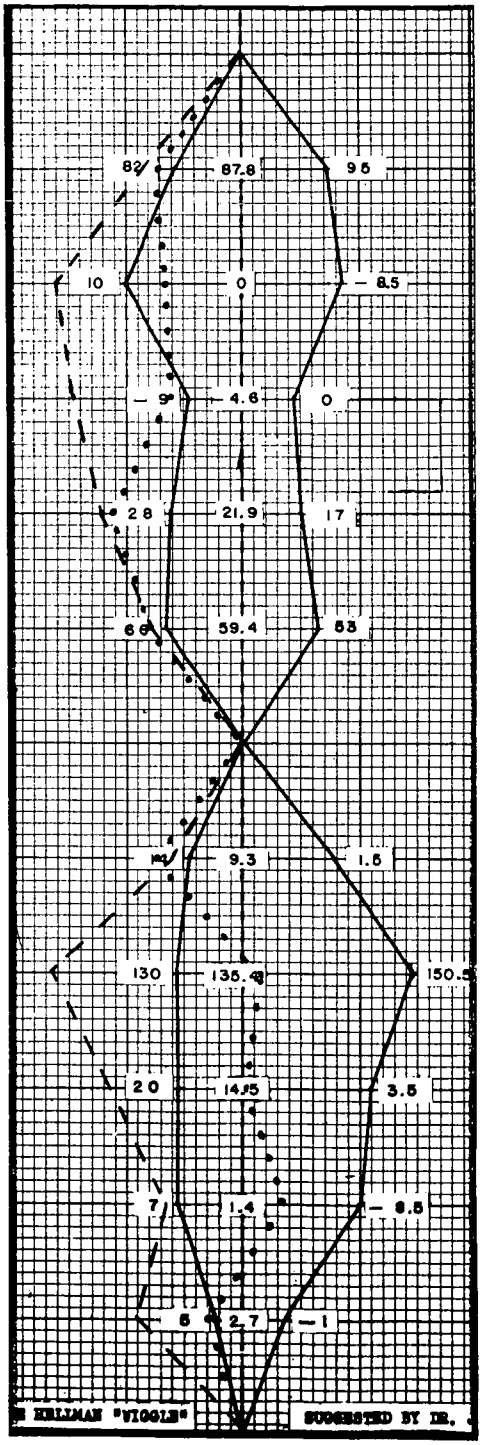

Fig. 4 Case No. 1 dash, before extraction; dotted, following retention.

of a detailed description of the treatment other than to say it was treated according to my interpretation of Tweed's Technic for Class II Division I malocclusion. Figure 2-right shows the results. Figure 3 shows superposed cephalometric tracings: the dashed lines — two years before the premolars were removed, the solid lines — a year and a half after treatment was completed and after all retention was removed. Figure 4 is the polygon made from the tracing of Figure 3.

CASE No. 2

This patient on her initial visit was tall and slim for her nine years. The most significant fact noted from her physical history was her sinusitis. Her tonsils and adenoids had been removed when she was 3 years of age. Her lips were full (Fig. 5), the lower one curled considerably and her chin was receding. In stature she closely resembled her mother except for her mother's toothy smile, the result of over-expansion of her dental arches by orthodontic treatment to accommodate all of her large teeth. Radiographic examination uncovered numerous areas of incipient caries, no pathology and no lost or missing permanent teeth. Clinical examination revealed the narrow dental arches so typical of the mouth-breather. The premolars only had about half enough space into which they could erupt. The maxillary anterior teeth were protrusive, rotated and spaced; the mandibular anterior teeth were moderately crowded and forward to basal bone. The arch relationship was a distocclusion (Fig. 6 left).

ETIOLOGY — Mouth-breathing and a maternal hereditary distocclusion.

DIAGNOSIS — Class II, Division I.

PLAN OF PROCEDURE — The patient was advised to have all four first pre-molars extracted at this time and then a period of supervision was to

Fig.5 Case No. 2 top, first appointment; middle, prior to active treatment; bottom, after treatment.

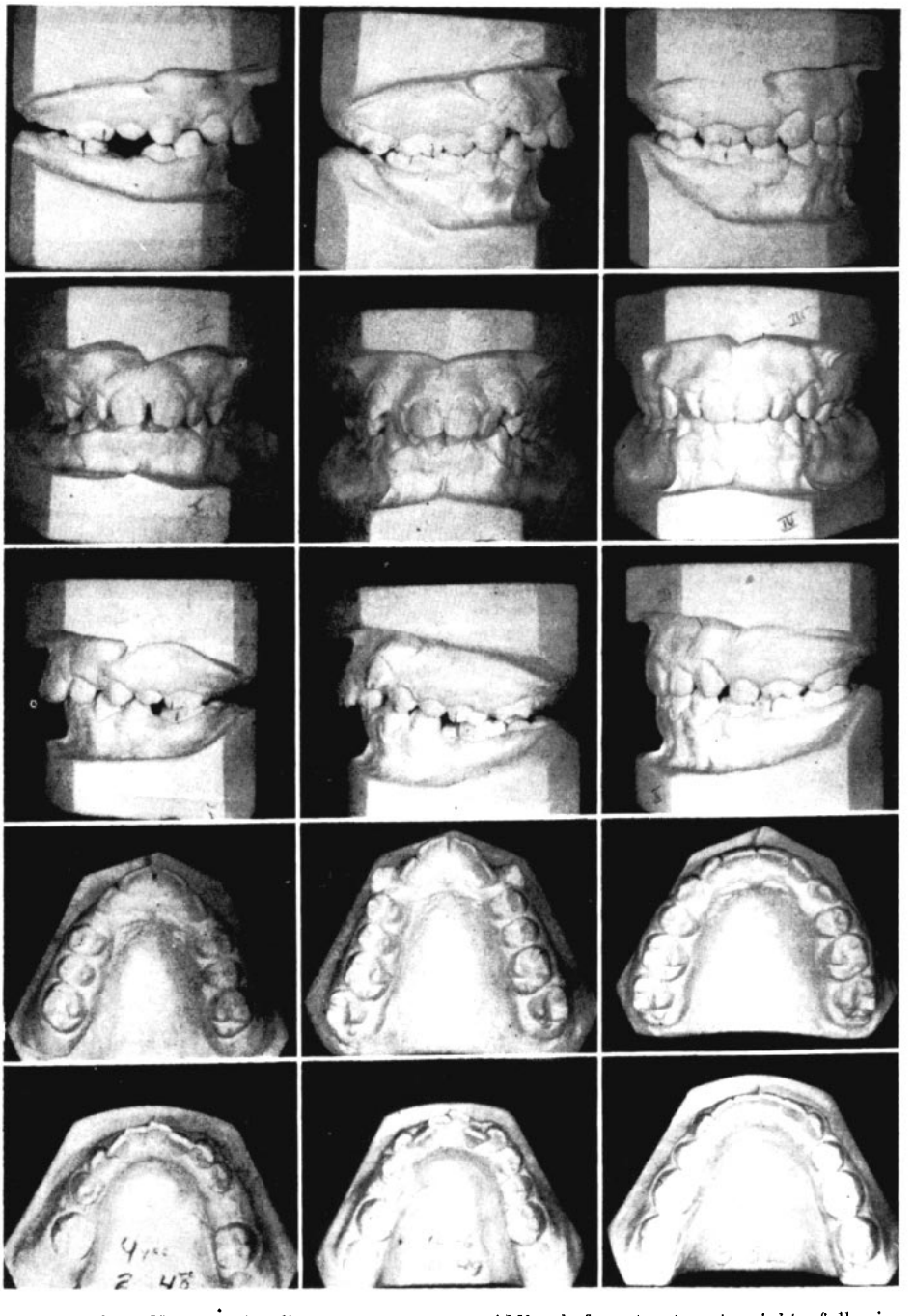

Fig. 6 Case No. 2 left, first appointment; middle, before treatment; right, following treatment.

follow, while the maxillary canines, mandibular second premolars and all second molars erupted. If later, there was evidence that arch length was being lost, prophylactic lingual archwires were to be placed. Active treatment was to be postponed until all permanent teeth, except the third molars, had erupted. The patient was dismissed and was placed on call for three months. None of the recommendations were followed and it was 18 months before we again saw this patient, her mother giving illness in the family as the reason. Note the drastic changes as shown in Figure 6 (middle). Especially note where the canines finally erupted and how the mandibular anterior segment buckled.

TREATMENT — Now there should be no doubt in anyone's mind of the necessity for extraction. The four first premolars were removed. Sectional archwires were used to retract the canines. When they were brought down and into contact with the second premolars the incisor teeth were banded. Round archwires with vertical closing loops uprighted them. When all the spaces were closed, there still remained

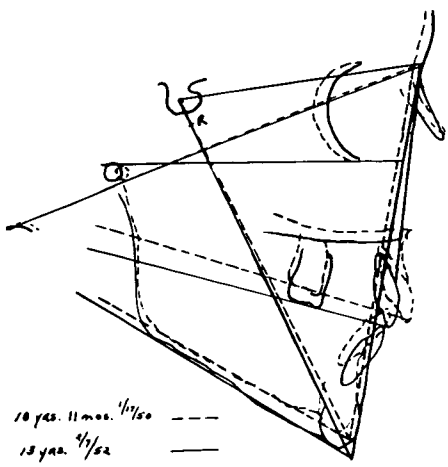

Fig. 7 Case No. 2 dash, before treatment; solid, after.

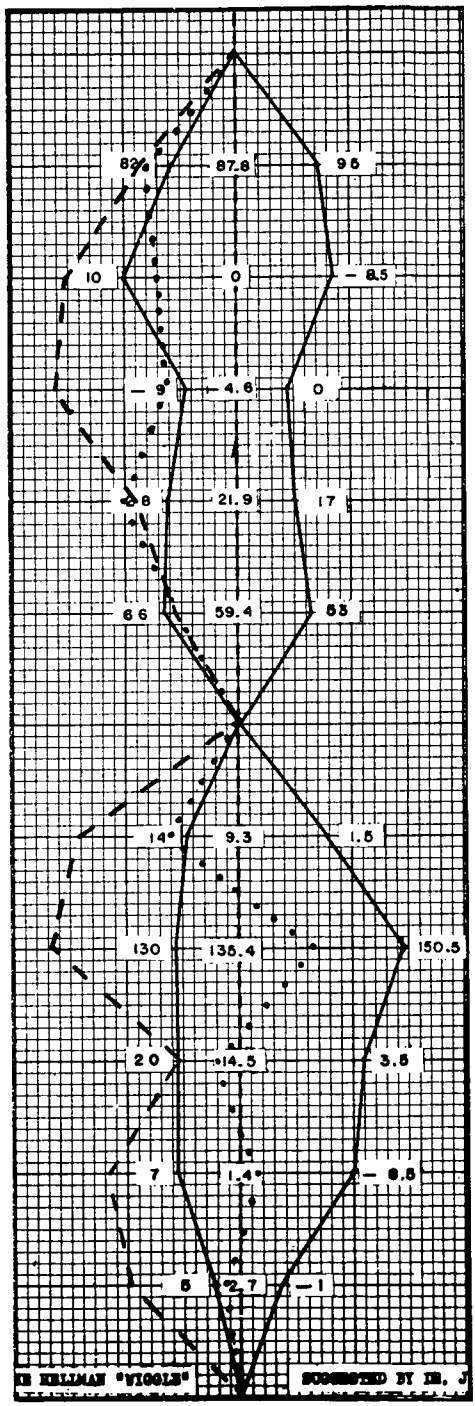

Fig. 8 Case No. 2 dash, before treatment; dotted, after.

some protrusion, so Class III mechanics were instituted, supplemented by headgear therapy, using .021 x .028 maxillary archwire and .020 x .026 working archwire in the mandibular arch. As soon as the mandibular teeth were uprighted over the basal bone, a stabilizing .021 x .028 archwire replaced the working one in the mandible and the stabilizing maxillary archwire was replaced by a .020 x .026 working archwire. The Class II elastics working in coordination with the second order bends and molar tip back bends soon had the patient in neutrocclusion. Casts made after a period of retention, durwhich time the occlusion was equilibriated, are shown in Figure 6-right. The cephalometric tracings (Fig. 7), transferred to the Downs-Adams polygon (Fig. 8), and the final facial photographs Fig. 5) are presented.

CONCLUSIONS: The degree of success of the supervision period depends upon it starting early enough before active treatment is necessary. It may precede active treatment by six months to six years. During this period, the presence of any deforming habits should be detected and overcome by corrective measures, including myofunctional therapy. Also at this time, lingually locked maxillary anterior teeth should be jumped by use of a tongue blade or a bite block. Individual primary teeth may be ground to reduce their diameter or inclined planes changed to improve the occlusion. The supervision period affords many advantages, chief among them is the reduction of active treatment time; this reduction may be as much as 50 to 70%. The final results are usually closer to the ideal and the retention problem is considerably minimized.

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