

W.J. Clark

Twin Block Functional Therapy, Applications in Dentofacial Orthopaedics

2nd edn. 2002. 384 p., 1344 color illustr., hardback, £ 120.–, ISBN 0723431701 (Mosby, Edinburgh – London – New York)

7 years after the 1st edition, William Clark had the 2nd edition of his textbook on twin block therapy published in September 2002. The new edition is thoroughly revised, supplemented by a chapter on three-dimensional aspects of facial growth, and contains almost 90 additional pages. In the first seven chapters the author elucidates his philosophy and the basic principles of twin block therapy. All steps from bite registration and laboratory procedures to clinical management are covered. Like other bimaxillary appliances, twin blocks incorporate inclined planes, but the bulk of the appliance is positioned between the teeth and does not encroach on tongue space, thereby reducing interference with normal function. Clark describes his appliance as the most patient-friendly of all functional appliances and as having been designed for full-time wear including during meals. How many of today's adolescent patients can be expected to display such indefatigable compliance is unfortunately left open.

Chapters 8–24 are dedicated mainly to clinical aspects, first of all to the treatment of Angle Class II malocclusion. Treatment in the mixed and the permanent dentition, combination with extraoral traction – deemed to be generally unnecessary – and treatment of open bite are discussed extensively. Furthermore, there are chapters dealing with management of facial asymmetries, adult treatment and TMJ therapy, the latter not surprisingly limited to propulsive therapy with twin blocks, representing the state of the art as it was one decade ago. According to the numerous case reports presented, the treatment of a full-cusp distal occlusion would take 18–21 months, divided into active treatment, support phase and retention. Since patients normally show a lateral open bite at the end of active treatment, Clark designed for the subsequent support and retention phase a removable plate

incorporating an anteriorly inclined plane, which was aimed at ensuring retention of the sagittal changes as well as the unhindered extrusion of buccal teeth to allow them to settle fully into occlusion.

In his fervor for functional jaw orthopedics (FJO) the author contends that the profile changes seen immediately after insertion of the appliance allowed a good prognosis of the final results to be made. To illustrate the prognostic reliability of the immediate effect, the acronym WYSIWYG (= what you see is what you get) is used. On the basis of this obvious overestimation of the capabilities of FJO, the concept of surgical therapy after cessation of growth is condemned. No less against the tide is the chapter on premolar extraction, which is branded as being contradictory to the concept of functional appliance therapy. While some extraction cases are shown, most crowded cases are resolved by bold expansion, which is labeled with the euphemistic term “arch development” throughout the book. In order to expand the arches more effectively, the author developed various fixed expansion devices, which are described in Chapter 22. The overwhelming evidence of long-term studies reporting the instability of expanded arches is ignored completely in a way that is reminiscent of Angle's outdated non-extraction dogma, which is one of the most enduring of orthodontic concepts, rising again from time to time under a new guise.

The treatment concept presented, one well-known in Germany, relies on expansion of both arches followed by functional appliance therapy. Several chapters are dedicated to giving evidence of the magnitude and the permanence of skeletal effects of twin block therapy. The moment of greatest glory is undoubtedly at the end of active treatment: at that time, skeletal effects in the mandible were found in some retrospective studies to be in the range of 3–4 mm, i.e. half a cusp width, thus almost approaching the effectiveness of the Herbst appliance. Unfortunately, all long-term studies have been unanimous in their conclusion that these skeletal effects are not stable over time, so that patients treated with FJO are almost indistinguishable after some years from those treated with a more conventional approach. Additionally, the skeletal effects found in retrospective studies could not be reproduced in randomized, controlled trials, suggesting that rewarding cases were selected in some retrospective studies.

Without a doubt, the majority of case reports presented demonstrate a substantial improvement. Although most cases were treated without full fixed appliances, a high percentage of compromised results can be found. Many final records show undertorqued upper incisors, uncorrected Bolton discrepancies, spacing of teeth, and up to half a cusp width distal occlusion at least on one side (pages 9, 10, 19, 95, 100, 185, 188, 276). Most orthodontists would probably agree that subsequent treatment with full fixed appliances was desirable in the majority of cases, so that it might be argued that treatment could have been accomplished more efficiently in one single phase of fixed appliance therapy. However, those with a preference for removable functional treatment will find in this textbook comprehensive information on what are probably the most efficient of these appliances, covering all conceivable theoretical and clinical aspects. The

book is generously illustrated and comes in excellent print quality, adding to its comprehensibility and readability. It is recommended to orthodontists and residents, even if they do not share the author's standpoint. The price seems reasonable considering the quality of the book.

H. Madsen, Ludwigshafen