CLINICAL PAPER

CLEAR ALIGNER

CLEAR ALIGNER

21

LADENT

Dr. Pablo Echarri

SCHEU Dental Technology

Los casos expuestos han sido realizados por el Dr. Pablo Echarri. El trabajo de laboratorio ha sido realizado por el laboratorio Ladent, y se han utilizado los materiales del Scheu Dental Technology.

All cases were carried out by Dr. Pablo Echarri. All the laboratory work was carried out by Ladent laboratory, and the Scheu Dental Technology materials were used.

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CA Clear Aligner y Técnica de Stripping Progresivo

CA Clear Aligner and Progressive Stripping Technique

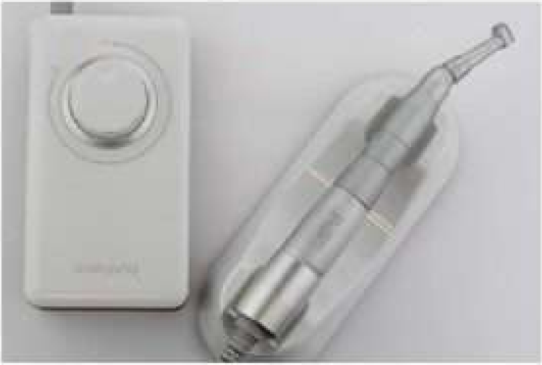


Figura 1. El equipo para stripping está formado por el motor portátil SMT MARATHON K-33 y el contra-ángulo NAKAMURA DENTAL MfG. Co, Ltd.

Figure 1. The stripping equipment consists of a portable motor SMT MARATHON K-33 and a contra angle NAKAMURA DENTAL MfG. Co, Ltd.

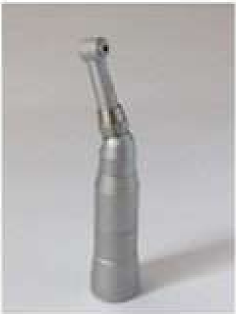


Figura 2. El contra-ángulo reduce la velocidad y convierte el movimiento rotatorio en un movimiento oscilante.

Figure 2. The contra angle reduces the speed and converts the rotatory movement to an oscilatory movement.

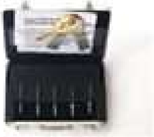


Figura 3. El Echarri PST Set contiene todas las limas utilizadas en la Técnica de Stripping Progresivo.

Figure 3. The Echarri PST Set consists of all the files used in The Progressive Stripping Technique.

Figura 4. Estuche del Echarri PST Set.

Figure 4. The Echarri PST Set box.

Figura 5. El Echarri PST Set consta de instrumento medidor de stripping y 5 limas.

Figure 5. The Echarri PST Set consists of the stripping measuring gauge set and 5 files.

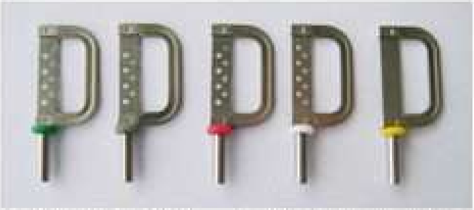


Figura 6. Las limas del Echarri PST Set son:

A. La lima verde de 90 µm
B. La lima gris de 60 µm perforada
C. La lima roja de 40 µm perforada
D. La lima blanca de 25 µm perforada
E. La lima amarilla de 15 µm lisa

Las limas del set son abrasivas por los dos lados, pero también hay disponibles abrasivas de un solo lado.

Figure 6. The files of Echarri PST Set are:

A. Green file of 90 µm
B. Grey perforated file of 60 µm
C. Red perforated file of 40 µm
D. White perforated file of 25 µm
E. Yellow smooth file of 15 µm

All the files of the set are abrasive on both sides, but one-side abrasive files are also available.

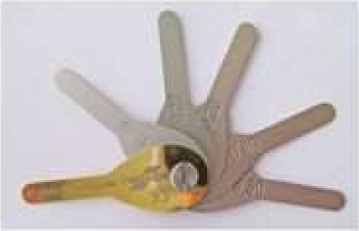


Figura 7. El medidor de stripping consta de 5 láminas de 0,10 mm, 0,20 mm, 0,30 mm, 0,40 mm y 0,50 mm que se interponen en el espacio interdental para medir la separación entre los dientes antes y después de hacer el stripping. Combinando láminas se pueden medir separaciones entre 0,10 mm y 1,5 mm.

Figure 7. The measuring gauge set consists of 5 gauges with different thicknesses (0.10 mm, 0.20 mm, 0.30 mm, 0.40 mm, and 0.50 mm), which can be introduced in the interdental space to measure the separation between the teeth before and after the stripping. Combining the gauges, the separations between 0.10 mm and 1.5 mm can be measured.

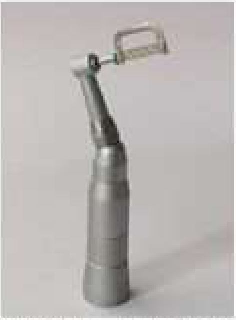


Figura 8. Contra-ángulo con la lima insertada.

Figure 8. Contra angle with the inserted file.

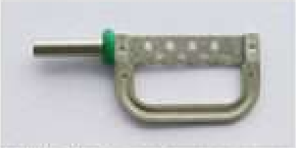


Figura 9. La lima verde de de 90 µm solo se usa con coronas u obturaciones.

Figure 9. The green file of 90 µm is used only with crowns and fillings.

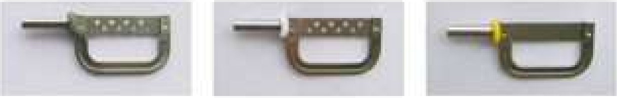


Figura 10. Los incisivos centrales superiores, los caninos superiores e inferiores, y los premolares y molares superiores e inferiores se pueden desgastar 0,5 mm por cara mesial o distal.

Para conseguir este desgaste y obtener una superficie pulida, se deben utilizar:

A. La lima gris de 60 µm durante 60 segundos
B. La lima blanca de 25 µm durante 30 segundos
C. La lima amarilla de 15 µm durante 30 segundos

Figure 10. Upper central incisors, upper and lower canines, and upper and lower bicuspids and molars, can be trimmed 0.5 mm on mesial and on distal surface.

To achieve this interdental reduction, and obtain a polished surface, you should use:

A. Grey file of 60 µm during 60 seconds
B. White file of 25 µm during 30 seconds
C. Yellow file of 15 µm during 30 seconds

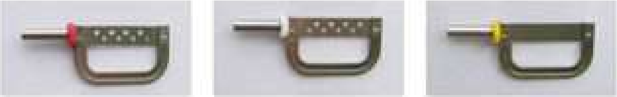


Figura 11. Los incisivos laterales superiores y los cuatro incisivos inferiores se pueden desgastar 0,3 mm por cara mesial o distal.

Para conseguir este desgaste y obtener una superficie lisa y pulida, se deben utilizar:

Figure 11. Upper lateral incisors and all four lower incisors can be trimmed 0.3 mm on mesial and on distal surface.

To achieve this interdental reduction, and obtain a polished surface, you should use:

A. La lima roja de 40 µm durante 30 segundos
B. La lima blanca de 25 µm durante 30 segundos
C. La lima amarilla de 15 µm durante 30 segundos

A. Red file of 40 µm during 30 seconds
B. White file of 25 µm during 30 seconds
C. Yellow file of 15 µm during 30 seconds

La Técnica de Stripping Progresivo se hace:
Manteniendo fijo el contra-ángulo y permitiendo que el stripping lo realice la lima en su movimiento oscilatorio.
Realizar el desgaste bajo irrigación de agua.
Irrigar entre lima y lima.

Figura 12.

La The Progressive Stripping Technique is carried out:
Maintain the contra angle steady and allow that the file itself carries out the stripping with its oscilatory movement.
Carry out the trimming under the constant irrigation.
Irrigate between the file and file.

Figure 12.

La PST se realiza:
Sin anestesia.
Con previa separación.
Comprobando con el explorador y seda dental que la superficie abrasionada quede lisa.
Aplicando fluor a la zona abrasionada durante el stripping.
Duraphat (Colgate)

Figura 13.

The PST is carried out:
Without anaesthesia.
With previous separation.
Checking with the explorer and dental floss that the trimmed surface is smooth.
Applying fluor to the zone abraded during stripping.
Duraphat (Colgate)

Figure 13.

Figura 14. Los estudios que fundamentan a la técnica Echarri, están publicados en:

Figure 14. The studies which are the base of the Echarri technique, are published in:

1. **Echarri P. Progressive Slenderizing Technique. In: Melsen B, editor. Adult Orthodotnics. Oxford (United Kingdom):Blackwell Publishing; 2012.**

2. **Echarri P. Clear Aligner. 1ª Edición. Madrid (Spain): Ripano Médica; 2012.**

Caso clínico 01623

Case report 01623

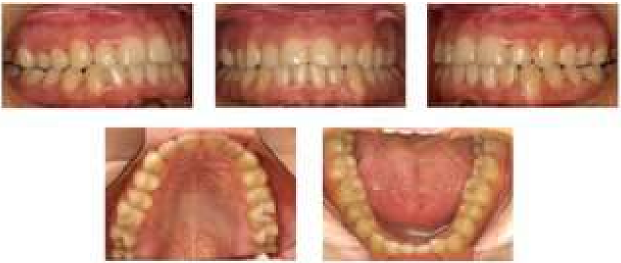


Figura 15. Recidiva de caso tratado con ortodoncia fija.

Rotación mesial del incisivo lateral superior izquierdo.

Rotación mesial del incisivo lateral inferior izquierdo.

Figure 15. Relapse of the case treated with fixed orthodontics.

Mesial rotation of upper left lateral incisor.

Mesial rotation of lower left lateral incisor.

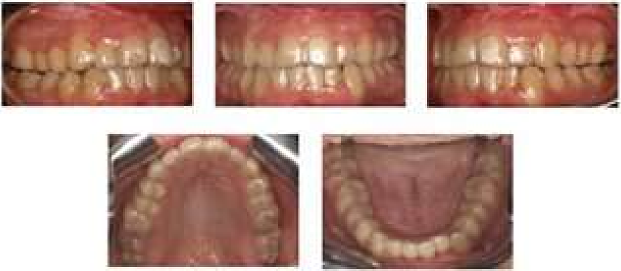


Figura 16. CA Clear Aligner para expansión y conseguir espacio para stripping a mesial y distal de 22 y 32.

Figure 16. CA Clear Aligner for expansion to achieve the space for stripping to mesial and distal of 22 and 32.

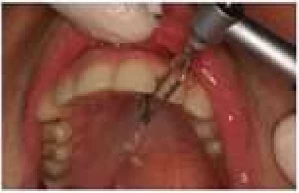


Figura 17. Stripping distal del 21 durante 60 segundos con lima gris de 60 µm.

Figure 17. Distal stripping of 21 during 60 seconds with grey file of 60 µm.

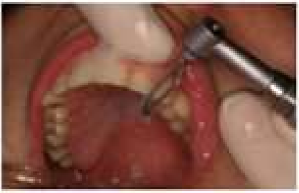


Figura 18. Stripping mesial del 23 durante 60 segundos con lima gris de 60 µm.

Figure 18. Mesial stripping of 23 during 60 seconds with grey file of 60 µm.

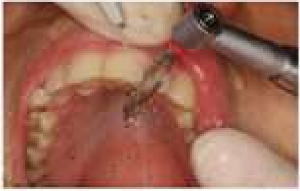


Figura 19. Stripping mesial del 22 durante 30 segundos con lima roja de 40 µm.

Figure 19. Mesial stripping of 22 during 30 seconds with red file of 40 µm.

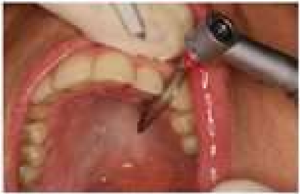


Figura 20. Stripping distal del 22 durante 30 segundos con lima roja de 40 µm.

Figure 20. Distal stripping of 22 during 30 seconds with red file of 40 µm.

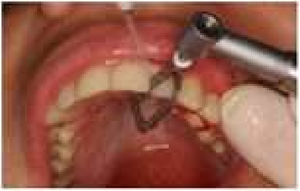


Figura 21. Stripping distal del 21 y mesial del 22 durante 30 segundos con lima blanca de 25 µm.

Figure 21. Distal stripping of 21 and mesial stripping of 22 during 30 seconds with white file of 25 µm.

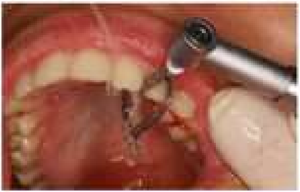


Figura 21. Stripping distal del 22 y mesial del 23 durante 30 segundos con lima blanca de 25 µm.

Figure 21. Distal stripping of 22 and mesial stripping of 23 during 30 seconds with white file of 25 µm.

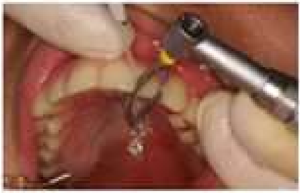


Figura 23. Stripping distal del 21 y mesial del 22 durante 30 segundos con lima amarilla de 15 µm.

Figure 23. Distal stripping of 21 and mesial stripping of 22 during 30 seconds with yellow file of 15 µm.

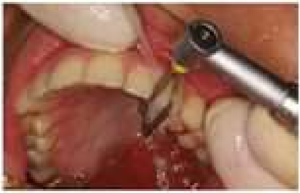


Figura 24. Stripping distal del 22 y mesial del 23 durante 30 segundos con lima amarilla de 15 µm.

Figure 24. Distal stripping of 22 and mesial stripping of 23 during 30 seconds with yellow file of 15 µm.

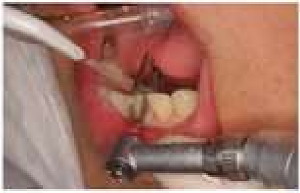


Figura 25. Stripping distal del 31 y mesial del 32 durante 30 segundos con lima roja de 40 µm.

Figure 25. Distal stripping of 31 and mesial stripping of 32 during 30 seconds with red file of 40 µm.

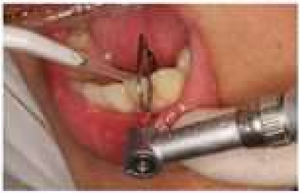


Figura 26. Stripping distal del 32 durante 30 segundos con lima roja de 40 µm.

Figure 26. Distal stripping of 32 during 30 seconds with red file of 40 µm.

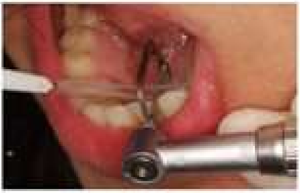


Figura 27. Stripping mesial del 33 durante 60 segundos con lima gris de 60 µm.

Figure 27. Mesial stripping of 33 during 60 seconds with grey file of 60 µm.

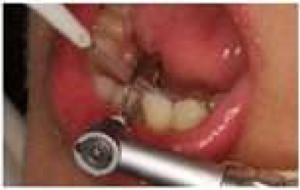


Figura 28. Stripping distal del 31 y mesial del 32 durante 30 segundos con lima blanca de 25 µm.

Figure 28. Distal stripping of 31 and mesial stripping of 32 during 30 seconds with white file of 25 µm.

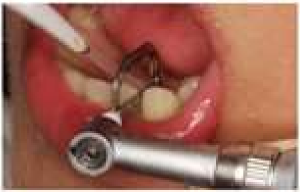


Figura 29. Stripping distal del 32 y mesial del 33 durante 30 segundos con lima blanca de 25 µm.

Figure 29. Distal stripping of 32 and mesial stripping of 33 during 30 seconds with white file of 25 µm.

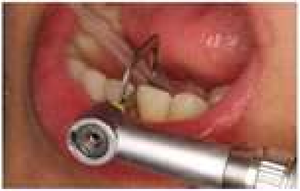


Figura 30. Stripping distal del 31 y mesial del 32 durante 30 segundos con lima amarilla de 15 µm.

Figure 30. Distal stripping of 31 and mesial stripping of 32 during 30 seconds with yellow file of 15 µm.

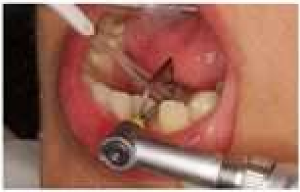


Figura 31. Stripping distal del 32 y mesial del 33 durante 30 segundos con lima amarilla de 15 µm.

Figure 31. Distal stripping of 32 and mesial stripping of 33 during 30 seconds with yellow file of 15 µm.

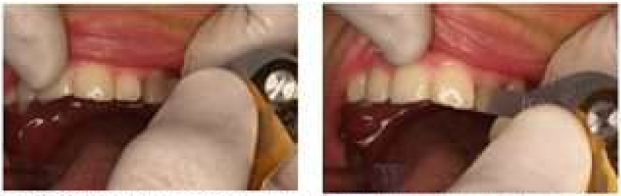


Figura 32. Medición del stripping en la arcada superior.

Figure 32. Measuring the stripping in the maxilla.

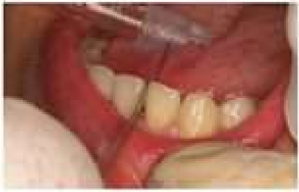


Figura 33. Medición del stripping en la arcada inferior.

Figure 33. Measuring the stripping in the mandible.

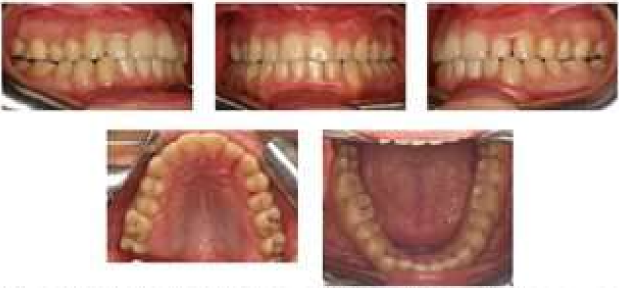


Figura 34. Después de realizar el stripping, se toman las impresiones para realizar el siguiente paso del CA Clear Aligner y el paciente continúa usando el CA Clear Aligner previo. El modelo es igual al stripping realizado en boca.

Figure 34. After the stripping, the impressions are taken to carry out the following step of CA Clear Aligner and the patient continues using the previous CA Clear Aligner. The model is the same as the stripping carried out in the mouth.

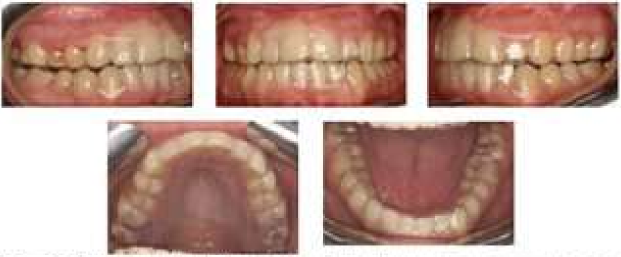


Figura 35. Paso siguiente del CA Clear Aligner para alinear 22 y 32.

Figure 35. Next CA Clear Aligner step to align 22 and 32.

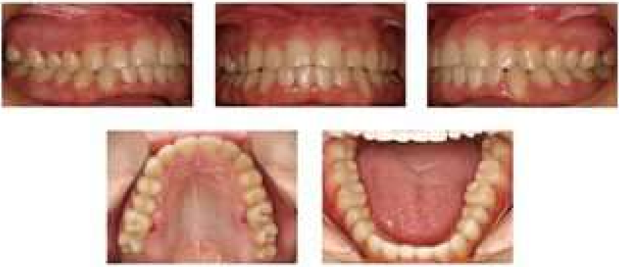
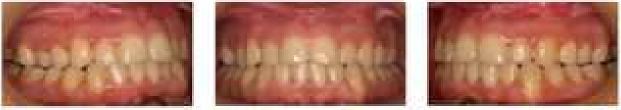


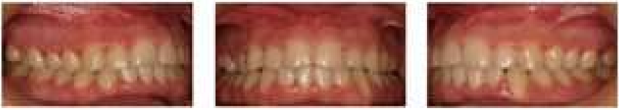
Figura 36. Caso terminado, ajuste oclusal con desgaste selectivo.

Figure 36. Finished case, occlusal adjusting with selective trimming.

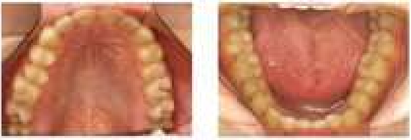
ANTES/BEFORE



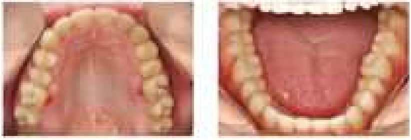
DESPUÉS/AFTER



ANTES/BEFORE



DESPUÉS/AFTER



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Alle hier dargestellten Fälle wurden von Dr. Pablo Echarri ausgeführt. Die gesamten Laborarbeiten wurden durch das Labor Ladent unter Verwendung von SCHEU-DENTAL Technology Materialien durchgeführt.

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CA® CLEAR ALIGNER und Progressive Stripping Technik

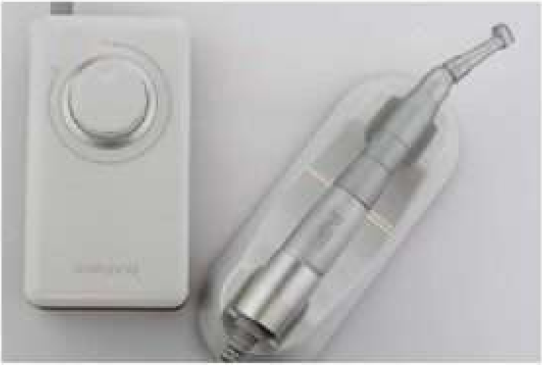


Abbildung 1. Zum Strippen werden ein Handstück Typ SMT MARATHON K-33 und ein abgewinkeltes EVA- Winkelstück Typ NAKAMURA DENTAL MfG Co. Ltd. verwendet.

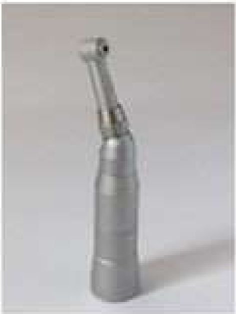


Abbildung 2. Mithilfe des abgewinkelten EVA-Winkelstücks wird die Geschwindigkeit reduziert und die rotierende Bewegung in eine oszillierende Bewegung umgewandelt.

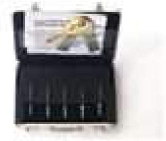


Abbildung 3. Das Echarri PST Set enthält alle Instrumente, die in der Progressiven Stripping Technik zum Einsatz kommen.

Abbildung 4. Die Echarri PST-Box.

Abbildung 5. Das Echarri PST Set besteht aus der CA® Messlehre und 5 Instrumenten.

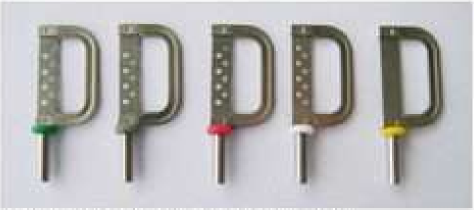


Abbildung 6. Die einzelnen CA® Stripping Tools des Echarri PST Sets:

A. Grünes CA® Stripping Tool 90 µm, gelocht.
B. Graues CA® Stripping Tool 60 µm, gelocht.
C. Rotes CA® Stripping Tool 40 µm, gelocht.
D. Weißes CA® Stripping Tool 25 µm, gelocht.
E. Gelbes CA® Stripping Tool 15 µm, ungelocht zur Politur.

Alle CA® Stripping Tools im PST-Set sind beidseitig diamantiert, einseitig diamantierte CA® Stripping Tools sind ebenfalls erhältlich.

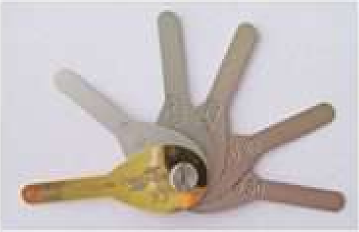


Abbildung 7. Das CA® Messlehren-Set besteht aus 5 Messlehren verschiedener Stärken (0,10 mm, 0,20 mm, 0,30 mm, 0,40 mm und 0,5 mm), die in die Interdentalräume eingebracht werden können, um den Schmelzabtrag zwischen den Zähnen vor und nach dem Strippen zu messen. Durch Kombinierung der Messlehren kann ein Abtrag zwischen 0,10 mm und 1,5 mm erfasst werden.

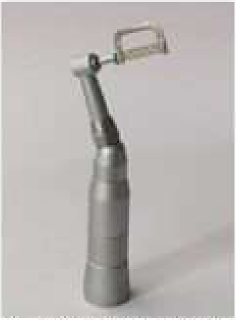


Abbildung 8. Abgewinkeltes EVA-Winkelstück mit eingesetztem CA® Stripping Tool.

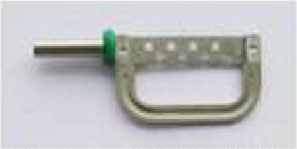


Abbildung 9. Das grüne CA® Stripping Tool (90 µm) kommt nur bei Kronen und Füllungen zum Einsatz.

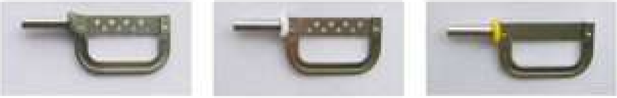


Abbildung 10. Die oberen zentralen Schneidezähne, obere und untere Eckzähne, obere und untere Prämolaren und Molaren können mesial und distal 0,5 mm reduziert werden.

Die folgenden Instrumente stehen zur interdentalen Reduktion und für eine polierte Oberfläche zur Verfügung:

A. Graues CA® Stripping Tool 60 µm für 60 Sekunden
B. Weißes CA® Stripping Tool 25 µm für 30 Sekunden
C. Gelbes CA® Stripping Tool 15 µm für 30 Sekunden

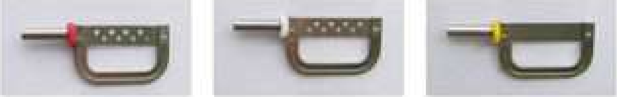


Abbildung 11. Die oberen seitlichen Schneidezähne und alle vier unteren Schneidezähne können mesial und distal 0,3 mm reduziert werden.

Um diese interdentale Reduktion und eine polierte Oberfläche zu erreichen, sollten folgende Instrumente benutzt werden:

A. Rotes CA® Stripping Tool 40 µm für 30 Sekunden
B. Weißes CA® Stripping Tool 25 µm für 30 Sekunden
C. Gelbes CA® Stripping Tool 15 µm für 30 Sekunden

So sollte die Progressive Stripping Technik angewandt werden:
Halten Sie das abgewinkelte EVA-Winkelstück fest und lassen Sie das CA® Stripping Tool die oszillierenden Stripping-Bewegungen.
Führen Sie die Reduzierung bei gleichzeitiger Kühlung durch.
Spülen Sie zwischen den einzelnen CA® Stripping Tools.

Abbildung 12.

Die Progresssive Stripping Technik wird wie folgt ausgeführt:
Ohne Anästhesie.
Nach stufenweiser Schmelzreduktion.
Prüfen Sie anschließend (mit Zahnseide), ob die reduzierte Oberfläche glatt ist.
Tragen Sie Fluor auf die reduzierte Fläche auf.
Duraphat (Colgate).

Abbildung 13.

Abbildung 14. Veröffentlichungen der der Progressiven Stripping Technik nach Echarri zugrunde liegenden Studien finden Sie wie folgt:

1. Echarri P. Progressive Slenderizing Technique. In: Melsen B, Verleger. Adult Orthodontics. Oxford (United Kingdom):Blackwell Publishing; 2012.

2. Echarri P. Clear Aligner. 1. Edition, Madrid (Spain) Ripano Médica; 2012.

Case Report 01623

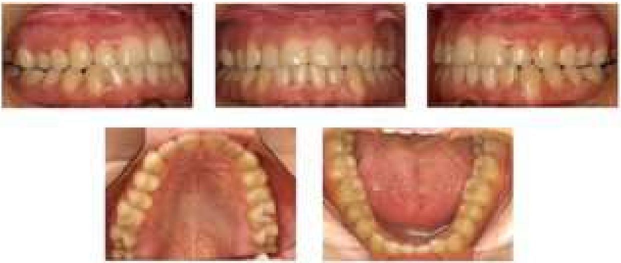


Abbildung 15. Rezidiv eines zuvor mit einer festsitzenden Apparatur behandelten Falles.

Mesiale Rotation des oberen linken seitlichen Schneidezahns.

Mesiale Rotation des unteren linken seitlichen Schneidezahns.

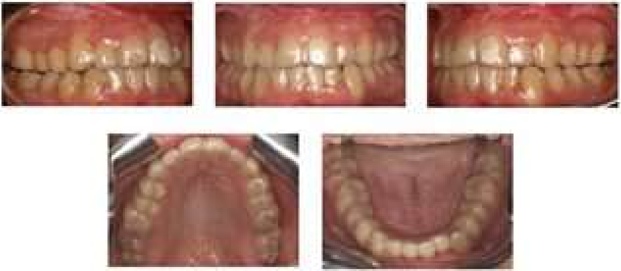


Abbildung 16. CA® CLEAR ALIGNER zur Expansion und Platzgewinnung, um die Zähne 22 und 32 mesial und distal strippen zu können.

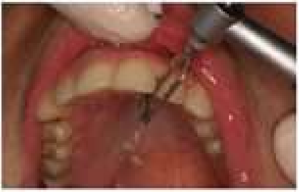


Abbildung 17. Distales Strippen von Zahn 21 mit dem grauen CA® Stripping Tool 60 µm für 60 Sekunden.

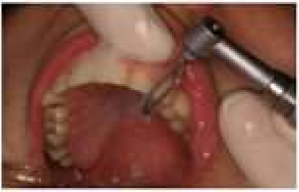


Abbildung 18. Mesiales Strippen von Zahn 23 mit dem grauen CA® Stripping Tool 60 µm, für 60 Sekunden.

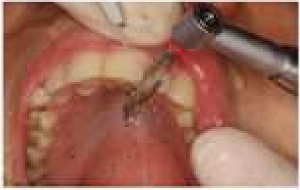


Abbildung 19. Mesiales Strippen von Zahn 22 mit dem roten CA® Stripping Tool 40 µm, für 30 Sekunden.

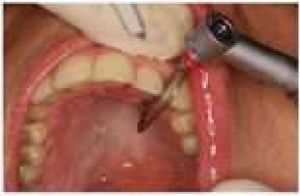


Abbildung 20. Distales Strippen von Zahn 22 mit dem roten CA® Stripping Tool 40 µm, für 30 Sekunden.

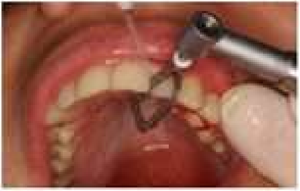


Abbildung 21. Distales Strippen von Zahn 21 und mesiales Strippen von Zahn 22 mit dem weißen CA® Stripping Tool 25 µm, für 30 Sekunden.

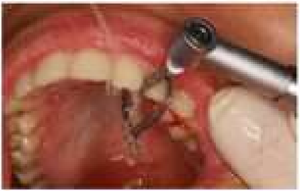


Abbildung 22. Distales Strippen von Zahn 22 und mesiales Strippen von Zahn 23 mit dem weißen CA® Stripping Tool 25 µm, für 30 Sekunden.

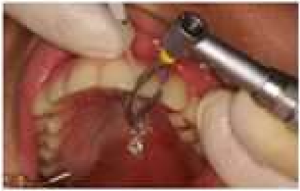


Abbildung 23. Distales Strippen von Zahn 21 und mesiales Strippen von Zahn 22 mit dem gelben CA® Stripping Tool 15 µm (Polier-Tool) für 30 Sekunden.

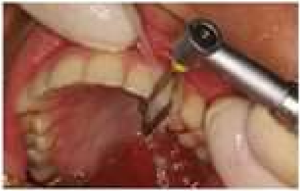


Abbildung 24. Distales Strippen von Zahn 22 und mesiales Strippen von Zahn 23 mit dem gelben CA® Stripping Tool 15 µm (Polier-Tool), für 30 Sekunden.

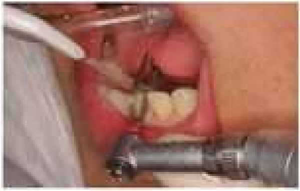


Abbildung 25. Distales Strippen von Zahn 31 und mesiales Strippen von Zahn 32 mit dem roten CA® Stripping Tool 40 µm, für 30 Sekunden.

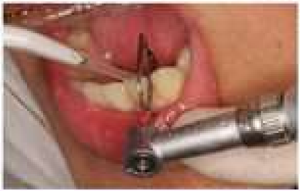


Abbildung 26. Distales Strippen von Zahn 32 mit dem roten CA® Stripping Tool 40 µm, für 30 Sekunden.

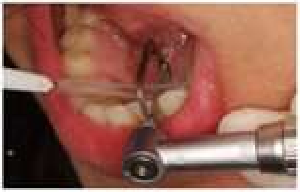


Abbildung 27. Mesiales Strippen von Zahn 33 mit dem grauen CA® Stripping Tool 60 µm, für 60 Sekunden.

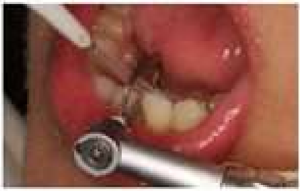


Abbildung 28. Distales Strippen von Zahn 31 und mesiales Strippen von Zahn 32 mit dem weißen CA® Stripping Tool 25 µm, für 30 Sekunden.

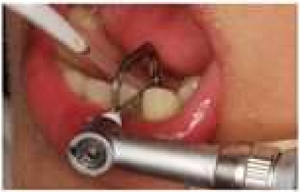


Abbildung 29. Distales Strippen von Zahn 32 und mesiales Strippen von Zahn 33 mit dem weißen CA® Stripping Tool 25 µm, für 30 Sekunden.

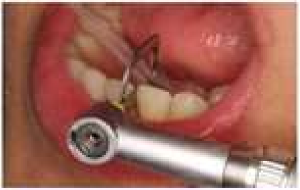


Abbildung 30. Distales Strippen von Zahn 31 und mesiales Strippen von Zahn 32 mit dem gelben CA® Stripping Tool 15 µm, für 30 Sekunden.

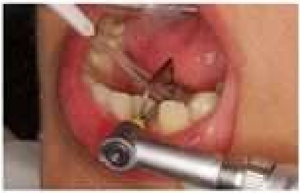


Abbildung 31. Distales Strippen von Zahn 32 und mesiales Strippen von Zahn 33 mit dem gelben CA® Stripping Tool 15 µm, für 30 Sekunden.

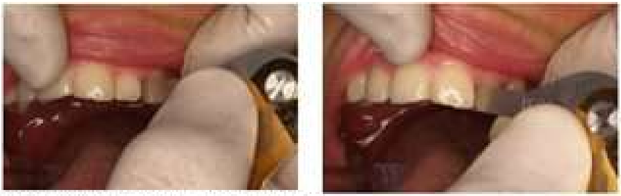


Abbildung 32. Messen der Abstände im Oberkiefer.

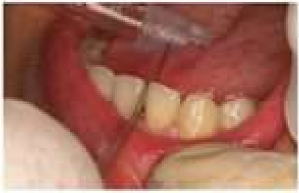


Abbildung 33. Messen der Abstände im Unterkiefer.

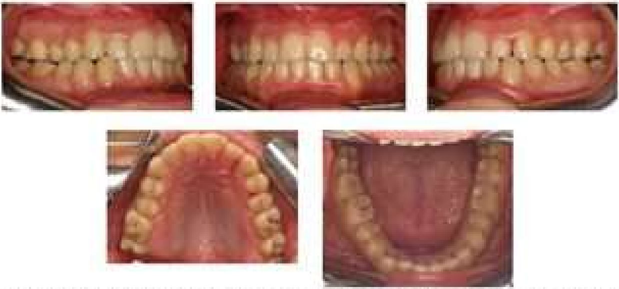


Abbildung 34. Nach erfolgtem Strippen werden Abdrücke genommen, um den nächsten Schritt in der CA® CLEAR ALIGNER Behandlung durchzuführen, während der Patient den vorhergehenden CA® CLEAR ALIGNER weiter trägt. Das Modell entspricht der aktuellen Mundsituation nach dem Strippen.

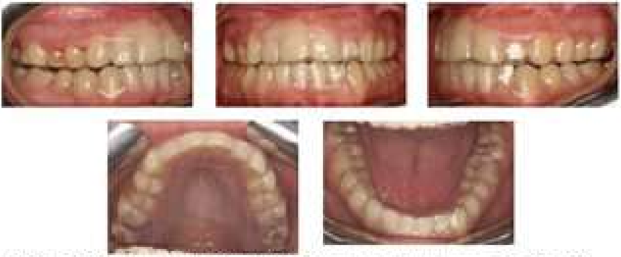


Abbildung 35. Die nächste CA® CLEAR ALIGNER Schiene in situ zur Umstellung von Zahn 22 und 32.

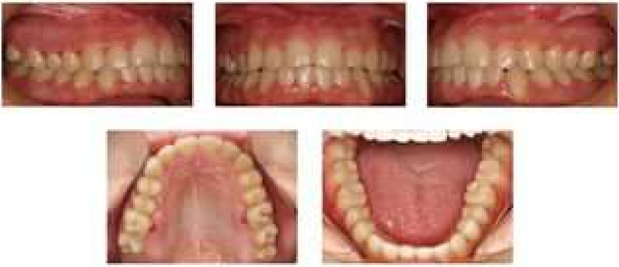
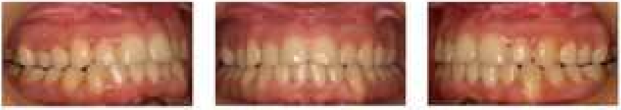


Abbildung 36. Abgeschlossener Fall, okklusale Adjustierung mit selektiver Schmelzreduktion.

VOR



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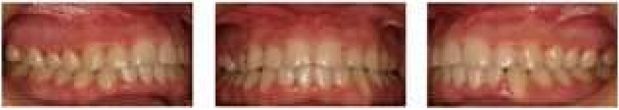

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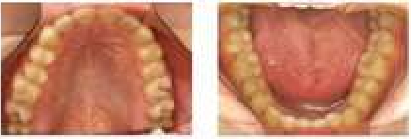

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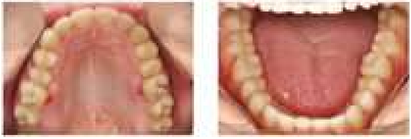

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