

Orthodontics without extractions

Based on an understanding of 'functional jaw orthopaedics', Hugh McDermott presents a case highlighting the use, the benefits and the magic of ALF (advanced light-force) appliances

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MAHATMA GANDHI

To most patients and very many dentists, the world of orthodontics involves the treatment of overcrowded teeth, crooked teeth, misplaced teeth or abnormal jaw relationships through the extraction of one, two or four teeth (even sometimes six or eight teeth if serial extractions are involved) and often extending to the prescription of extensive maxillofacial surgery. The end result is definitely straighter teeth, but at what cost to normal oral and nasal function as well as resultant body function and performance? And let's not forget facial aesthetics.

In the current conventional scenario, all patients are matched to one of two or three treatment modalities involving two to three years in 'bands and brackets'. There is the limitation, however, that treatment does not commence until the 11th or 12th year – when all the permanent teeth have erupted (apart from the wisdom teeth, which are often subsequently removed when due to erupt at 18-20 years old). This is an approach that sidelines the cause of the malocclusion as a genetically determined type of structural immutable event – so

treatment is solely centred on a purely corrective approach. Further, if one has missed the 'golden hour' for this corrective treatment, then the opportunity is unfortunately judged to have been lost in most cases!

Meanwhile, away from the mainstream, an alternative, more causal-based approach to the malocclusion has been evolving and growing in acceptance in different parts of the world. Thanks to the advent of the information age, this approach is now more readily disseminated to interested orthodontists and general dentists world-wide. This other approach certainly sees malocclusion as part genetic, but superimposed on that are often oral and/or nasal functional deficiencies (viz. mouth breathing, infantile swallow, lip function) and even postural problems.

The cumulative experiences of these orthodontists and general dentists with their successes are adding to the evidence basis for this 'other', more cause-oriented and evolved individualised approach to treatment of the malocclusion. This more enlightened modality avoids the extraction of perfectly good teeth in all but a very small number of cases, thus doing away with the closing of the created extraction spaces along the arches with strong 'force-driven' mechanics and the unavoidable resultant 'locking-back' of the face.

Instead, this newer arch

development approach centres on a philosophy of firstly addressing the oral/nasal functional defect(s) contributing to the malocclusion or crowding and sets about creating the room for the crowded-out teeth, by the use of very light, more stimulating forces to 'encourage' bone growth. Thus the arch size is increased to that which nature had intended in the first place to accommodate all of the teeth. This brings about a triple positive result of:

1. Straighter teeth
2. An improved overall facial appearance and posture
3. A better oral and body function.

Case presentation

The following is an adult case treated using the light force arch developing ALF appliances, adjusted once every few weeks, combined with myofunctional exercises when necessary to address the cause of the malocclusion (the infantile swallow/mouth breathing, etc); this develops the dental arch to accommodate the crowded-out teeth.

These easy-to-wear removable appliances are worn on the inside of the mouth, which are hardly noticeable, for the majority of the treatment time. Treatment is finished off with just a few months of semi-visible brackets – also with 'light force' wires that conform to the concept of


the ALF philosophy. This final phase of brackets is not always necessary – it is simply a means of 'tying up' when needed.

The implication

With this well-established arch development approach, the implications are enormous for the many branches of dentistry, since the appliances are so easy to use and so readily tolerated by most patients.

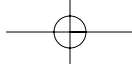
For dentists applying veneers, if one corrected the occlusion first so many 'fractures' could be avoided. In the implant, crown and bridge field, a little tooth movement before treatment can create the potential for a more balanced and more aesthetic result. In terms of periodontal treatment, if you develop an arch to take traumatically occluded and mobile teeth (attributable to one-third of the cause) out of trauma, you improve the chances of a successful outcome. As a final example, in paedodontics 'interceptive' arch development creates room for the succeeding permanent dentition in a developing malocclusion case.

You name it, there is a place for light force arch development in most branches of dentistry. As dentists, perhaps we need to develop a 'pentathlon' view rather than the prevalent 'compartmental' one.

Look out for future articles covering the use of ALF in other areas of dentistry, together with case presentations. 



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Dental and facial views before treatment. Note the crowded-out lateral incisors, retruded centrals, the underdeveloped narrow upper arch and the lower arch retruded in a classic Div 11 conformation – all contributing to the cause of the presenting TMD problems in this patient. The photographically evident ‘black triangles’ or ‘buccal corridors’ in the smile is a well recognised and despised facial appearance for most patients, often pre-existent in a standard orthodontic case and/or exacerbated by the conventional treatment modality

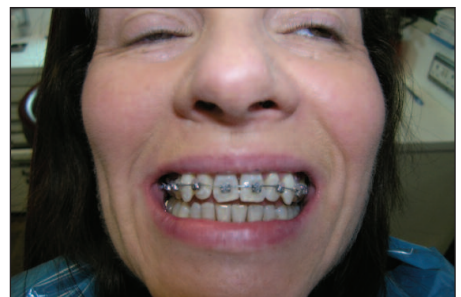
In this mirror view of the upper jaw, we see the ALF appliance in position. Note the light wire with the celebrated central omega loop, the core of the adjustment process, which does require educated and innovative thinking in doing the necessary adjustments



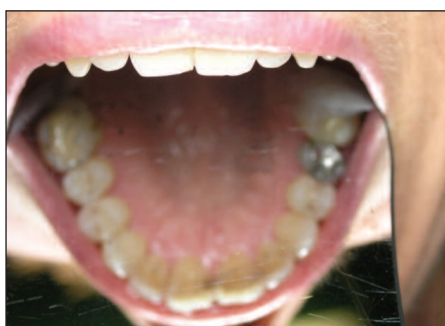
The ALF appliance is a development from the original Crozet appliance. Note the size of this central omega loop at the commencement of treatment, to be compared with the view 11 months later!

The lower appliance – so easy to wear

It is difficult to tell both appliances are in situ



After routine adjustments every five weeks over a period of 11 months, the arch has been developed to accommodate all the teeth – as nature intended. The teeth were then etched for the short-term bracket wear for ‘fine tuning’ and the closing of the bite. Note the ‘expanded’ omega loop over the treatment time; it is far from the narrow size at the start of treatment



The case speaks for itself, I am sure you will agree – a natural looking end result. Would the 4x4 extraction and Bs and Bs have given the same improved facial appearance?

Where have the so-called ‘black triangles’ or ‘buccal corridors’ gone?

