



Dr. Pablo Echarri

Dr. Pablo Echarri has developed the clinical bases of the modern CA® CLEAR ALIGNER therapy. After many years of experience and study of the CA® CLEAR ALIGNER system, a technique allowing the minimally invasive treatments of malocclusions with predictable results and reduced treatment time is achieved.

The principles of treatment, clinical and set-up protocols are established, as well as tables of maximal movements.

The bases of his CSW (Custom-made Straight Wire) Technique, his PST (Progressive Stripping Technique), and his PTMA (Plan, Treat, Monitor, Activate) philosophy are integrated in the sequential CA® appliances.

In this second book:

- The treatment protocol has been updated, and some new materials and instruments are included: transverse expansion screw VECTOR® 40 and 50, oblique-lateral expansion screw VECTOR® 30 with CA® Arch, CA® Distalizer Kit with VECTOR® 350 screw, new pliers CA® TIP 3 and 4, CA® POWER GRIP Set with new CA® POWER GRIP n° 8 and n° 9, and Echarri PST (Progressive Stripping Technique) Set.
- CA® DIGITAL System procedure is explained.
- Complete orthodontic treatments procedure is explained, including extraction and distalization treatments (CA® CLEAR ALIGNER “PROFESSIONAL” 7-7 treatment).
- Preprosthetic treatments procedure is explained (CA® CLEAR ALIGNER “PREPROSTHETIC” treatment).

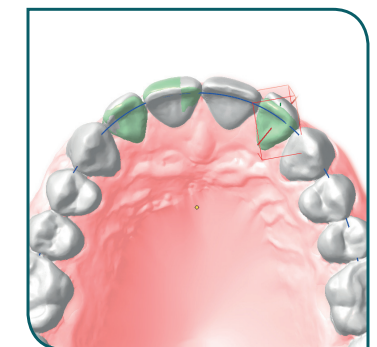
This book is a supplement of the first book and it broadens therapeutic possibilities of the system, establishing the “state of art” of CA® technique.

CA CLEAR ALIGNER ADVANCED

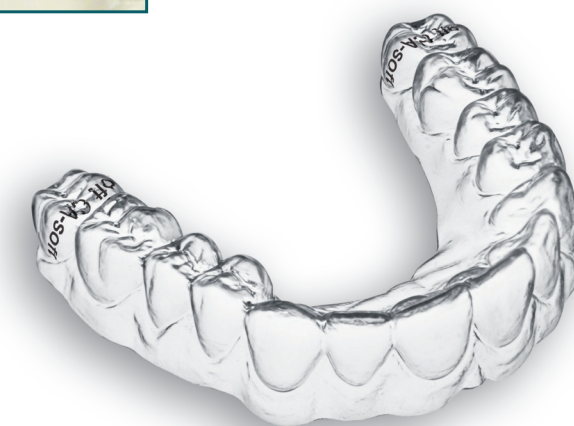
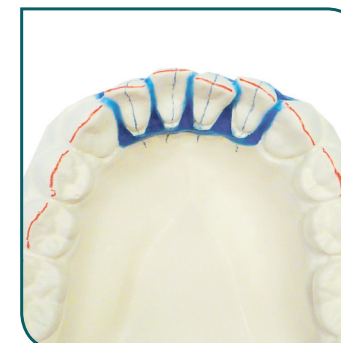
Pablo Echarri

CA CLEAR ALIGNER ADVANCED

CA DIGITAL



CA LAB





CLEAR ALIGNER ADVANCED

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Dedicated to:

Our families, for their unconditional support.

Prologue

Dr. Pablo Echarri has developed the clinical bases of the modern CA® CLEAR ALIGNER therapy. After many years of experience and study of the CA® CLEAR ALIGNER system, a technique allowing the minimally invasive treatments of malocclusions with predictable results and reduced treatment time is achieved.

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- CA® DIGITAL System procedure is explained.
- Complete orthodontic treatments procedure is explained, including extraction and distalization treatments.
- Preprosthetic treatments procedure is explained.

This book is an update of the first book and it broadens therapeutic possibilities of the system, establishing the “state of art” of CA® technique.

The Chapter 1 is an introduction to the CA® CLEAR ALIGNER Technique including the PTMA concept.

The Chapter 2 is an update of treatment protocols including possible variations of the basic protocol when CA® Pliers, CA® POWER GRIP Set or VECTOR® screws are used. The reasons for these protocols are also explained.

It is also explained how to use the new CA® SMART 4.0 software, as well as the new hardware designed for it.

The Chapter 3 is a step by step explanation of the use of VECTOR® screws used for transverse expansion, oblique-lateral expansion and distalization. In the Chapter 4, the use of CA® POWER GRIP Set is explained in detail, and in the Chapter 5, the CA® Pliers use. In this way, these three chapters explain the use of the new armamentarium of the technique, including the new products.

The Chapter 6 explains the space closure treatments both by incisors retroclination and incisors mesialization using the CA® POWER GRIP n° 2 and n° 3, and the Chapter 7 develops the crowding treatment with VECTOR® 40 and 50 screws for transverse expansion, VECTOR® 30 screw with CA® Arch, and Echarri PST Set.

The Chapters 8 and 9 are dedicated to the CA® DIGITAL system, and they explain the protocol for treatment acceptance and aesthetic treatments in anterior teeth. CA® CLEAR ALIGNER “PROFESSIONAL” 7-7 treatments and preprosthetic treatments are studied in the Chapters 10 and 11.

The Chapter 12 is dedicated to an update of CA® CLEAR ALIGNER treatments combined with fixed appliances. The Chapters 13 and 14 expose the instructions which specialists and patients should follow in order to obtain the maximum benefits of the technique.

We wish this book to be as useful and practical as the first CA® CLEAR ALIGNER book, hoping it will be of help for specialists and laboratories dedicated to this technique.

Dr. Pablo Echarri

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Introduction to the CA® CLEAR ALIGNER technique. PTMA Circle

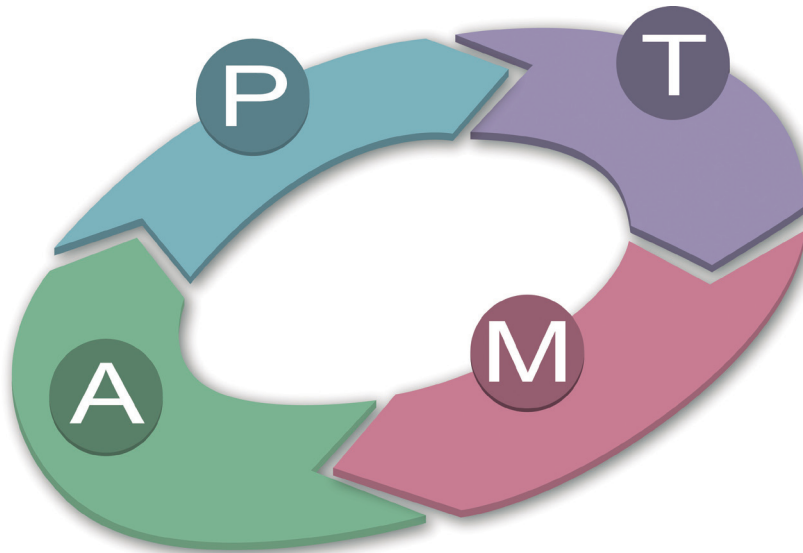


Fig. 1. Plan, Treat, Monitor, Activate. To plan, carry out the Treatment, Monitor and Activate the treatment according to the monitoring result.

The sequential processes of fabrication or treatment i.e., those processes which require carrying out the sequence of various procedures, can easily accumulate errors. Because of this, if all steps are carried out, but only the final product is evaluated, many defective products are obtained. In the clinic, we'll face with the fact that not all treatment objectives are achieved, and it is necessary to carry out an additional treatment in order to achieve the desired position of all teeth.

The Demming Circle for continuous quality control during the sequential processes is: PDCA (Plan, Do, Check, Act) i.e., we should plan, do, check and act according to the results o control. In this way, the continuous quality control is achieved, and at the end of the treatment, the desired result is accomplished without any digressions. The Echarrí cycle, PTMA Circle (Plan, Treat, Monitor, Activate) suggests that we should Plan, Treat, Monitor and Activate the treatment according to the monitoring results, and it also allows us to correct the treatment if necessary, having in mind all the possible variables which frequently cannot be completely controlled:

- Real hours of use of aligner.
- Magnitude of chewing forces, which depend on the musculature of a patient, among other factors.
- Other active forces, such as possible habits of lips, cheeks, objects or tongue thrust.
- Biological response of bone to the action of aligner, which depends on the characteristics of periodontal ligament and bone, metabolic factors, patient's age, etc.

Because of all this, CA® CLEAR ALIGNER has developed the usual clinical and laboratory protocol which allows the monitoring of the treatment and the adaptation of its activation to the individual characteristics of a patient through periodical impressions. In his CSW Technique (Custom-made Straight Wire), Dr. Echarrí established the necessity to customize the treatment protocols for each case and the very same philosophy will be applied to CA® CLEAR ALIGNER treatments.

O2U concept: “Orthodontics to You”

O2U (Orthodontics to You) means Orthodontics designed for a patient and it includes treatments carried out with CA® CLEAR ALIGNER and CLO3 Technique (Custom-made Lingual Orthodontics in 3 steps).

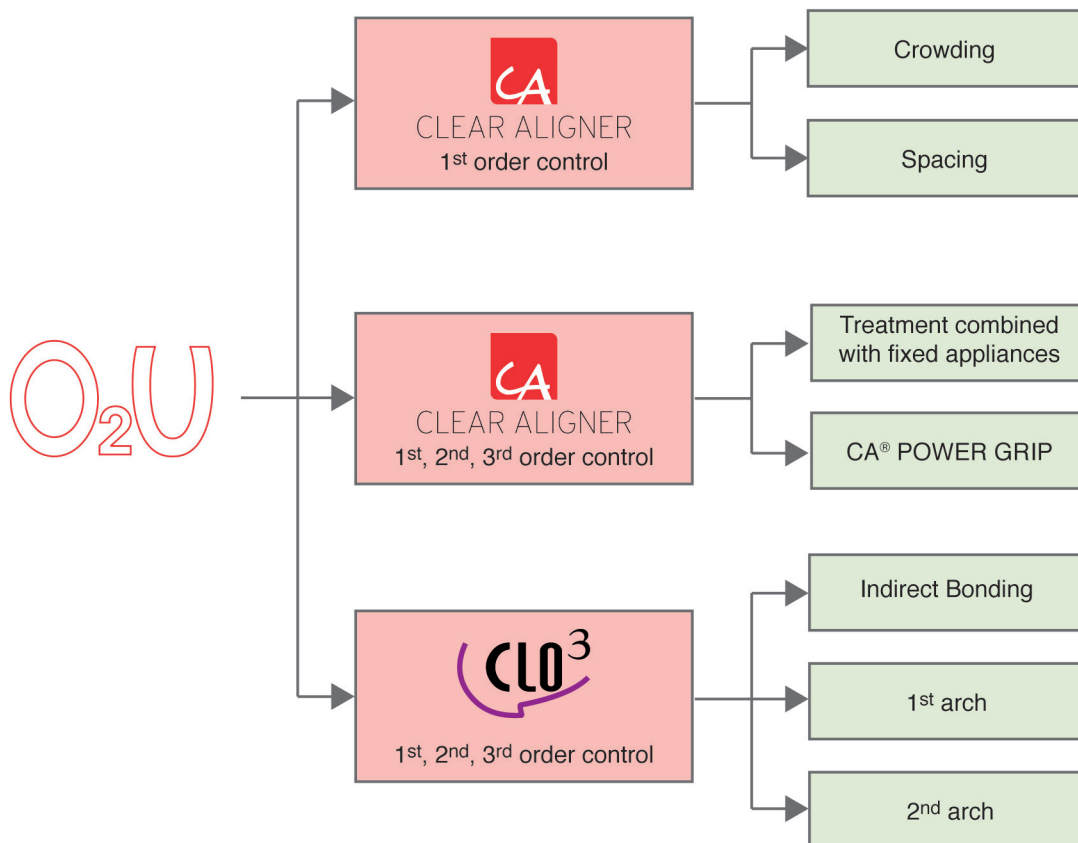


Fig. 2. O2U Scheme.

CA® CLEAR ALIGNER appliances allow the accurate control of alignment, leveling and correction of rotations, i.e., the first order problems, although for some of these movements, such as extrusion or rotation control, additional retention in teeth, carried out with CA® POWER GRIP, may be needed.

For second order control (mesio-distal inclination), or third order control (bucco-lingual inclination), the use of additional retention in teeth carried out with CA® POWER GRIP is necessary, or CA® CLEAR ALIGNER treatments should be combined with fixed appliances treatments, which will be studied later.

The CLO3 Technique is specifically designed for those patients who present malpositioned incisors and/or canines, but correct occlusion of posterior teeth. The treatments are short (4 to 6 months), carried out with lingual brackets bonded from first bicuspid to first bicuspid. The laboratory prepares the CLO3 Kit which includes brackets, transfer trays and two arch wires necessary for this type of treatments. The description of this technique is out of scope of this text, but there are numerous articles listed in References at the end of this book which will allow you to get familiar with the technique.

CA® LAB and CA® DIGITAL

The principles of CA® CLEAR ALIGNER Technique are the same both in digital or analog procedure.

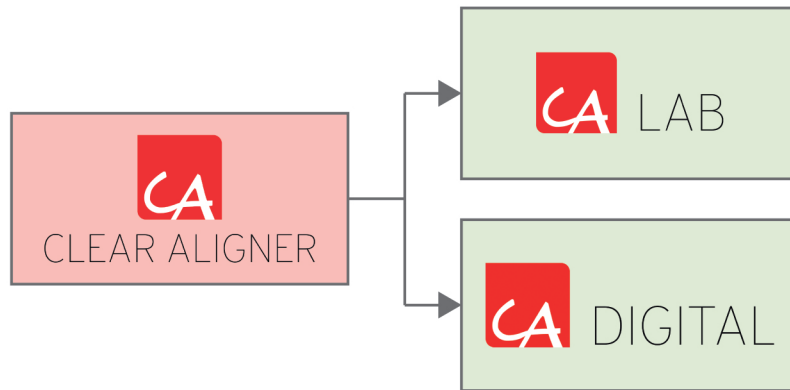


Fig. 3. CA® LAB and CA® DIGITAL Scheme.

The CA® LAB system uses CA® SMART and CA® CHECKER, and the set-up models are carried out manually over the plaster models, as we'll see later.

The CA® DIGITAL procedure is carried out starting from the digital models obtained from digital impressions or from plaster model scanning, the fabrication of virtual set-up models, and digital impression of set-up models.

The aligners can be formed over the plaster set-up models or over digitally printed set-up models.

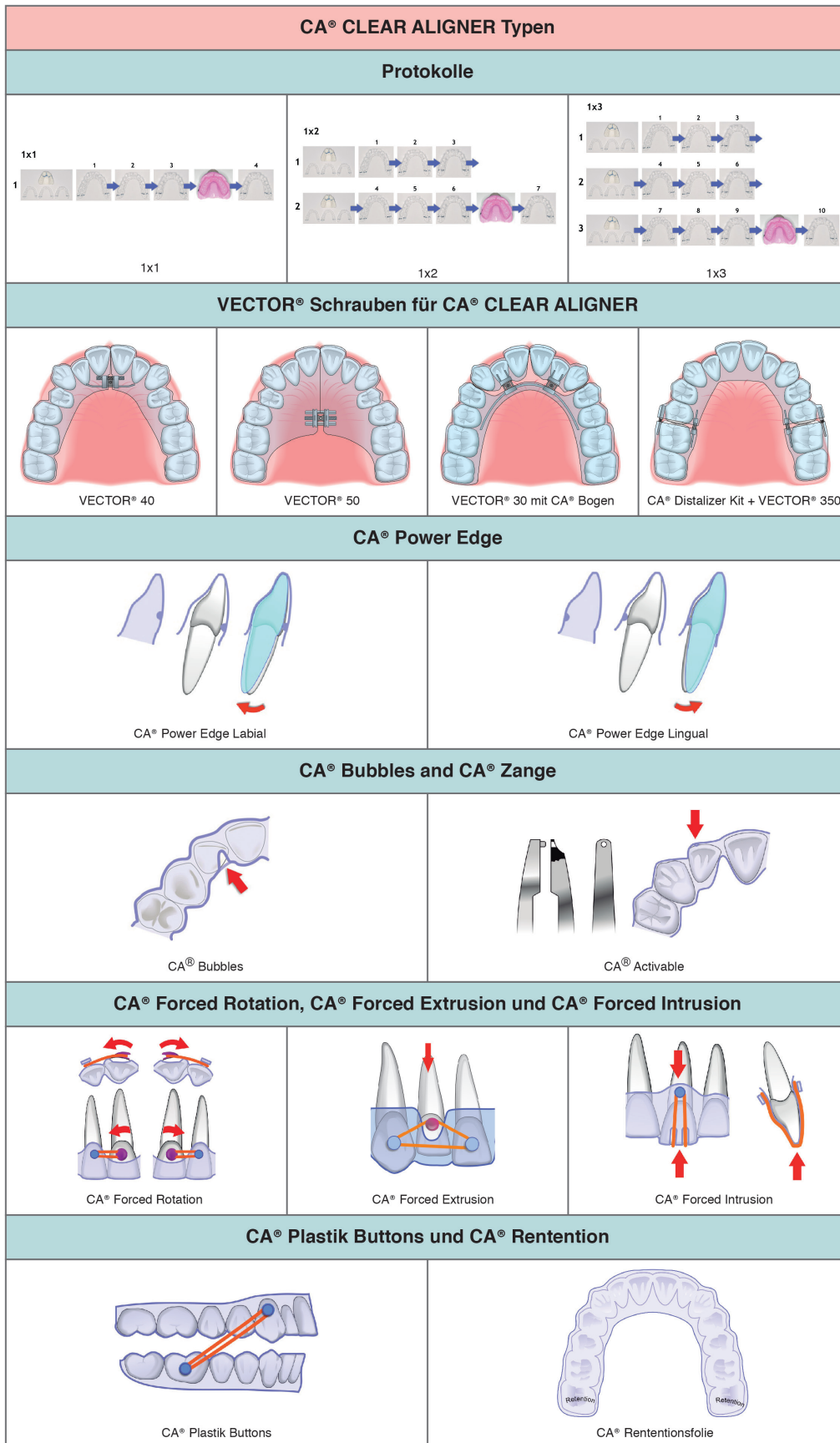


Fig. 18.