

TREATMENT TO LOWER INCISOR TEETH*

R. J. MASSON, B.D.S., M.D.Sc.

Lower Incisors.

For the purpose of this paper, treatment can be divided into two sections.

1. Mixed dentition treatment.
2. Permanent dentition treatment.

The treatment that we carry out in our practice, in the mixed dentition stage of development, is limited to the aligning of the incisors in the space available. Some examples of this are:—

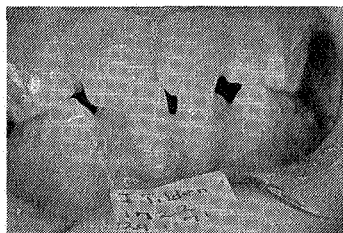


Fig. 1.

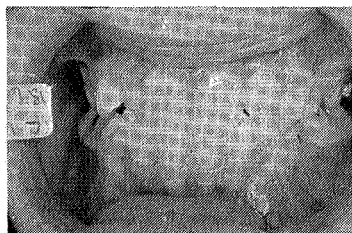


Fig. 2.

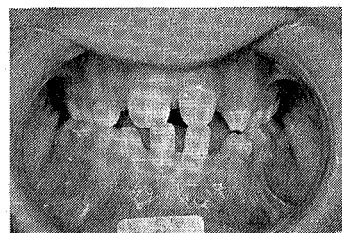


Fig. 3.

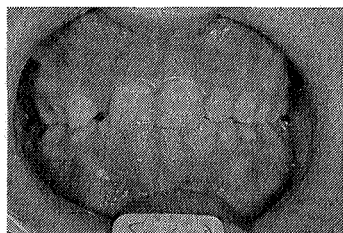


Fig. 4.

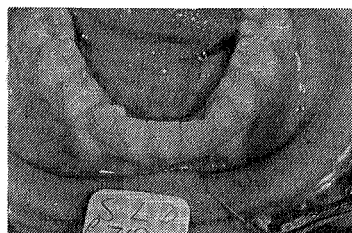


Fig. 5.

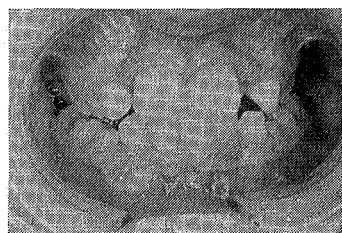


Fig. 6.

1. (a) Correcting an inlocked upper incisor tooth, which by virtue of its malposition, is causing malpositioning of the lower incisors. This is done by use of either an inclined plane or a fixed finger spring appliance (Fig. 1).
1. (b) The more complex inlocking of the upper and lower incisor teeth, which will require a short treatment with upper and lower banding of the four anteriors and six year old molars to relieve the initial crowding (Fig. 2). This would be followed by a later banding treatment when all permanent teeth anterior to the six year old molar teeth had erupted. In the case I am about to show, the treatment in the permanent dentition would most probably require the extraction of four permanent teeth.
2. Badly misplaced lower lateral incisors which interfere with the eruption of the lower canines (Fig. 3). This requires lower arch banding.
3. This to my mind is the most important treatment we do, that is no treatment at all (Fig. 4, 5). In this way I feel we use

the crowded deciduous and permanent teeth to act as space maintainers, as well as all the other necessary functions that they perform. We merely postpone as much treatment as possible until the permanent dentition has erupted and at such time, we can fit upper and lower arches and correct all aspects of the malocclusion at the one time. This case showing exfoliation (not extraction) of the lower right deciduous canine with subsequent shift of the lower centre line to the right (Fig. 6). We could leave it alone and wait till later or extract the lower left deciduous canine and have the centre line perhaps, correct itself but we would have lost valuable space in doing so.

However, in most cases we feel better that we wait — this gives the following advantages:—

- (1) Cuts down active treatment time.
- (2) Increases chance of patient co-operation at an older age.
- (3) Decreases overall cost to the parents.

*Based on a Lecture presented to the N.S.W. Branch of the Australian Society of Orthodontists, 5th May, 1971.

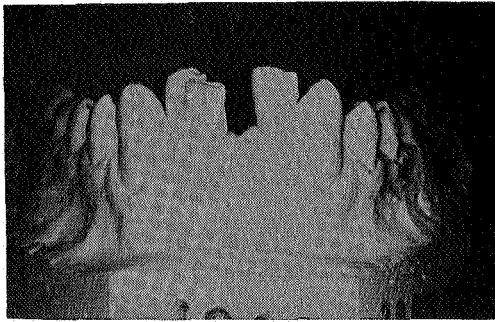


Fig. 7.

Permanent Teeth.

This leads to the discussion with regard to the treatment of lower incisor teeth in the permanent dentition. As our practice is orientated around the Begg technique, the greater percentage of our patients are treated when they have achieved their permanent dentition.

Nearly all our permanent dentition treatment is done with full upper and lower bands. There is the rare case, however, when we may correct lower incisor crowding with an adult patient by extracting a lower incisor tooth and aligning the remaining teeth with lower banding alone. (Fig. 7, 8).

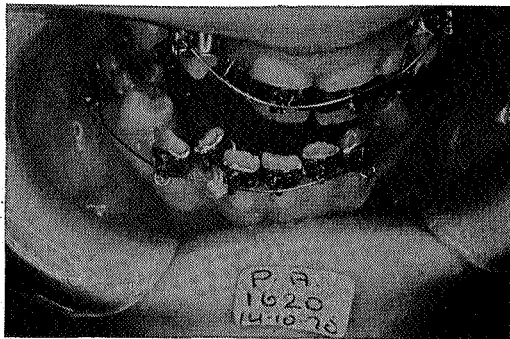


Fig. 9.

There is no doubt, as pointed out previously, the greater majority of our patients, be they Class 1 or Class 2 malocclusion, present with some degree of lower incisor crowding and we are greatly influenced by the state of the lower anterior teeth and it is a general rule in these cases for teeth to be extracted followed by upper and lower banding.

In the first stage of our treatment, we endeavour actively to move the canine teeth distally by making use of the extraction spaces and so create sufficient space for the alignment of the incisor teeth. In the lower arch this is achieved in three ways:—

- (1) Natural drifting of the canines after the extraction of the first premolar teeth.
- (2) By use of a preformed arch, which from canine loop to canine loop measures the estimated ideal distance which will allow

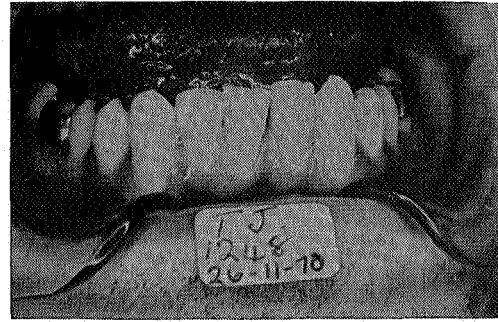


Fig. 8.

us to adequately align the lower anteriors. This is best explained by photos (Fig. 9, 10).

As you can see from the photos, the arch is initially pinned into the canine bracket and then lightly ligated to the lower incisors. (3) An added impetus is given to the movement of these lower anterior teeth by using elastic thread ligature, which is tied to the tooth and the arch wire, in order to rotate the mal-aligned tooth (Fig. 9, 10).

You might have noticed, in all these photos, all the equipment we use has been thought out in order to allow us to adapt our

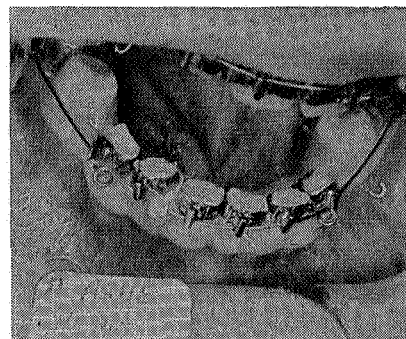


Fig. 10.

treatment along the lines we have explained.

In order to carry out the treatment that I have outlined, we have carefully chosen what equipment we will use.

- (1) The Dentaurem Bracket with upper and lower slot allows us ideal tying position for both our ligature and the elastic ligature during rotation.
- (2) The Preformed Unitek Unisil Arch wires allow us far greater scope and let us take far greater liberties than otherwise would be possible. But, I will have more to say about this wire at a later talk I have to give at the Melbourne Congress on "The evaluation of .016 inch orthodontic light wires."

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LOWER INCISOR TEETH***R. A. Miles, M.D.S., F.A.C.D.S.**

I would like to introduce this paper by referring to three cases presented at the clinic day last June, 1970, all with varying degrees of lower incisor crowding. All cases are non-extraction treatments.

Case One.

(Fig. 1, 2, 3) had preliminary treatment for 17 months with cervical head gear, followed with a full banding treatment of 7 months. Age at commencement was 9 years and at last records was 13 years. At this time, his occlusion was satisfactory, although some incisor overlapping is now evident.

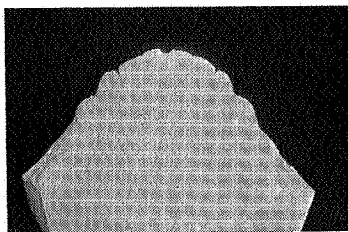


Fig. 1.

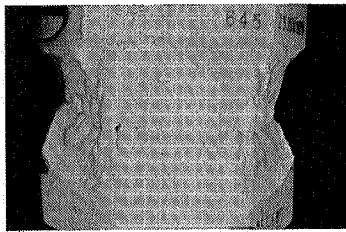


Fig. 2.

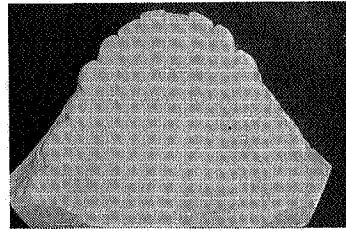


Fig. 3.

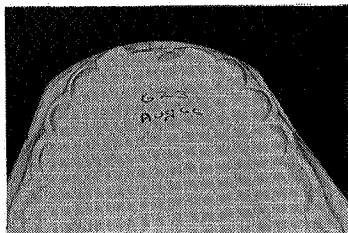


Fig. 4.

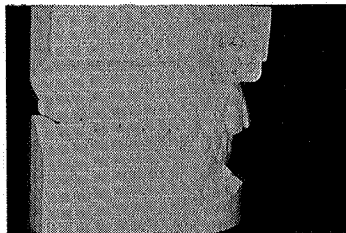


Fig. 5.

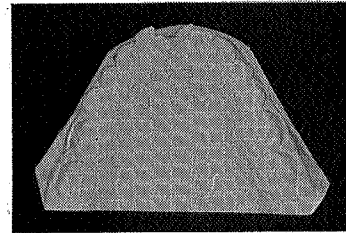


Fig. 6.

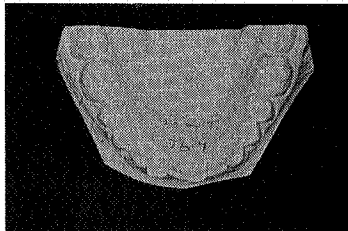


Fig. 7.

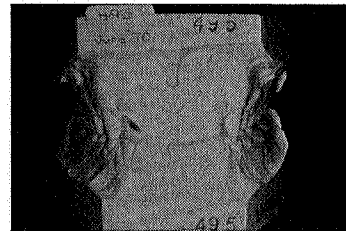


Fig. 8.

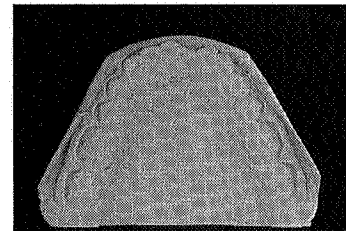


Fig. 9.

Case Two.

(Fig. 4,5,6.) was a full banding non-extraction treatment. The rationale for non-extraction in Case two was that the patient was a thumb sucker even at the age of commencing treatment, and I hesitated to have extraction spaces should there be no improvement in this habit once treatment commenced. As can be seen, there was some arch space available in the premolar regions, but very little. The final occlusion has settled into good relationship in the posterior teeth, although the lower incisor crowding is just as bad, if not worse than before. Age at commencement was 13 years in 1966, and at final records was 16½ years in 1970. Treatment time with full bands was 15 months.

Case Three.

(Fig. 7,8,9.) was almost a typical Class II Division 2 malocclusion, and a non-extraction procedure was followed for two reasons.

Firstly:—

A complete lower arch in deep overbite cases sometimes reduces distortion to the appliance while the bite is opening. This procedure is sometimes followed, even though extraction in the lower arch is planned once the bite is less of a problem.

Secondly:—

It was hoped that if sufficient correction was obtained in a short treatment, then

*Based on a Lecture presented to the New South Wales Branch of the Australian Society of Orthodontists, 5th May, 1971.

perhaps the little amount of Class II elastic traction would not unduly disturb the lower arch. When final records were taken, there was still a considerable degree of lower incisor crowding.

Age at commencement was 14 years in 1966, and at final records was 18 years in 1970. Treatment time was 11 months.

In summary of their treatments, I was happy with **Case one**, but this treatment from start to finish was 24 months, and I am certain that this boy will have something approaching an excess of incisor crowding once he reaches his twenties. Consequently, I would now treat each of these with the removal of four teeth, and not worry about attempting to avoid extractions.

Years ago, when doing work relating to head gear treatment, it was impressed on me that the number one requisite for this treat-

same, particularly when viewed in conjunction with the loss of tooth size as a result of decay and only average restorations in the deciduous teeth. This boy has a normal enough anterior relationship and can be safely left for a further appraisal once a lot more permanent teeth have erupted. I feel in this type of case, that treatments loosely called interceptive and preventive would only involve your patient and parent in unnecessary expense and treatment time without eliminating the need for treatment and extractions later.

The timing of treatment in relation to growth is another important consideration, and is a problem in mixed dentition treatment. A corrected malocclusion at the age of 11 or 12 in girls and 13 or 14 in boys, can deteriorate by the time the respective growth period is completed into a malocclusion showing further incisor crowding.



Fig. 10.



Fig. 11(a).

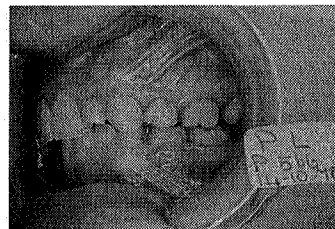


Fig. 11(b).

ment was that a good lower arch must be present. It has taken me a long time to realise just how infrequently an orthodontist sees this good lower arch at the initial consultation. They do exist, but I doubt if many of their owners require any treatment.

What do I look for at the consultation? From habit now, I first look at the lower incisor teeth before bringing the teeth into occlusion. In the permanent dentition, I also now count the number of incisor teeth between the lower canine teeth; it is embarrassing having the parent point out that there is either a tooth missing, or a supernumerary incisor present. This also ensures there won't be incisor bands left over after cementing!

In the mixed dentition I suppose I tend to make hasty decisions and forecasts to myself in relation to that particular patient's chances of accommodating all his permanent teeth.

Lower incisor imbrication of a marked degree (Fig. 10) invariably makes a decision to postpone treatment until all teeth have erupted, almost automatic.

In lesser cases Fig. 11, (a) & (b) the reaction is slower, but the decision is still the

However, if the crowding or malposition of lower incisor teeth is so severe as to complicate the eruption pattern of successive teeth, either in the lower arch itself, or in the upper arch then that particular problem is treated, but anything else is again left to later. Figure 12 shows lower lateral teeth erupting in contact with deciduous molar teeth, indicating treatment.

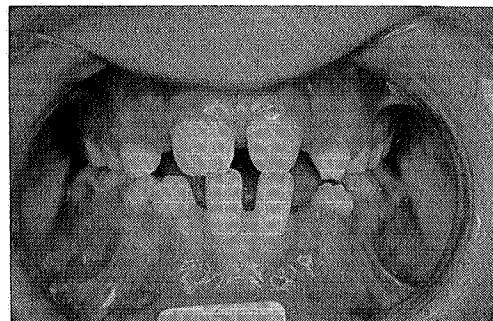


Fig. 12.

If the lower incisor teeth and lower arch is good (Fig. 13) then a treatment can be commenced in the mixed dentition, with the aim of completing the treatment quickly and also re-

stricting all treatment to this particular period, although retention is more of a problem.



Fig. 13.

In the permanent dentition I suppose the appearance of the lower incisor teeth could be classified in 3 ways:—

Group 1.—a good lower arch with ample spacing, when it would be hoped to correct any malocclusion of the Class I or II type without lower arch extraction.

Group 2.—a good lower arch with no spacing, when any treatment that requires lower arch support is best resolved by having the removal of some lower teeth, prior to full banding.

Group 3.—a crowded arch, when extraction is automatic for correction to be successful.

I suppose it is in these very large Group 2 type patients that most variety of treatments are found. I would now like to give some reasons for this all or nothing approach.

I believe that with techniques available to-day, the closure or almost complete closure of lower extraction spaces is not the worry or time consuming exercise it might have been previously.

We now have available arch wires with improved physical properties, making breakages and distortion the rarity; molar tubes with flanges that enable a lower gingival placement of the buccal tube to assist in bite opening procedures; the use of a-lastiks is to overcome patient co-operation problems; these are just some of the aids available to-day, which did not exist, even a few years ago.

Consequently, treatments can be planned to incorporate lower banding and lower arch anchorage, and the philosophy of replacing lower arch treatment and anchorage with extra oral anchorage can be eliminated. I believe that there are few malocclusions which do not benefit, both in treatment response and also in the final finish, with some degree of bite opening. The only effective method of achiev-

ing this is by having the lower arch banded and included in the treatment with light elastic traction.

It is my firm conviction, that, unless there is unusual spacing in the premolar or lower incisor region, then any other type of lower arch will only be reduced to a more crowded one as a result of full banding treatment, if no anchorage is made available by means of extraction. Lower incisor teeth are depressed into a more restricted bone space in bite opening procedures. Consequently a good lower arch will inevitably show this deterioration if bite opening is done properly. Figure 14 shows such a lower arch that would be affected in this way if it were subjected to class II traction without establishing anchorage by means of extraction.



Fig. 14.

The cases presented at the beginning show fairly effectively that no improvement should be expected if extractions are not done. On the other hand, I should make it clear that in none of these cases, was any effort made to expand the lower canine width to accommodate the excess tooth structure in this region. I have yet to see how an alignment of a crowded arch can be maintained successfully if expansion was the only method of gaining the space to align the lower incisor teeth.

Naturally, this does not apply to cases where there is constriction in the lower canine regions. Expansion, in my interpretation, is to move teeth into a position beyond their normal alveolar position. Expansion techniques must necessitate a much more prolonged, if not eternal retention. While I consider retention a part of treatment I do not consider it a part of life and am reluctant to use it to hold teeth in a false position, unless for some extreme aesthetic reason (e.g. Cleft Palate).

So far, I have made no mention of mesial migration, which, I pessimistically feel, inevitably makes a very slight alignment problem a

major one over a period of years. This unknown quantity of mesial migration can be countered to a degree by the removal of teeth. Its problem is not remedied by maintaining throughout treatment an intact arch with even very slight breakage of contact areas.

I have heard objections to this extraction routine on many occasions, principal one being that the face is flattened because the lower incisor teeth move too far lingually. I don't believe this! I believe that the lower incisor teeth are held in a very precise position for each patient by that patient's tongue and lip and consequently cannot be moved too far lingually as the tongue is such a strong muscle. They may be proclined too far labially if the lower lip is not quite normal in behaviour and tone.

Summary.

In summary, then, an attempt has been made to show you how I react to lower incisor teeth; namely,

1. My pessimism concerning mixed dentition treatment that seek to regain space already lost through premature loss of teeth or a tooth size/bone size discrepancy.
2. My uncertainty and doubts as to treatments in the mixed dentition, where the lower arch is intact, but some slight incisor crowding

exists. I feel that in these cases the total of treatment throughout these years would be little less, and sometimes more, than a concentrated treatment of full banding at the appropriate age later.

3. The isolated cases when the lower arch can be used in treatment without extractions, but due consideration must be made for future growth which is extremely difficult to predict.

4. My certainty that lower arches and incisor teeth cannot be expanded beyond their alveolar limits without relapse unless retention of an unnecessary amount is used.

5. My belief that lower incisor teeth cannot be moved and left permanently in a too lingual position because extractions were done in the lower arch.

6. My uncertainty about determining to what extent compensation should be made for mesial migration.

In conclusion it could be said that the lower incisor teeth hold the answer to a large part of the diagnosis problems and associated treatment planning and also demonstrate the degree of success of treatment to a remarkable degree.

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ITEM OF INTEREST

For people who use a small orthodontic soldering torch, and do not have the facility of compressed air, then this can be overcome by the use of a Fish Tank Bubbler.

A Fish Tank Bubbler was found to be satisfactory with the conversion to natural gas. With natural gas it is particularly difficult to keep the flame alight without having the air supplied at a constant pressure. This cannot be done manually by blowing. On the other hand, the Fish Tank Bubbler does supply a constant supply of air and is most satisfactory.

From: O. P. BLACK, M.D.Sc., D.D.S., F.A.C.D.S.
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