Syllabus on the Carriere Distalizer™ and its use

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ClassOne ORTHODONTICS

The Carrière Distalizer

Fig. 1 The Carrière Distalizer

CONCEPT: The Carrière Distalizer (Fig.1) is a qualitatively new design of a conceptual distalizing device that follows the dictates of the treatment project with a non invasive, fast and efficient manner (Fig.2).

Invented by Dr. Luis Carrière, it is based on the innovative biomechanical concept of a "loose but controlled" force application. It has evolved from a clinical experience of 30 years with his antecessor, the Modular Arch, described in the book "The Inverse Anchorage Technique in Fixed Orthodontic Treatment". Author, Dr. José Carrière and published by Quintessence Publishing Co. Chicago, Illinois, USA, 1991.

The main idea of the Carrière Distalizer is to provide a rotation movement of the maxillary first molars around their palatal root at the time that they receive a distalization impulse. The biomechanical approach is the result of a deep R+D program with the most advanced technologies in computerization.

Fig. 2 Carrière Distalizer in place before treatment of a Class II div. 2 non extraction.

Note that canine pad is bonded on the mesial third of the canine crown.

Class One Platform

Fig. 3 Class One Platform : It is considered to be a priority to accomplish in the timing of the Class II correction. In this status of occlusion, maxillary molars are properly rotated distally and the case exhibits a perfect neutrocclusion of canines.

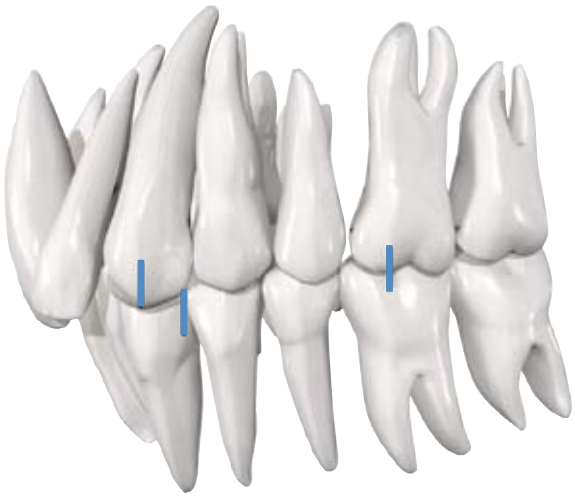

Fig. 4 In the present case maxillary molars have not been distally rotated, arch length is increased mesially to them and upper canines are not able to match in a proper Class I.

We define the Class One Platform as: the kind of occlusal relationship in which the patient, when making the occlusal contact, Centric Relation coincides with Centric Occlusion, and at the same time the posterior occlusal platform comprehended between the molars and the canines exhibits a perfect matching intercuspidation in Class I.

This is a clear principle to which we look forward when we want to correct a Class II non extraction case (Fig. 3). When we take the first glance to a malocclusion of this type, we make an abstractive effort to imagine the case corrected into a Class I, looking for a normal relationship with the rest of the stomatognathic system, neuromusculature and facial aesthetics included.

In this context we find of outmost importance to correct the posterior occlusion to an ideal Class One Platform. The key factor to accomplish this is the rotation and the distalization of the maxillary first molar.

The anatomy of this tooth has a rhomboidal geometry and when this is mesially rotated around the palatal root, it occupies an extra arch length. Literature refers that an 83% of malocclusions present a mesial rotation of the maxillary first molars, together with a mesial inclination. This is produced by a spontaneous movement of the maxillary first molars that are naturally displaced to the mesial lee way space left at the exfoliation of the maxillary second deciduous molars.

Every orthodontist has in his deepest mind the desire to correct his cases with a Class I occlusion between the maxillary and mandibular first molars. This implicit with the Angle classification of malocclusions which is referred to the first molars occlusion.

The reality is that a real Class I must have a perfect fit from molars to canines. When the maxillary molar is mesially rotated, it gives erroneous information, it presents the aspect of a molar Class I, while in reality it is a Class II, a kind of a hidden Class II. Molars are mesially rotated, in a false Class I, and canines fall in a cusp to cusp relationship, typical of Class II malocclusions. (Fig. 4).

The only possibility for a perfect intercuspidation in the canines area as well as in the molars, appears when the above mentioned rotation of the molars and their mesial inclination has been recovered and corrected. If this is the case, the distal cusp of the upper first molar will be able to match perfectly with the embrasure of the first and second mandibular molars, offering a valuable point of stability in preventing the relapse, especially in the crowding of lower incisors. (Fig. 5).

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The Class One Platform is of strategic importance in the simplification of the orthodontic treatment in cases that present a Class II. It is a reference position to be achieved as a priority at the first stage of a treatment.

Angle considered the molar relationship as the reference to define a Class I. We give the real importance, as a point of reference, to the lower canines. Opposite in the dental arch, upper canines have to occlude in a Class I. When this is the case, from this point backwards, the occlusion establishes itself automatically in a Class I in premolars as well as in molars, provided that the last are properly distally rotated. This will prevent the lower canines of being pushed forward, producing a crowding in the lower incisors with a result of a loss of stability in the finished case.

In Class II cases the only way to distalize the canines to a complete neutrocclusion, is through recovering the lost space hidden distal to them. When we work with the Distalizer, the very first sign of the good treatment progress, is the appearance of open spaces mesial to the upper canines. Wide diastemas also appear in the upper incisors (Fig. 6).

In the method that we propose we give priority to the molar distal rotation, which simplifies the distal movement of the whole posterior segments as a block. The main purpose of the Distalizer is to find a simple procedure to treat Class II cases to a Class One Platform as a first provision to be accomplished at the beginning of the treatment.
To consolidate the accomplished Class I and to prevent the tendency to relapse to the former distocclusion, it is of outmost importance to overpass the neutrocclusion of canines to a position which we might call a Super Class One.

It is advisable to continue the distalization process until the distal incline plane of the upper canine establishes a contact against the mesial incline plane of the lower first premolar. Once accomplished this position, it is necessary to place a figure eight metallic ligature in the base of the brackets. This runs under the archwire, from upper canines to first maxillary tubes, maintaining the maxillary group of teeth united as a block in a consolidated Class One Platform.

From this point on, every malocclusion is much easier to be treated and the case can be finished with any of the orthodontic techniques preferred by the operator.

Our proposal is to finish the treatment with the CARRIERE SLB and a protocol in which we incorporate the use of Thermo Active NiTi Wires. This combination constitutes the treatment method that we name ORTHODONTIC POSITIONING SYSTEM.

Fig. 5 Maxillary molars have been distalized and distally rotated, a necessary condition for the upper canines to occlude in a perfect Class I.

Fig. 6 After the Class One Platform has been achieved, spaces appear distal to the incisors and between them. This is a desirable condition that informs patient and operator of the good progress of the case..

Concept Enhancement

In searching for a conceptual approach to design a new appliance, we have been looking for a device with the following characteristics:

1. Avoid changes of wire.

2. Eliminate the global periodontal "State of War" that happens with the successive activation of wires.

3. Minimize the bone resorption surface present in the orthodontic displacement of teeth.

4. Passive appliance, exclusively activated by Class II elastics.

5. Express dental movement as a block from canines to molars.

6. Non invasive.

Working Hypothesis for a New Distalizer

The requirements pursued in the performance of the new appliance are:

1. Obtain a univectorial dental displacement.
2. Eliminate to zero the collateral distorting vectors of internal binding forces that appear in every successive wire activation in the traditional method and erase friction to a maximum.
3. Mild uniform impulse for orthodontic displacement.
4. Simple and minimalist design.
5. Self engineered appliance of universal use with any preferred technique.

These requirements drive our attention to a Natural Force since we want to work close to a Natural Function.

A Natural Function demands for a Natural Form. In Nature every element has an adequate design to its Function and the project has been conducted in this direction. (Fig. 8).

Fig. 8 A human like joint is the adequate design for functional adaptation to the biomechanics involved in the Distalizer.

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Morphology of the Distalizer

Nature has given us the path to follow in the design of a conceptually minimalist double articulated structure. It is constituted by two parts: The anterior pad is bonded on the canine and carries a hook for insertion of Class II elastic traction. It is continued distally by a half-round arm that runs in a posterior direction over passing the two upper premolars in a mild curve that ends in a sphere. This sphere or condyle articulates in a socket of the posterior part which is bonded on the molar. Both parts are articulated and work like the human joint of the hip.

The design has been made in 3-D Virtual Reality models. This technology has permitted to define several collision points that stop the movement in predefined directions in order to control undesired effects.

There was a previous process, in which was carried a study in real time with 3-D Virtual Reality models. From the resulting computer files, the definitive morphology reproduced with rapid prototyping system, was accepted to be tested clinically. Their fabrication has been made out of the computer files designed.

The material selected to fabricate the Carrière Distalizer accepted and tested for current clinical use, is Stainless Steel Nickel Free.

Statistical measurements have been taken, to study the different sizes of teeth and the device comes fabricated in three different sizes: 23mm, 25mm, and 27mm. Additional sizes for special cases are also available.

Biomechanics of the Distalizer

The Distalizer has to be attached to the upper cuspid and to the maxillary first molar. Both dental units have a different position in the dental arch that need an individual approach to their dental displacement inside the alveolar bone.

The maxillary canine requires a bodily movement along the corner of the alveolar ridge in a determined direction, with a control in the inclination of the longitudinal axis. The portion of the device attached to it has to be a kind of a fixed element that offers stability to the canine itself and at the same time it has to direct the movement in a longitudinal direction. This corresponds to the anterior part of the Distalizer.

The maxillary molar requires a double type of movement, a distal rotation around the palatal root and at the same time a controlled distal displacement, with the particularity to prevent the distal inclination of the crown of the molar. This corresponds to the posterior part of the Distalizer. The movement of the molar is independent and qualitatively different of the movement in the cuspid, both must be independent, as it is their functional environment, but at the same time they must be connected to express a simultaneous response, in a block.

The biomechanics of the new Distalizer calls for a two parts appliance united by a joint that allows the expression of two completely different kinds of movement.

At the same time, the appliance has to permit:

Biomechanics of the Distalizer

1. A "Free but limited" movement.

2. Correct the mesial inclination of the crown of maxillary first molars. For this purpose, the mesial arm of the Distalizer has a downward movement. At the moment of bonding the posterior part it has a vertical line engraved in the middle that has to be placed coincident with the longitudinal axis of the molar. (Fig. 8).

3. Prevent the distal inclination of the crown of the upper first molars, after they have been uprighted. (Fig. 9). Polar cuts in the ballhead limit this movement.

4. Correction of mesial rotation of upper molars. In cases of exaggerated mesial rotation, the lateral opening of the arm permits an easy placement.

5. Limit molar over-rotation in the distal movement, (toe in). Once accomplished the adequate rotation, the shoulder of the posterior base collisions with the arm of the device and stops the rotation. (Fig. 9).

6. Torque movement in molars along distalization is controlled by means of the polar cuts incorporated in the ballhead. (Fig. 8-9).

7. It is a self engineered appliance. It adjusts automatically its function as treatment is in progress.

8. Easy to be bonded in any position.

9.Inactive when not using Class II elastics.

10. Appliance of universal use with any of the orthodontic techniques.

When the Class One Platform is reached, it is disposed and the case can be finished with any of the orthodontic techniques preferred by the operator.

The force applied gives a single vector of force in the distal direction. The device alone is a completely passive appliance, but when it is activated by Class II elastics, it generates a combined movement of rotation around the palatal root of the maxillary first molar, together with a distalization. The biomechanical improvement lays in the "looseness" of the human like joint that connects the two parts which compose the Distalizer.

The "metal to metal" contact between both parts of the joint offers an almost frictionless mechanical behavior. This gives the maximum freedom of movements necessary to exhibit a clean and elegant histophysiological response to orthodontic displacement. At the same time the movement expression is limited by the stops designed in the morphology (Fig. 9) These characteristics convert the appliance in the ideal for receiving a natural response to dental movement, in our intention to simulate the spontaneous movement of dental eruption.

The result is the involvement of a minimum surface of resorption in the periodontal tissue and a clinical displacement as a block, with the lightest force and shortest time.

Fig. 9 Stops incorporated in the morphology of the joint of the Distalizer limit the maxillary molar to be distally inclined and over-rotated. We can describe this function as "self-engineered".

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Treatment Enhancement

Simplification of function has been the basic element pursued in the Distalizer, trying to find a new device to improve a clinical procedure.

1. It is used at the treatment start when compliance is best.

2. After reaching the Class One Platform in a few months, the case complication has to be simplified to let the clinician to finish the treatment with any orthodontic technique of his choice.

3. Does not need changes of wires.

4. It is not necessary to make regular activations, force is provided by elastics.

5. Non invasive and painless appliance with rounded edges designed for maximum patient comfort.

Indications

Class II Division 1 and Class II Division 2, non extraction cases, symmetrical and asymmetrical. Its use is being extended to many Class I and Pseudo Class I cases with a mesial position of maxillary molars. This is applied as a starter of the case and after achieving the Class One Platform, the treatment complication is simplified and the case has more possibilities to be treated in a more conservative approach.

Class II and Class I cases in which 4 extractions are deemed necessary, can be treated with a creative approach with the Distalizer. The number of extractions can be minimized and in plus, we can achieve a more aesthetic facial result.

It has also possibilities in the treatment of Class I cases with hypoplastic maxilla, to improve facial esthetics.

Class II in Mixed Dentition and Adult patients with maxillary dentoalveolar protrusion are good candidates for the use of the Distalizer.

We define it as a disposable “Treatment Booster”, or “Treatment Starter”.

Lingual Arch

It runs in contact to the lingual side of the mandibular dentition. When the case that we consider presents an ideal lower dental arch without crowding, the Lingual Arch describes exactly the anatomical contour following an ideal form of a mushroom. It must be completely passive and adapt to the inner contour of the mandibular dental arch. (Figs. 10 to 18)

Fig. 10 Elements used in making the lingual arch. They are made up of .036 lingual arch pliers, edgewise pliers and a wax marking pencil.

Fig. 11 Once the curve of the lower arch running from canine to canine above their cingulum in the space between the first premolars is shaped, a downward, inward bayonet bend is made to shape said teeth just below their maximum diameter.

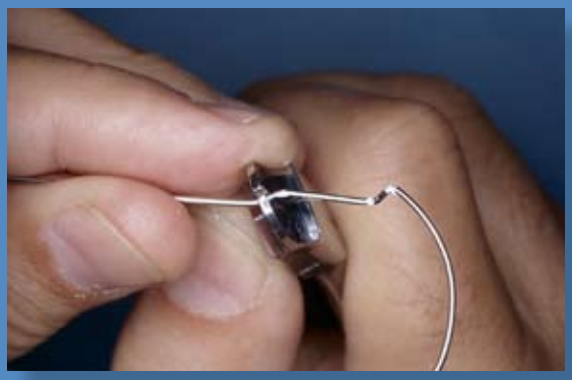

Fig. 12 Making the bayonet bend mesial to the first molars in order to compensate for the greater anatomical thickness of the crown of said teeth.

Fig. 13 With the pencil, the arch is marked in the distal end of the lingual tube shown in the model by a black box. The rest of the white wax pencil markings show points where a bend was made over the arch.

The distal ends are inserted in the lingual tubes of the lower molars, run in a mesial direction in contact with the middle third of the lingual side of the crown of the premolars, and extend to an upper level above the cingulum of the canines and incisors. Viewing the lingual side of the lower dental arch from an anatomical point of view, the lingual arch passively adapts to the ideal form of the dental arch on which it is shaped.

From the lingual halfway point of the band of the first molar, the arch runs along the middle third of the crown of the premolar. There is an outward bayonet bend in the mesial part of the first molar to compensate the lesser thickness of the crown of the second premolar. A second 45 degree bayonet bend is made upward and outward in the space between the first premolar and the canine so that it goes up toward the flat surface presented by the canine above its cingulum contouring the mesiolingual wall of the first premolar. It is again bent in a mesial direction making a forward angle and adjusted to the curved surface of the lingual wall of the canines and lower incisors at a higher level than the course of the arch in posterior areas.

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Fig. 14 Recurving and compression of the distal bend of the lingual arch that is inserted into the lingual tubes..

Fig. 15 Pressure with the most extreme point of the lingual arch pliers. There are two channels at the end that fit over the recurved part and the arch is again bent over itself to make the second bend.

Fig. 16 Compressing the end to retain the lingual arch.

Fig. 17 Aspect of the distal end of the lingual arch that is inserted into the lingual tube of the molar.

Fig. 18 Occlusal view of an ideal lingual arch shaped and passively placed over a normal dental arch.

The lingual arch holds the Class II traction of elastics. When second lower molars are fully erupted, it is advisable to band them, to take advantage of getting more force from elastics, a more horizontal direction of elastic traction and better resistance of the lower arch in terms of anchorage. The Lingual Arch must be completely passive in order to leave undisturbed the mandibular dental arch. The clinician must take a constant control that the lingual arch does not create a protrusion of the lower anterior teeth. It must fit exactly to the length of the dental arch, otherwise spaces will appear in lower incisors which indicate loss of anchorage. Rotations and changes of torque in the molars must also be controlled at every appointment.

The Lingual Arch is made of .036 wire. Among the advantages it has, we should point out: patient convenience in the fact that, it is invisible, takes up little space, remains fixed in the mouth, needs no care on the part of the user and it is hygienic.

Lower Essix

The Essix appliance is a very good source of anchorage to be used as a point of support for insertion of Class II elastics. A .04" layer of Essix material type "A" is the ideal for making it.

Bondable Molar Tubes with hooks are bonded on the buccal face of the lower 1st or 2nd molar, a window is cut with the scissors on the Essix Appliance in the area were buccal tubes are placed, occlusal and lingual sides are not removed at this level to give more retention to elastic traction and maintain the appliance retained in place.

Full Bonding of Mandibular Arch

In cases that present a marked Curve of Spee or a mild crowding in the mandibular arch, which are accepted by diagnosis as non extraction cases, it is advisable to bond brackets on the lower dental arch to support the Class II elastic traction.

After having revised the different methods to maintain the anchorage for Class II elastics, we need to remember that the method of anchorage to be selected in the mandible, it has to be the choice and it is in the hands of the operator.

This has to be a clinical decision for every particular case in terms of maintaining the anterior limit of lower incisors not to be moved forward because of anchorage loss. It does not have anything to do with the efficiency of the Distalizer.

Non Compliance Anchorage, TAD, Mini Screw

They are placed in the space between first and second maxillary molars.

The ideal placement is following the direction of the axis of the 1st and 2nd molars, in the mid to apical height of the buccal side bone. This placement will prevent the contact of the molar roots against the screw along the distalization. NiTi Coil Springs or permanent elastics are used for a Non Compliance Distalization.

A variety of mini-implants and mini plates has been described for non compliance patients, placed in the Zygomatic bone, away from the area of the roots of maxillary molars.
They can be of the type of a mini screw or a mini plate with a hook to receive the insertion of a coil spring, for a non compliance distalization. (i.e. Infinitas, ST-Bone Anchorage Surgitec).

TAD, Mini Screws in the Mandible

They have to be placed in the buccal area between first and second lower molars, in the zone of more density of cortical bone. Micro implants present a head in which there is a hole for ligatures and a hook or a mushroom to retain the Class II elastics.

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Bonding of the Distalizer

Before proceeding to bond the Distalizer, the measure of the size needed must be taken.

Measurement is made with a pair of callipers or with the disposable "Distometer" provided.

The measurement is made from the geometric midpoint of the buccal face of the first maxillary molar, to the midpoint of the maxillary canine crown. (Fig. 19)

In cases with an inaccessible high cuspid and second maxillary molars present in the mouth, the Distalizer can be bonded on the first premolar. The measurement can be taken from the midpoint of the crown of the second molar to the midpoint of the first premolar instead of the canine. This is an alternative to distalize this segment and provide space for the blocked out upper cuspid.

Fig. 19 Measurement of the size of the Distalizer with a disposable "Distometer".

Special sizes of the distalizer are available to be bonded from the first molar to the first premolar, (20mm, 19mm, 18mm, and 17mm).

Once selected the appropriate size of Distalizer, the bonding procedure starts in the posterior part. The sequence to follow after etching and sealant application is to place bonding material on the two bonding pads of the Device. The molar part is positioned in the geometrical centre of the buccal side of the molar with a thumb pressure. In this position, it is light cured. The canine pad already filled with composite allows time enough to the operator to position it correctly. After which it is light cured in a fast and very easy second operation. When bonding on the canine, we have to make emphasis in the convenience of bonding the anterior pad slightly advanced, on the mesial third of the vestibular surface of the crown of the canine, and not in the midline of the crown.

Class II Elastics

Strength:

6 ½ ounces, 1/4 th. of an inch heavy, or

8 ounces, 3/16 ths. of an inch, heavy.

Wearing time:

a) Low angle cases with good perioral muscular strength. Full time, 24 hours, except during eating time.

b) High angle cases with lighter perioral musculature. Night time, if possible including day time, a total of 14 hours.

Daytime activities as eating should be avoided, due to the vertical component of the traction vector of Class II elastics, when the mouth is opened to eat. Night time use, offers a more horizontal vector of traction.

Patient Cooperation

Patient acceptance and cooperation has been a rewarding experience. Comfort of the appliance and the simplicity as well as the fact that upper incisors are left without any appliance in the maxilla make their use less evident. In the mandible we place a lower lingual arch or an Essix, which are invisible and improve acceptance of patients. The Distalizer is used in the first 3 to 6 months of treatment when compliance is best. The novelty of the design plus the excellent comfort of use, make it easy to receive good cooperation. The patient is stimulated by the immediate results of seeing the appearance of diastemas in upper incisors, as the best reward for the good cooperation and favorable progress of distalization. In plus it is a good deal for the patient to cooperate with the benefit of avoiding the extraction of two upper premolars. Shortening of the treatment time by a 30% to a 35% less, is also an added value to ensure a good cooperation.

Clinical Application

When the diagnostic procedure followed indicates that a case is a candidate for a maxillary distalization, a set of Distalizers are bonded on maxillary molars and canines, a lingual arch is placed. If another alternative is preferred it can be used a lower Essix which can be followed by a full bracketed lower dental arch, or with a mini implant. Essentially speaking, the only requirement to activate a Distalizer is a hook in the lower molar region to receive the insertion of Class II elastics, whatever decision is taken in relation to the lower appliance to hold them.

Cases shown in this syllabus are distalized with the Distalizer, until they reach the stage of the Class One Platform. From here on, after the main complication of the cases is solved, all of them can be finished with any of the orthodontic techniques preferred by the orthodontist. Cases presented here have been finished with the ORTHODONTIC POSITIONING SYSTEM (OPS) and CARRIERE SLB.

For this reason in this Syllabus we enclose general information about the new development on Passive Self Ligating brackets to be used with low force Super Elastic wires.

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CARRIERE SLB, (Fig. 20) follows as the second part of the treatment after the CARRIERE DISTALIZER has accomplished the Class One Platform position, although they can be of universal use with any of the orthodontic techniques with a passive self ligation system.

Fig. 20 CARRIERE SLB. Morphology in different perspectives.

Treatments with traditional edgewise brackets, after being tied conventionally to an archwire, produced a binding effect which induced a "global state of war" in the entire periodontal ligament.

This generated a slow and painful response to the orthodontic movement.

The most interesting feature of the new brackets is that the force applied for the adequate treatment is not interfered by competing vectors of these internal forces. The result is that the surface of periodontal structures histologically activated by the orthodontic force is minimized. As a consequence, the force magnitude delivery can be diminished. This is accomplished with the action of super elastic Wires which run freely inside the SLB and provide a continuous force of low magnitude. The result is a faster response in the expression of orthodontic movement.

Brackets slide easily on the arch. Teeth are free to express their movement under the light force produced by the new technology Super Elastic Wires sliding inside them and the free contact points with the neighboring teeth.

Orthodontic movement is expressed freely but at the same time it is controlled in the desired direction by the easy sliding wire bracket interface and the progression of wires.

In the first stages Round Super Elastic Wires provide the initial levelling movements with minimal periodontal reaction.

Carrière SLB

The sequence of arches that follow are of the Edgewise Type and Super Elastic, in a progression. The strategic contact points between the edge of the wire and the "tube" effect of the passive SLB control the situation in the 3-D space. Sliding is also increased by the polished rounded chamfers in the mesial and distal borders of the SLB slot. The "looseness" of the general set up is which promotes this kind of response with the complementary help of the neuromuscular strain in the vestibule of the mouth.

The CARRIERE SLB is composed of two parts: the base and the sliding wall. They match perfectly in an unprecedented design of form and function.

The curved trajectory of the closing slide and the smooth rounded edges make it the most comfortable and smallest. It opens with an explorer and closes with the simple pressure of a finger. The conception of the idea from the very onset has been; "beautiful outside and useful inside". In plus it is nickel free for the safety of the patient.

A sophisticated design retains the closure of the locking mechanism with an unprecedented precision and easiness.

The direction of opening for the slide is towards the occlusal side in both arches. The first advantage of this peculiarity is that force mastication consolidates the closure of the slide. The second, is an advantage that permits cementation of brackets in highly crowded teeth since opening the slide towards the occlusal direction does not interfere in cases with highly crowded groups of teeth.

Improvements for the patient are:

1. Increased comfort.
2. Less complication in wire changes.
3. Diminished number of wire changes.
4. Faster change of wires.
5. Shorter treatment time and longer interval for visits.
6. Reduction in number of extractions.
7. Faster alignment.
8. Easier cleaning with mechanism in bracket face.
9. Periodontal preservation with low force wires and sliding mechanics.
10. Adults and children largely benefit from friction free and low force application.

The CARRIERE SLB is a minimalist bracket in which converge: elegance, technology and precision.

It is the most recent, advanced, and simplified of the Self Ligating Brackets appeared in the world of orthodontic appliances.

It can be of universal application to all the variability of fixed orthodontic techniques which use rectangular wires.

Treatment forces can be reduced, as well as treatment time which can be reduced up to a 35% to a 45%. It delivers a biologic-friendly action on the periodontal tissues.

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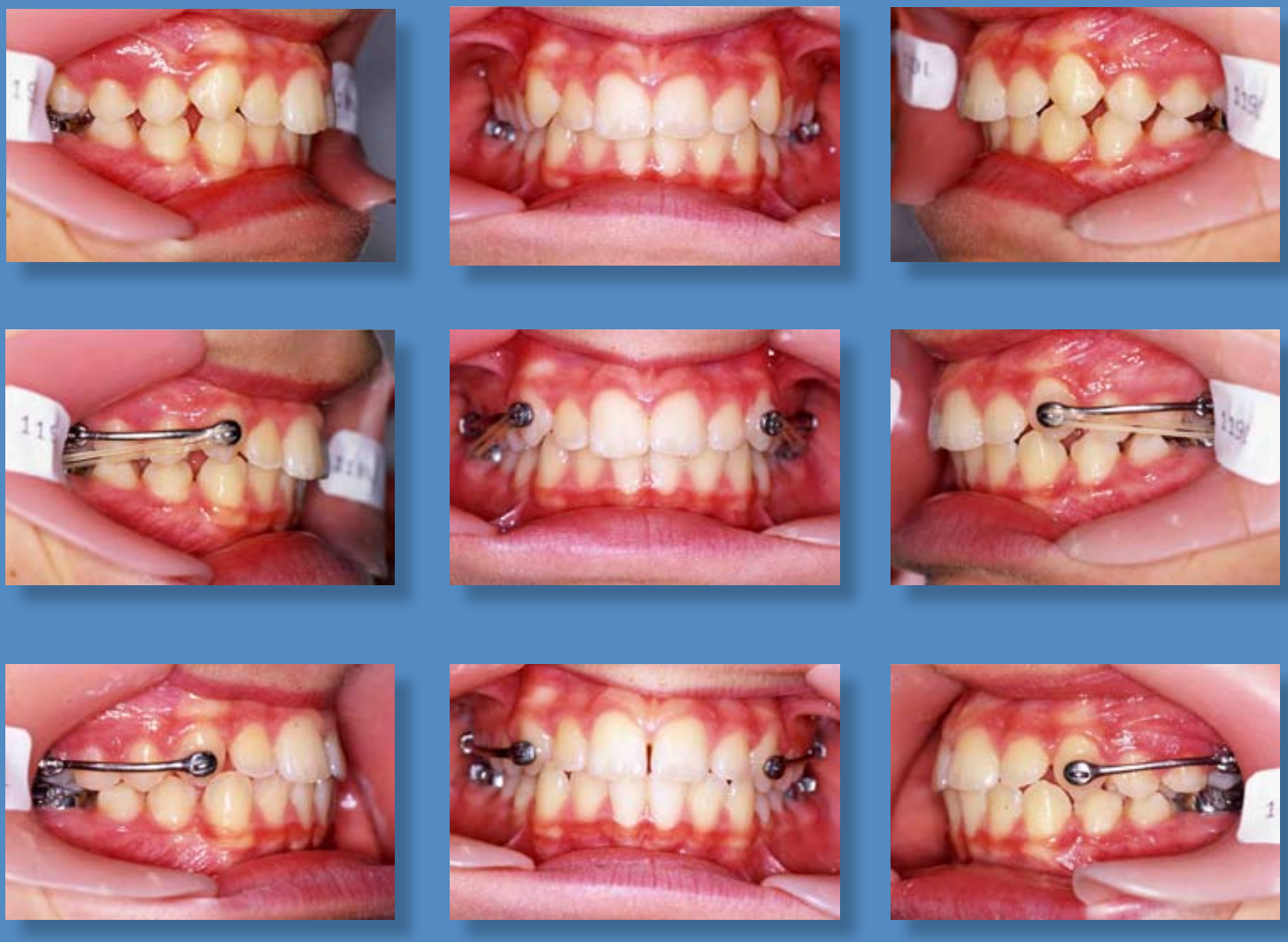
Clinical Cases

We present a group of three cases in treatment progress with the use of the Carrière Distalizer until they reach the stage of Class One Platform. From this point on, cases can be finished with any of the current orthodontic techniques of preference selected by the clinician.

Carrière Distalizer Case #1



Carrière Distalizer Case #1

Before

After 3 Months

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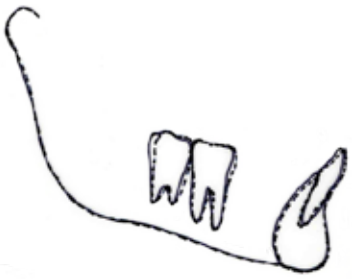
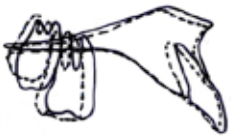
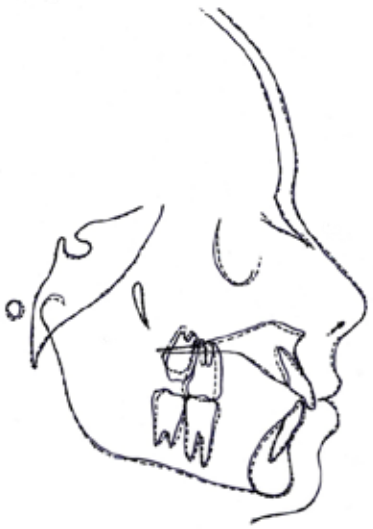
Before

After 3 Months

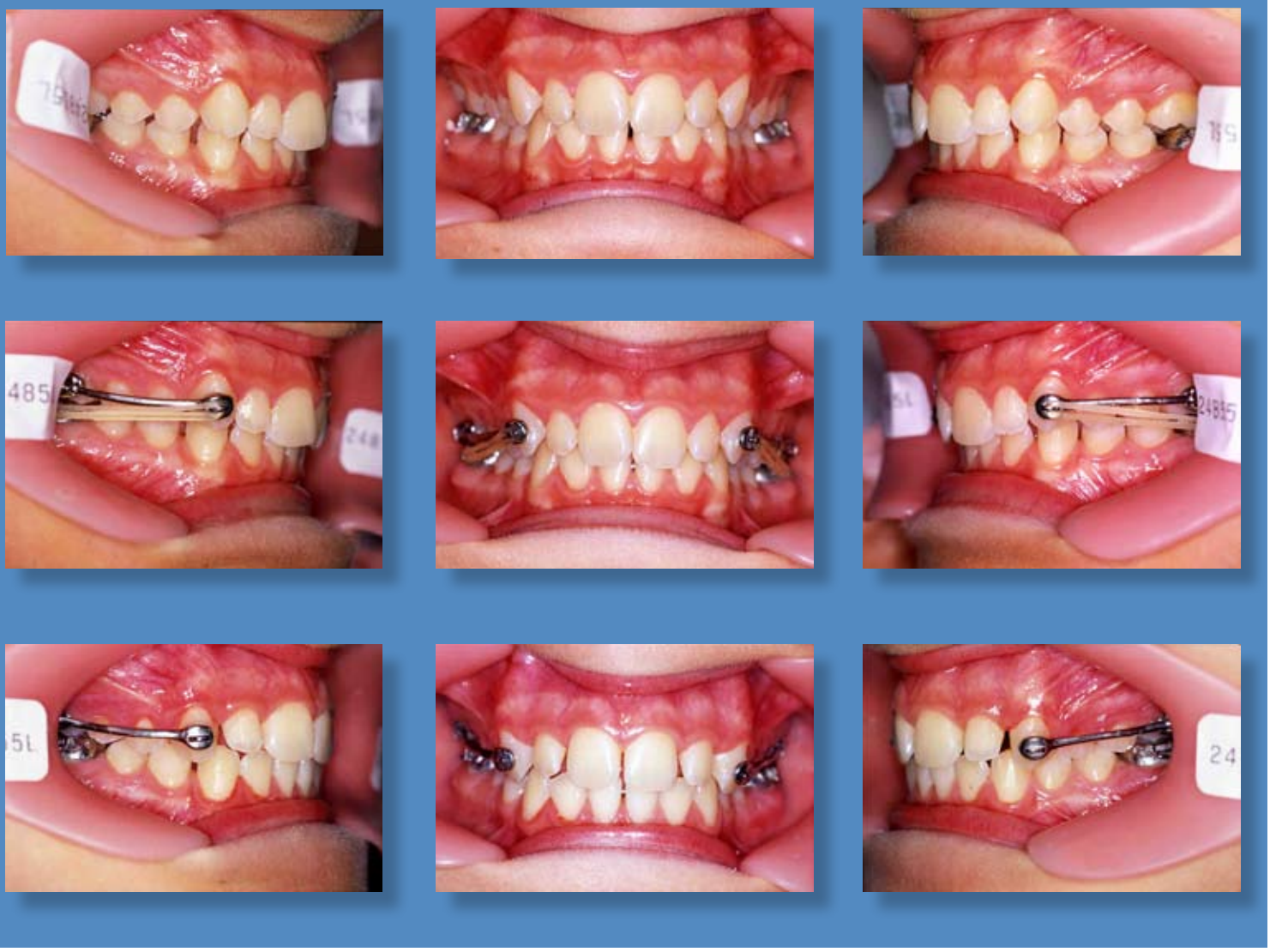






	Pretreatment	Post. Distalization
S-N-A	83.5	82
S-N-Pg	79	78.5
A-N-Pg	45	3.5
S-N/ANS-PNS	7.5	8
ANS-PNS/Go-Gn	21.5	21
ANS-PNS/Go-Gn	21.5	21
1-Fo-G	102	104
1-N-B	7	8

Carrière Distalizer Case #2



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International | 806.797.1199 | fax 806.797.4604

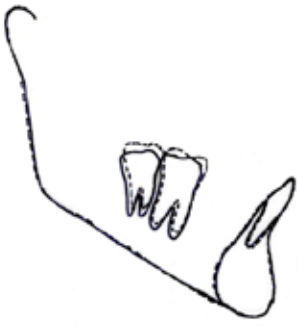
Before

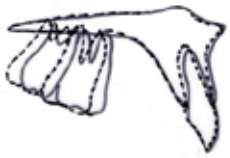
After 4 Months

Carrière Distalizer Case #2

Before

After 4 Months





	Pretreatment	Post. Distalization
S-N-A	84	83
S-N-Pg	80	79
A-N-Pg	4	4
S-N/ANS-PNS	4	4
ANS-PNS/Go-Gn	34	35
ANS-PNS/Go-Gn	30	31
1-Fo-G	95	95
1-N-B	6	6

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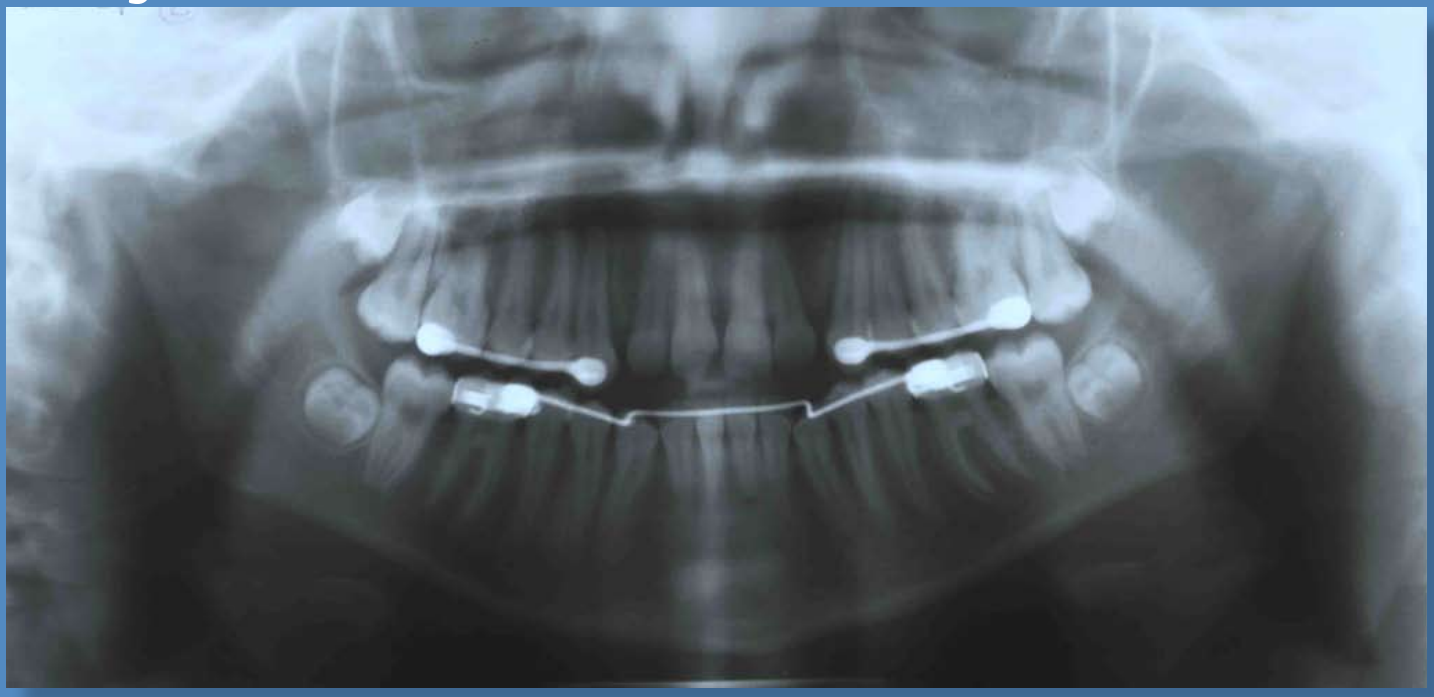
Carrière Distalizer Case #3

Carrière Distalizer Case #3

Before

After 3 Months



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Before

After 4 Months

	Pretreatment	Post. Distalization
S-N-A	79.5	79
S-N-Pg	70.5	71.5
A-N-Pg	9	7.5
S-N/ANS-PNS	9	9
ANS-PNS/Go-Gn	45.5	46.5
ANS-PNS/Go-Gn	36.5	37.5
1-Fo-G	90	91.5
1-N-B	9	10

Carriere Distalizer™

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