Treatment In the Mixed Dentition[1]

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The treatment of malocclusion at the time the denture contains both deciduous and permanent teeth should interest every thoughtful orthodontist. If it were possible to prevent malocclusion, that would be ideal. Since this is impossible at the present time, the treatment of malocclusion in mixed dentition, although far from the ideal, is at least one step nearer than is treatment of dentures containing all permanent teeth.

The Northern California Component of the Edward H. Angle Society of Orthodontia has twenty three regular and associate members whose combined years in practice totals over three hundred. I thought that if it were possible to get the opinion and results of all those years of experience, it would be much more valuable than any I might have from my few years of practice.

To get the information in the most concise and usable form, a questionnaire was sent each member of our component in which the following questions were asked:

1. Do you treat any mixed dentition cases?
2. Do you treat any mixed dentition Class I cases?
3. Do you treat any mixed dentition Class II, division 1 cases
4. Do you treat any mixed dentition Class II, division 2 cases?
5. Do you treat any mixed dentition Class III cases?
6. In general, what is your feeling about mixed dentition cases as a group?

A request was made for the reasons for the treatment or non-treatment of the various types of cases.

I am grateful to the members of the Component for their cooperation and support. Their answers to the questions showed that considerable time and effort had been expended in compiling accurate data. A number answered at great length; they gave detailed descriptions of the treatment instituted and of the appliances used in accomplishing this treatment. The answers given were tabulated and this paper represents a summary of those answers. It was somewhat difficult to summarize the answers because many were qualified, by the types of appliances used, or by the conditions under which treatment was undertaken.

The first question was, "Do you treat any mixed dentition cases?" The answers were in the affirmative, with the exception of one. The lone negative answer was very insistent that he did not treat any mixed dentitions because one hundred percent relapsed; however, I noted, as he answered the other questions, some treatment was instituted under certain conditions in all classes of malocclusion, except the Class II, division 2.

To me, treatment does not always involve a full hookup. Very often only guiding and holding appliances are used. I consider the use of any type of appliance for any purpose, treatment.

Next, they were asked to list the types of malocclusions treated in the mixed dentition. All listed cross bites, both anterior and posterior and Class III cases. In addition to these, seventeen listed severe protrusion cases, ten added Class II, division 2 cases, five Class I cases that measure

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out according to Nance, and two cleft palate cases. One answered that practically all types of cases were treated but the extent of the treatment was variable.

To the question, "Should Class I cases be treated?" the "ifs" and "whens" started to fly. Two stated that they did not treat any Class I cases and let it go at that. All the others had various conditions under which Class I malocclusions were treated. Their plans of treatment differed greatly. Some used a full hookup, with complete treatment. Others used only guiding or holding appliances, with a minimum of treatment. There was certainly a difference of opinion as to the way mixed denture Class I cases should be handled. Each person seemed to have his own peculiar way of caring for Class I malocclusions. Also, there was great difference of opinion in the selection of types of Class I cases that should be treated.

A few insisted, that in order to answer this, a description of their treatment should be given, since they considered any interference, no matter how little, to be treatment, and they included a brief description of their treatment of various Class I conditions.

However, they did have a few things more or less in common. The time of treatment did not vary greatly. Most of the treatments were completed between six to twelve months. Nearly all agreed that a very high percentage required additional treatment, seventy five percent or more. The time of this additional treatment was three to six months for the shortest time given and six to twelve months for the longest time.

One member seemed to have very much more success in treating this type of malocclusion than the others, either because of his plan of treatment or his selection of cases to be treated, or both. His treatment time was from three to six months and additional treatment was not necessary.

The two that did not treat Class I malocclusions said that treatment of these cases in the mixed stages was only a waste of their time and the patients money as it would all have to be done over later and such treatment by them resulted in one hundred percent failure.

The great majority however, seemed to feel that there were definite advantages in assisting and guiding the growth through this early stage; that there was a conversation of tissue and that later, when and if it was again necessary to institute active treatment, the length of that treament was very much shortened by the earlier preparation.

Many followed the Nance plan in these Class I cases, placing a lingual appliance and removing the deciduous teeth early. As development progressed, they believed it possible through observation and without the necessity of any of the various plans of measurement that have been offered, to determine conclusively, before the eruption of the cuspids, whether or not it would be necessary to reduce the number of dental units. In cases where extraction was not a factor, the lingual appliance was left in place throughout the shedding period, thereby taking advantage of the maximum possibilities of arch length. If reductions in the number of teeth was necessary, the appliance was also left in place and first bicuspids removed before the eruption of the cuspids. They thought it seldom necessary, if ever, to remove these teeth from their crypts and warned that before such removal of these teeth, an appraisal should be made of the second bicuspids. Occasionally the second bicuspids do not develop normally and of course it would be a tragedy to remove the first bicuspids from their crypts before having any concept of the future of the second biscuspids. It is often possible to forestall the removal of any units until the deciduous second

molars have been lost and the second bicuspids have appeared.

In response to the question as to the treatment of Class II, division 1 cases, seventeen were of the opinion that they should be treated if severe. The methods of treatment were quite different. Some used only a bite-plane, others a headgear on the upper arch and still others used a complete edgewise hookup. These men believed that it was most important to restore the molars to a Class I relation and reduce the protrusion. All agreed that additional treatment would be needed in most cases but felt that this additional treatment would be very much simplified and shortened. Also, they felt the lips would have an opportunity to develop and function normally, that the accident hazard was reduced and that there were psychological benefits to be attained; anyone of the above reasons seemed enough to warrant treatment.

A number of them called attention to the fact that certain of these Class II, division 1 cases, involved disharmony between tooth pattern and the amount of basal bone available, and in these cases, not only was the Class II relationship reduced but deciduous cuspids were removed and the spaces closed. From that time on, these cases were treated as were the Class I cases of the same type. The average time for the first period of treatment was eight and one half months with additional treatment at a later date, which averaged ten months. Others thought treatment should be postponed until all of the permanent teeth had erupted. One did not believe these cases correctible until the bicuspids were in place. He stated that there were only fifteen months of good cooperation in any patient and that these precious months should not be wasted.

A few more than half of the group thought that Class II, division 2 cases should be treated in the mixed dentition. They felt much could be done in the treatment at this time. Some thought vertical height should be developed and the Class II relation of the molars reduced. Others thought many of these cases were locked bite or mandibular displacement cases and the earlier a mechanical interference could be broken up the better.

Those who believed these cases should not be treated, gave as their reasons the likelihood of relapse, that bites could not be opened at this time, and that these cases were simple to treat later with much better results.

The time of treatment for those who treated Class II, division 2 cases in the mixed dentition was six to ten months. A high percentage of the cases required additional treatment of from four to eight months.

In the treatment of Class III dentition cases, there was one hundred percent agreement. All thought that these cases should be treated in the mixed dentition or even in the deciduous dentition. The feeling seemed to be that the earlier the treatment was started, the better. If treated early, the treatment was simple and easy — that these cases grew progressively worse and the later they are treated, the more the difficulties increased.

There was considerable variation in the time of treatment in these cases. The shortest time taken to treat one of these cases was twenty four hours. The longest time, twenty four months.

The percentage requiring additional treatment was questionable. Of course, there is a great variation of types and conditions which come under this label of Class III. The pseudo Class III cases are one thing, the true Class III a different story.

In answer to the question, "What is your average length of time for treatment of malocclusion in the permanent dentition?", there was wide

range. The shortest average given, was fifteen months and the longest average was twenty six months. The group average was eighteen and three quarters months.

The reasons for requesting the average length of time taken in the treatment of permanent dentition cases was for the purpose of comparison with the average length of time taken to treat dentures in the mixed stage. The average time taken to treat mixed dentition cases was seventeen and three quarters months. This included both the original treatment time plus the time necessary for additional treatment.

One of the reasons given by some for not treating mixed dentition cases, was that it made the treatment time too long. In their experience, this is probably correct, but when taken as a group, just the reverse seems to hold true.

From these answers, a few things are apparent.

1st. Although a few deny it, all treat mixed dentition cases.

2nd. Nearly all institute some treatment in Class I and Class II, division 1 cases.

3rd. The opinions regarding the treatment of Class II, division 2 cases, was rather evenly divided.

4th. All treated Class III cases in the mixed dentition or earlier.

5th. The time for the complete treatment of the mixed dentition cases was practically the same as the time taken to treat cases containing all permanent teeth.

Thus, it would seem that the experience of these three hundred years, would indicate some treatment of the mixed dentition in the great majority of cases.

The last question, "In general, what is your feeling about mixed dentition cases as a group?", drew a variety of answers. Some thought this treatment very much worth the effort, while others thought it just a waste of time.

Work on children of twelve or thirteen is much more pleasant than is work on the younger children. It is an easier task to place appliances on the denture of a twelve year old child than that of one several years younger. This, however, is a poor excuse for neglecting those younger children who need attention.

The remark of one of the men seems to hit the nail squarely on the head. He said, "Why not quit talking about mixed dentures? Aren't they sufficiently different from one another, that rules governing all are misleading? Some young orthodontists have been badly misled over this 'never treat the mixed denture'."

It surely is time for us to stop trying to put all mixed dentitions into one group. The wonder is that there is not more confusion from this attempt to put Class I's, II's and III's into a single group, when the only thing they have in common is the presence of deciduous teeth.

A Class I malocclusion is still a Class I despite the deciduous teeth. Should it not be considered solely on that basis? It seems ridiculous to cast these Class I's into a basket with Class II's and III's, just because they contain deciduous teeth, and the same applies to the other classes of cases.

We have been given a good classification of malocclusion. Let us get back to it and consider each case strictly on its own merit and not let the presence or absence of a few deciduous teeth interfere in that consideration.

Practically all classes of malocclusion are treated in the mixed stage in my office, but the extent of that treatment is variable, varying from

the placement of a band or two or a bite plane to a complete hookup.

It seems to me, that there are definite advantages in assisting and guiding growth through this early stage. That there is a conservation of tissue and that later, when and if it is necessary to institute an active treatment, the length of that treatment is very much shortened by the earlier preparation.

Let us consider briefly, just one of the three great classes of malocclusion and let us take Class I for that consideration, because many orthodontists feel that Class I cases should not be treated until all of the permanent teeth are in place.

First, there are the cross bites, both anterior and posterior. These are easily corrected in a very short time and I believe this correction should be made as early as possible. Many times, further treatment is not necessary.

Second, there are those crowded conditions that result from lack of development due to external pressures. These pressures should be relieved as soon as possible, the earlier the better, and their cause removed. With a very minor amount of treatment, these cases may then be restored to normal with a good possibility that further treatment will not be needed.

Third, the cases with insufficient arch length which are of two types — that, cause by forward drift of the molars, due to the premature loss of deciduous teeth, and that, caused by the discrepancy between tooth pattern and the amount of available bone.

In the first case, it is a simple matter to restore these drifted teeth to their normal positions and retain them there throughout the shedding period, thereby making it possible for those unerupted teeth to assume their normal positions in the arch.

The second type, that, in which there is insufficient arch length, due to the discrepancy between tooth pattern and the amount of bone available, is the most troublesome. It is this type of case, I believe, that causes the discouragement in the early treatment of Class I cases. I believe most of us have treated such cases and watched them relapse and retreated them when all of the permanent teeth were in place, only to have them fail again. It is in this type of case that the removal of dental units is necessary if we are to hope for a stable result. Here again, early treatment is indicated.

Generally, in this treatment, the Nance plan is followed, placing lingual arches and removing the deciduous cuspids prematurely. This allows a freedom of movement of the erupting incisors which may now take their normal, upright positions. As necessary, other deciduous teeth are removed serially. Finally, there comes a time when permanent teeth must be removed and a choice must be made between the first and second bicuspids. I prefer to remove the second bicuspids whenever possible; this, however, is not done if too much distal movement of the first bicuspids is necessary. My guide for this is one half the width of a bicuspid. If more than this is required in distal movement, then I remove the first bicuspid. After this decision has been made, the teeth are removed, appliances placed and the case is treated in the routine manner.

Treatment during the mixed dentition stage in practically all Classes of malocclusion is to me, very much worth the effort. While this early treatment may be very annoying at times and sometimes even becomes a burden, I think the benefits to the patient outweigh any inconveniences it might cause us.

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