Periodically an author of an Original Article feels that a new material or product, which has been developed subsequently to the publication of the article, has changed or extended the view of that author on particular aspect of his/her paper. This section of the journal has been opened to cater for that situation. On the other hand, considerable changes would indicate a separate paper.

NEW APPROACHES TO THE BEGG TECHNIQUE

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With the further development of near-alpha titanium (Hazel 1984, Wilcock 1988) or alpha-beta titanium wires (close packed hexagonal) into rectangular formats in Australia, their use as a finishing archwire has been noted (Mollenhauer 1988). Other orthodontists have since confirmed through personal communication that they are more comfortable for the patient to insert compared to other wires of similar dimensions. But it is a personal observation that after six weeks in the mouth, they become rather brittle to bend, particularly for cinching back — therefore any modifications should be made by six weeks. This strange phenomenon is thought to be due to the vanadium content according to Mr A.J. Wilcock (personal communication). At this early stage the stiffness seems to increase but it does not appear to keep increasing with the brittleness over the months.

As the use of rectangular finishing archwires becomes more widespread by Begg practitioners, it would be wise to document the objectives for this stage as has been done for the standard three stages (Begg 1965) — especially for study group case presentations.

OBJECTIVES OF BEGG FINISHING STAGE

The over-riding rule is that one should look at the case as at the time of placing the finishing archwire and compare it with the original study models to fabricate the finishing archwire. A cookbook approach is untenable.

The case should be corrected to, or reduced to, a 10½/10ths overmovement. This will depend on the relative size of the archwire's smaller cross-section to the bracket slot. Some sloppiness of fit seems preferable to prevent gingival stripping, but naturally the wire should not be able to spin in the bracket.

1. Correct the flaring of molars

This should be done in the manner described in the original article using a ribbon arch, after the distal ends of the round molars tubes have been squeezed onto a piece of wire (acting as a template) slightly large than the one to be used. If the squeezing has been too enthusiastic to preclude removal of the template wire, it may be released by squeezing at right angles.

Because the finishing rectangular archwire will exert a buccal root torque on the molar and premolars, these teeth will contract considerably. Therefore it is prudent to compensate for this by expanding the archform in the buccal segments — and more so if there had previously been a buccal crossbite.

2 Complete or correct torque of others

Particular ones to note before inserting the finishing archwire are:

(a) where the lateral incisors were originally instanding. The older the patient, the more desirable it is to overmove the roots, but some judgment and monitoring is required to ensure gingival recession is not produced.

(b) The apices of the canines should be assessed, especially if associated with the last condition. In general, a torquing bend is placed mesial to the upper canines to torque their roots buccally to establish a canine eminence. Of course, occasionally the roots are too prominent which requires palatal root torque.

(c) The premolars should also be examined individually, but the principle of progressive buccal root torque should apply. That is, there should be a little more torque in the premolars than the canines, and even more in the molars — in general. Sometimes in the interests of overmovement, the roots of some premolars require palatal root torque if there has been a scissor-bite or reverse crossbite.

(d) The apices of the upper centrals should be distalised usually in Class II cases and moved forward in Class III cases, but there are exceptions dictated by the original positions of the apices. An important point to remember is that after a few months with a rectangular finishing archwire the reciprocal effects from the buccal segments will start to take effect. This is why experience will guide the practitioner to more cautious overmovement.

3. The root torque of the lower teeth.

As well as the situations which require individual root movements for the sake of overmovement, there is the problem of where to place the lower incisor apices in general. This is so important and these papers are at such variance with previous dogma that a separate section is warranted. If one is not prepared to routinely take pre-finishing cephalograms it may be safer to accept the old teaching. However, the old teaching stated that the apices will settle forward due the occlusion if they were distalised too much. This is simply not true. In fact, the reverse is true three to five years post-treatment, except for Class III cases and the rare Class II older patient. Therefore compensation should be made for this by moving the apices forward. But it must be monitored cephalometrically to ensure it is not overdone. This approach offers considerable anchorage potential in Begg cases which invariably finish with the lower apices pivoted too distally, especially if archwires are not continually reformed and replaced. Dr Begg strongly condemned the practice of frequent archwire changes. The distalising of the lower incisors apices occurs whether the apices are mesial to or distal to the perpendicular from the condyle centre through the incisal edge. Most cases have the apices distal to this line pre-treatment. In fact, all the teeth of the lower arch usually require their apices to be moved labially/buccally with the finishing archwires.


Midlines should be corrected before the finishing stage, but they may be fine tuned into slight overmovement with uprighting springs where justified, or anterior elastics.

5. Interdigitation of the buccal teeth.

The incidence of relapse of Class II buccal relations decreased many years ago for the author when attention was paid to 'socking' in the cusps in the buccal segments — the premolars in particular. This is easier to do with
the finishing archwires than replacing the brackets or bands. This brings up an important point: the Begg technique does not need a straightforward approach, except for rotations, because the fine tuning is only done at the end of treatment. That is, the gross movements, even overmovements, are concentrated on earlier in treatment, then the fine details can be concentrated upon at the end. This includes adjusting for aberrant bracket positions, which even straightforward exponents have to do quite commonly at the end of treatment to really tidy up the result and individualize the result.

Also in this consideration is the full vertical occlusion of the lower canines, especially in high angle or dolichofacial cases. In Class II cases, early in treatment it is an advantage to intrude the canines to facilitate correction of their Class II relationship, but this ‘expediency’ must be corrected in the finishing stage. The same reasoning applies to the canine roots — during Stage III, the apices should be well in the cancellous bone to facilitate uprighting, but once this has been achieved then the roots should be labialised to create a canine eminence. This applies especially to canines formerly in the palate.

6. Incisel guidance especially for high angle cases. The edge-to-edge objective of earlier stages is another expediency to allow overcorrection of rotation whilst maintaining a minimal or zero overjet. In the interests of overmovement this may be maintained in brachyfacial types, but it is most unwise in dolichofacial types because they may not settle in. In fact, they usually do not, so a positive overbite should be created in a high angle case at the end of treatment.

7. Alignment and rotations back to 10½ /10ths. In the past, the working hypothesis was that overmovement would solve most problems. However, a number of teeth did not return from gross overmovements, and often one had to explain the principle of overmovement to distraught parents following debanding. Finishing archwires eliminates both these problems. Also, the time taken to tidy up each case provides some degree of controlled retention to further stabilise the case.

8. Levelling of individual teeth and OP horizontal. If the case was properly bonded/banded initially, this manoeuvre theoretically should not be necessary. However, occasionally teeth are bonded which do not have similar surface characteristics to their counterparts on the opposing side. One needs a procedure without time constraints to correct these and other problems, whilst maintaining control of the other movements, such as the torque with rectangular archwires. Tipped occlusal planes are not correctable with removable retainers, so it must be done before debanding. Periodically, an upper canine is bonded whilst still high which precludes the proper placement of the bracket vertically. If it is not extremely out of position, there is a temptation to leave it there through to the end of Stage III. Stepdowns in the finishing archwire can correct such aberrations.

9. Molars rotated and expanded appropriately. These points can be attended to with the finishing archwires. In cases with former buccal crossbites, sometimes the buccal root torque of the upper posterior teeth will throw the crowns palatally. Therefore the finishing archwires need more expansion than usual. In fact, the presence of headgear tubes can be most useful on occasion to allow the attachment of a -030° piggyback arch to aid the expansion or contraction of upper molars. If such a wire is chrome-cobalt, it should be heat treated, and it usually does its job in six weeks or less.

10. Fine-tune uprighting of individual teeth. Uprighting springs may be placed to complete one or two teeth which are either slower than the others, or which relapse even with T-pins (TP Laboratories). If the latter applies to the upper centrals, a 'U' staple as described in the original article is preferable.

11. Checking and trimming lingual anatomy of upper anteriors. It is prudent not to leave this to the day of debanding/debonding in case it is not done before the impression for the retainer is taken.

12. Periodontal considerations for orthodontists

Also, the gingiva health can often be improved during the finishing stage because there is less tooth movement being done, the teeth are not sore and the archwires are less complicated than Stage III — to enhance oral hygiene procedures. In this issue of the journal there is an article by Bastiaan (1988) and the Editor's newsletter also considers the endo/peri/ortho interfaces.

REFERENCES


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