Clinical Observations Of Cases Five Years Out Of Treatment

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This paper treats of observations made on a small sample of twenty Class II, Division I extraction cases which have been out of treatment a minimum of five years. These are all four first bicuspid extraction cases except two, one of which involves a second bicuspid and three first bicuspids, and the other, two lower first molars and two upper first bicuspids. By "out of treatment" I mean that the time was determined from the date the appliance was removed, and thus includes retention periods of varying lengths.

The purpose of this study was to determine clinically what changes had taken place during the five year interval. More specifically, I sought answers to the following questions:

1. What happens to the spaces that are not closed at the extraction site?
2. Do spaces develop at the extraction site after treatment?
3. Is there a tendency for deep overbites to occur?
4. What is the degree of overlapping of the mandibular incisors?
5. Do the mandibular incisors maintain themselves in their treated positions in reference to labial-axial inclinations?
6. Does the esthetics improve as the patient matures?

Regarding spaces that remain at the extraction site when the appliance is removed, or spaces that develop soon after the removal of the appliances, the evidence overwhelmingly demonstrates that these spaces tend to close. However, they generally do not close in a favorable manner; that is, although the cuspid and second bicuspids may reach a contact relationship, the second bicuspid does not maintain a vertical axial inclination, but, rather, a definite mesial axial inclination due to a mesial tipping into the space, so that the mesial marginal ridge of the second bicuspid contacts the cuspid well below the normal contact area. In addition, there may be a definite mesial tipping of the first and second molars. This situation was more frequently noticed in the mandibular denture and presents a sort of two-level line of occlusion, the posterior segment being on a lower level than the anterior segment (Fig. 1).

One case (Fig. 2) may be demonstrated in which this phenomenon occurred with no cuspid—second bicuspid spacing. Upon completion of treatment, the cuspid and second bicuspid were in satisfactory vertical inclinations and in a good contact relation. Five years later, however, there is a noticeable mesial tipping of the mandibular buccal segments with a ducking of the second bicuspid below the cuspid contact area.

There is no evidence that spaces developed at the extraction site at this time interval. However, as mentioned previously, spacing at the extraction site may occur soon after the appliances have been removed. These spaces tend to close in the manner just described.

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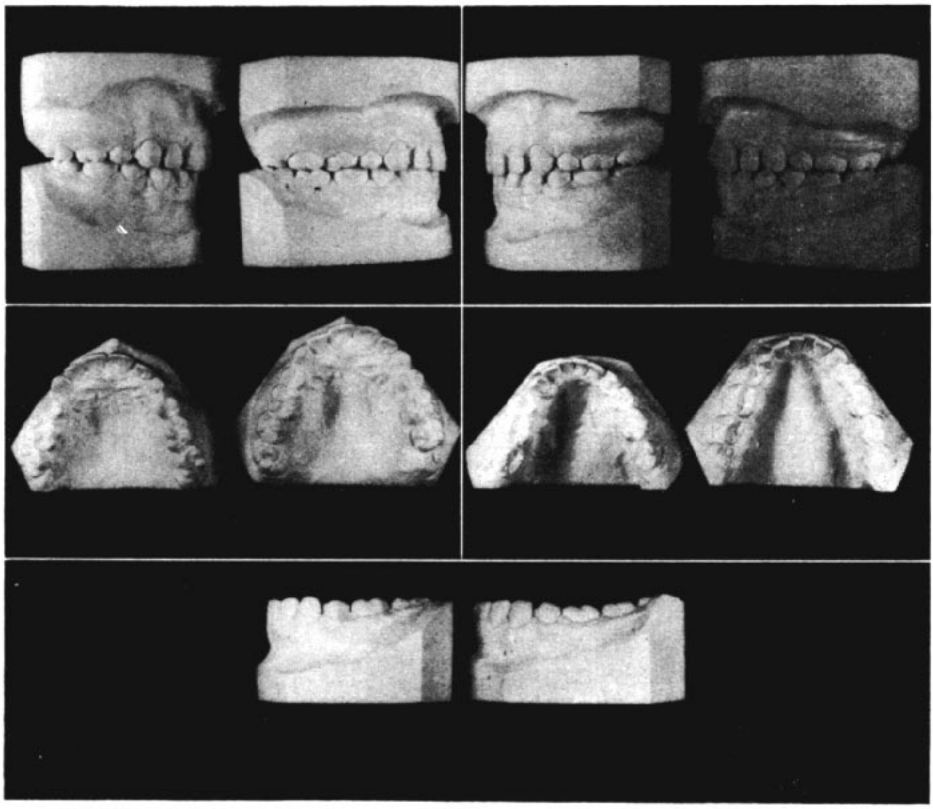

Fig. 1 Top: Left and right sides, soon after treatment and five years later.
Middle: Occlusal views.
Bottom: Lower left sides.

Three of the cases observed show a loss of vertical dimension, or an overbite that may be considered excessive. In each case, the severity was not as great as initially, but excessive enough to arouse concern. This loss of vertical dimension is thought to be due to a combination of two factors: 1. an elongation of mechanically depressed maxillary incisors, and 2. mesial tipping of leveled buccal teeth (Fig. 3).

Broken contacts or overlapping of

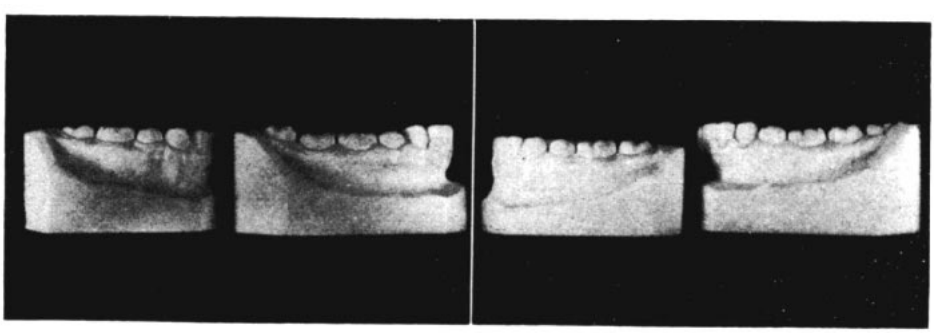

Fig. 2 Right and left mandibular views, soon after treatment and five years later.

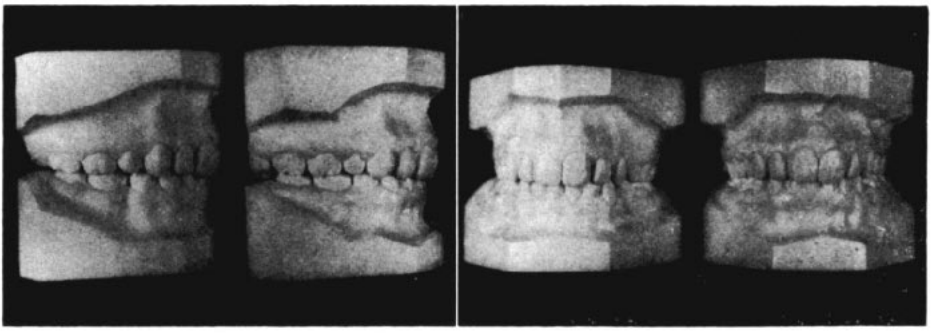

Fig. 3 Right lateral and anterior views, soon after treatment (left) and five years later (right).

the mandibular incisors occurred in sixteen of the twenty cases observed. This overlapping varied from a slight rotation of one incisor to a definite blocking out of an incisor. The most severe case of overlapping mandibular incisors may be seen in Figure 4. This observation tends to indicate that some degree of overlapping occurs in a large percentage of the cases.

Clinically, it is somewhat difficult to determine whether the mandibular incisors tend to maintain themselves in their treated positions or whether there is a tendency for them to tip forward again. However, there are nine cases, almost half of the sample, where it appears as though there has been some forward tipping. Slight as this tipping may be, it seems to be reflected in the face, causing a slightly more protruded lip than when the active treatment was completed. Less I be misunderstood, may I emphasize that the amount of forward tipping of the mandibular incisors and the amount of protrusion of the lower lip that may reoccur are nowhere near as great as that present initially.

Facially, fifteen of the twenty cases observed appear better balanced and more harmonious at this time than at the time of completion of active treatment. This improvement is not due to any further reduction in the amount of protrusion of the lip area, but, rather, to the development of a button on the chin which seems to place the chin in a more forward position, plus, in some cases, a slightly more protruded lower lip than that at completion of treatment (Fig. 6).

Four of the twenty cases observed are about the same facially. This is primarily due to the failure of the chin to be in a more forward position. Two of the twenty cases seem to be worse facially: one due to a more protrusive lower lip and the failure of the chin to be in a more forward position, and the other, the development of a large button presenting a somewhat dished-in appearance.

Summarizing, 1. Spaces that remain at the extraction site after treatment, or spaces that develop soon after appliance removal, tend to close, but, gen-

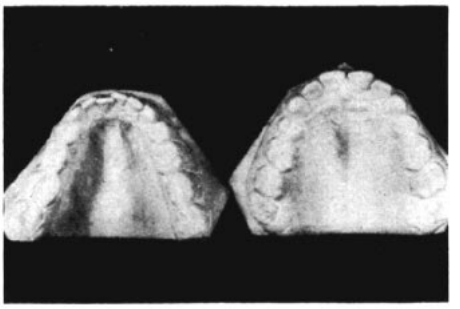

Fig. 4 Occlusal views five years after treatment.

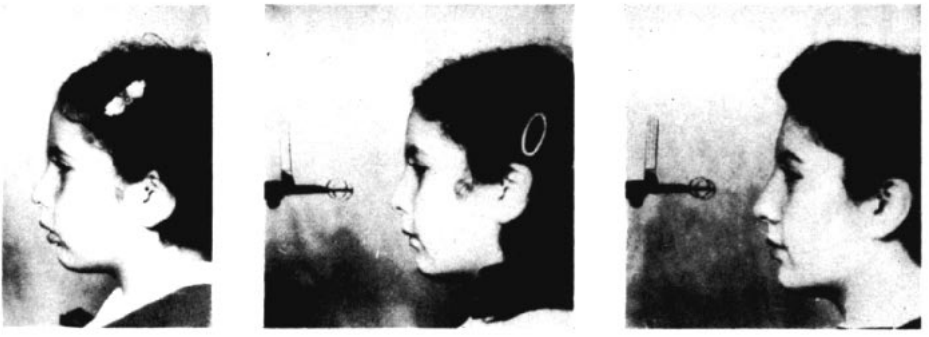

Fig. 5 Left, before treatment; center, soon after treatment; right, five years after treatment.

erally, the posterior teeth are tipped mesially into the space so that the mesial marginal ridge of the second bicuspid contacts the cuspid below the normal contact area.

2. There is no evidence of space development at the extraction site at this time interval.

3. Deep overbites occurred in this sample, but the evidence did not appear to be conclusive.

4. The mandibular incisors generally did not tend to maintain themselves in their treated positions with reference to labial axial inclinations, but, rather, there is a tendency for them to tip slightly forward. This action could suggest an attempt by nature to develop an occlusion which is in harmony with the facial skeleton which supports it, with the muscles of expression and mastication, and with the temporomandibular joint.

5. This study indicates that the facial esthetics tends to improve, and that this improvement is due mainly to the chin being in a more forward position.

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