

Volume 6 Issue 3

The Clark Twin Block™ Appliance Craniomandibular Dysfunction Bonding Composites Voice of Experience



WILLIAM CLARK, B.D.S., D.D.O.
Orthodontist
Fife, Scotland

WILLIAM CLARK, B.D.S., D.D.O. Orthodontist Fife, Scotland

A CASE REPORT:

Patient G. D., Age 14 Years

This boy presented a well established permanent dentition and had almost grown to his full stature before attending for treatment.

He presented an Angle's Class II division 1 malocclusion with an asymmetrical overjet of 6 mms. on the right central incisor and 10 mms. on the left central incisor. The overbite was deep and complete and the buccal segments showed a full unit distal occlusion.

Twin Blocks™ were fitted with intermaxillary traction which could be applied either to ball clasps distal to upper canines, or to a removable Class II bow which was inserted in tubes incorporated in clasps on the upper appliance (Fig. 1). The Class II bow was worn only at night to improve aesthetics. Springs were included to advance retroclined upper incisors and a midline screw to expand the upper arch. Full antero-posterior correction was achieved after 8 months, with the anterior teeth aligned and the posterior teeth nearly in occlusion.

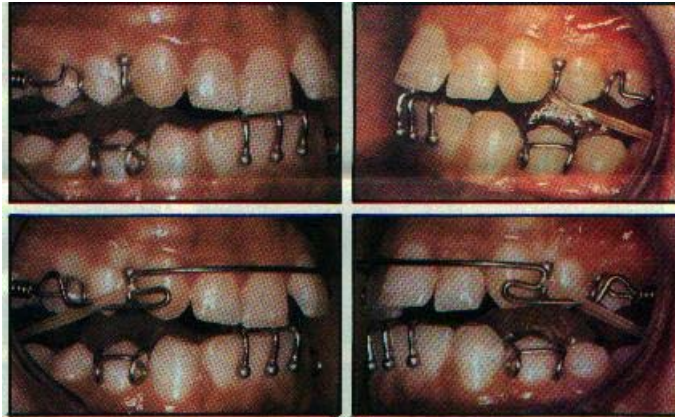


Fig. 1

Twin Blocks™ with intermaxillary traction to ball clasps for daytime wear. Intermaxillary traction to a removable Class II bow for night time wear.

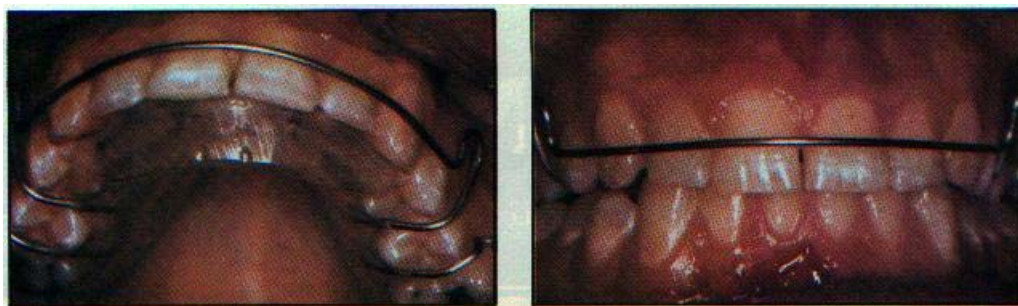


Fig. 2

Anterior inclined plane for support and retention.

The Twin Blocks™ were left out at this stage and replaced with a simple upper appliance with an anterior inclined plane to support the corrected occlusion (Fig. 2). Support and retention continued for a period of 16 months, reducing appliance wear when the buccal segments were settled into a stable occlusion with good cuspal interdigitation. The total treatment time was 2 years, including retention, and no additional appliances were used (Figs. 3A & 3B).

This case illustrates the treatment response to the Twin Blocks™ in a patient in permanent dentition, who has passed the pubertal growth spurt (Fig. 4).

North American Orthodontic Laboratory is a "Certified Twin Block™ Laboratory". In addition, Frank Fox and Bobby Middle have both studied under Dr. Clark to insure correct

fabrication of the Twin Block™ Appliance system. If you have any questions regarding the Twin Block™ Appliance, please feel free to contact them at 1-800-521-2351.

Dr. William Clark is an Orthodontist from Fife, Scotland He is a member of the American Association of Orthodontists and the European Orthodontic Society. Dr. Clark is the originator of the Twin Block™ Appliance system. He conducts seminars on the use of the appliance in both the United States and in Europe.

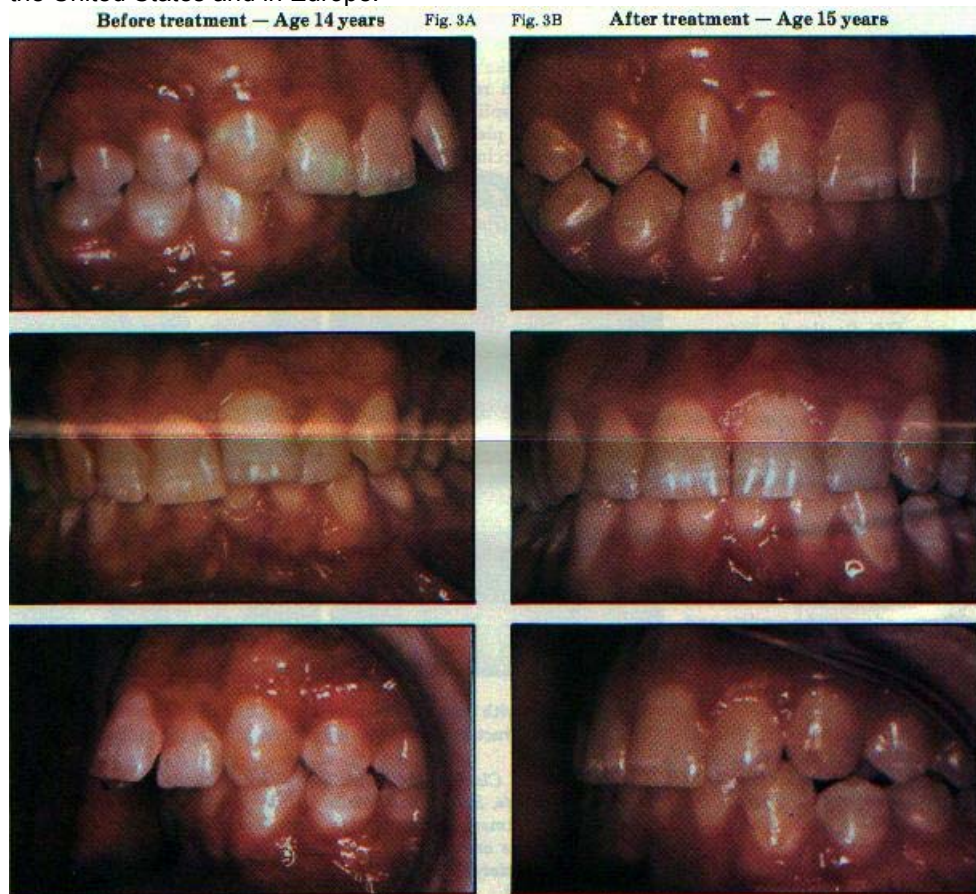


Fig. 4



Facial views — Before treatment.

Facial views — After treatment.



Craniomandibular Dysfunction

Even though I had been involved in “TMJ” therapy for some years, there were always unanswered questions. I felt flustered when teeth would break for unknown reasons, or when I would have difficulty in achieving a comfortable occlusion with a patient. I had seen, but could not explain, why teeth wore down. One patient had a full mouth reconstruction and in 10 years her crowns had worn through. I inquired of her physical welfare, and discovered she had experienced multiple problems for years (very bad headaches, etc.) and had been to numerous specialists with no relief.

Using an earlier technique, I built up her vertical with a splint, and repositioned her mandible to the proper position which relieved her symptoms. When she became stabilized, I reconstructed her mouth to the new position and for the last five years she has been symptom free and leads a quality life with no wear on her crowns

However, using the above technique, I was achieving only approximately 85% success and was concerned with the remaining 15%. This encouraged me to take multiple courses in “TMJ” diagnosis and therapy until I achieved my present rate of approximately 95% to 98% success.

Cranio-mandibular dysfunction is caused by several factors, therefore I think the terms “TMJ” or are constrictive terms and not the causative factors in the major etiological events leading to this multifactorial disease.

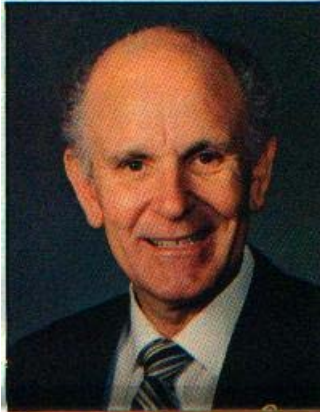
The main component of craniomandibular dysfunction is a structural (osteogenous) imbalance. When the craniomandibular complex is in a linear structural anomalous relationship (ICD 524.10), this causes the muscle (myogenous) component to come into play, creating a neuromuscular spastic condition, which is the major cause of headaches (cephalgia). Dr. Janet Travell, M.D. states that over 90% of all headaches are caused from this condition. Most headaches are diagnosed as vascular, and treated erroneously by most physicians as migraine headaches. If this muscle factor remains long enough, then a third component, called the joint (arthrogenous) phase becomes active, leading to joint compression or loading. If the joint remains in this stressful, hyper-physiological non-homeostatic condition, it will ultimately lead to degenerative joint disease.

This structural imbalance can be approached by the evaluation of many parameters. Bimler cephalometrics is one of the more important diagnostic modalities to look at because its linear analysis and balance, or imbalance within the intra-subject (Fig. 1)

In my experience, I find that the more difficult the case is, the more multiple factors come into play as causative agents. Therefore, the more objective diagnostic tests I have to aid me, the better the treatment plan and success of the case.

If there is an osteogenous factor, the maxilla may be the main cause creating the “MAXILLARY CAGING EFFECT”. If the maxilla is underdeveloped, it causes the mandible to be trapped and prevented from developing, creating a structural imbalance. This leads to a condition called “Incisal Misguidance”, which in turn causes a neuromuscular spastic condition that leads to headaches, etc.

A case in point: a twenty-seven year old female’s muscles of mastication would not respond to any treatment, and continued to be in a state of hyperactivity. In making a pre-maxillary sagittal analysis, using the Korkhaus orthometer, I realized that the pre-maxilla was underdeveloped by 4.5mm (Fig. 2), preventing the lower jaw from



RON SHULER, B.S., D.D.S.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

escaping down and forward. By using a maxillary 3-D appliance (Fig. 3), I developed the pre-maxilla and the palatal areas to their genetic potential, letting form follow function. Within four weeks, using only the maxillary appliance, the muscle spastic condition started to resolve itself. The lower jaw developed 2mm using no appliance, because we had “uncaged” the maxilla. This structural imbalance was the primary cause of her craniomandibular dysfunction and the reason for multiple symptoms (Fig 4, Before and After)

At present, I am using this concept with satisfying results, but, continue to pursue new techniques and treatments for the comfort of my patients until I reach my goal of “100% PAIN FREE”.

Bonding Composites

Bonding composites are supplied in three basic categories. They are paste-catalyst, light cure, and powder liquid. Each of these has a specific area where they function the very best.

The paste-catalyst bonding-system is preferred by most clinicians for general bracket placement. The material should be clear so that it can be used on both porcelain and steel brackets. It should be a “one-step” paste- catalyst composite to eliminate the need for mixing the material. In addition it should be fluoride releasing to prevent peripheral etching around the brackets.

The light-cure bonding system is best for individual bracket replacement. It should be self-polymerizing so that it can be used with steel brackets as well as porcelain brackets and should also be fluoride releasing. The light-cure system not only allows the doctor to immediately religate the archwires, but also allows a lost bracket to be precisely replaced so that larger archwires do not require resequencing.

The powder-liquid bonding system is best suited for use in bonding attachments to impacted teeth. The powder-liquid bonding material can be made to flow over the entire crown of an impacted tooth for added retention. This technique eliminates the need to drill a hole or to ligate a chain around an impacted tooth. This material should be fluoride releasing as well.

All three of these bonding systems are available from N.A.O.L. at very competitive prices. Should you have any questions regarding the bonding materials or their use, please feel free to contact N.A.O.L. at 1-800-521-2351.

VOICE OF EXPERIENCE

As a general dentist, I have constantly been updating my knowledge in orthopedics, orthodontics, and T.M.J. therapy. As a result, I am seeing more and more patients that come to me for a second opinion. How is the best way for me to handle a situation where I honestly do not agree with the diagnosis or treatment plan.

A:

A) I think the key is to place yourself in the position of both the patient and the other doctor with whom you do not agree. Above all, be totally honest and totally professional. Remember that once a statement is made it cannot be retracted.

B) I would begin by explaining the situation to the patient as you see it. Be sure that you have adequate records to support your evaluation. Document your findings in writing so there can be no misunderstandings as to your diagnosis and treatment plan. Make it clear that you do not question the integrity or ability of the other doctor, only his or her evaluation of the patient's problem.

C) If the patient expresses the desire to discuss your diagnosis with the original doctor you should make every effort to communicate your findings even if they are met with hostility. Remember that it is the option of the patient to choose the treatment that they desire.

D) Under no circumstances would I perform a procedure that I felt was not in the patient's best interest.