The use of early elastics in orthodontics

BY

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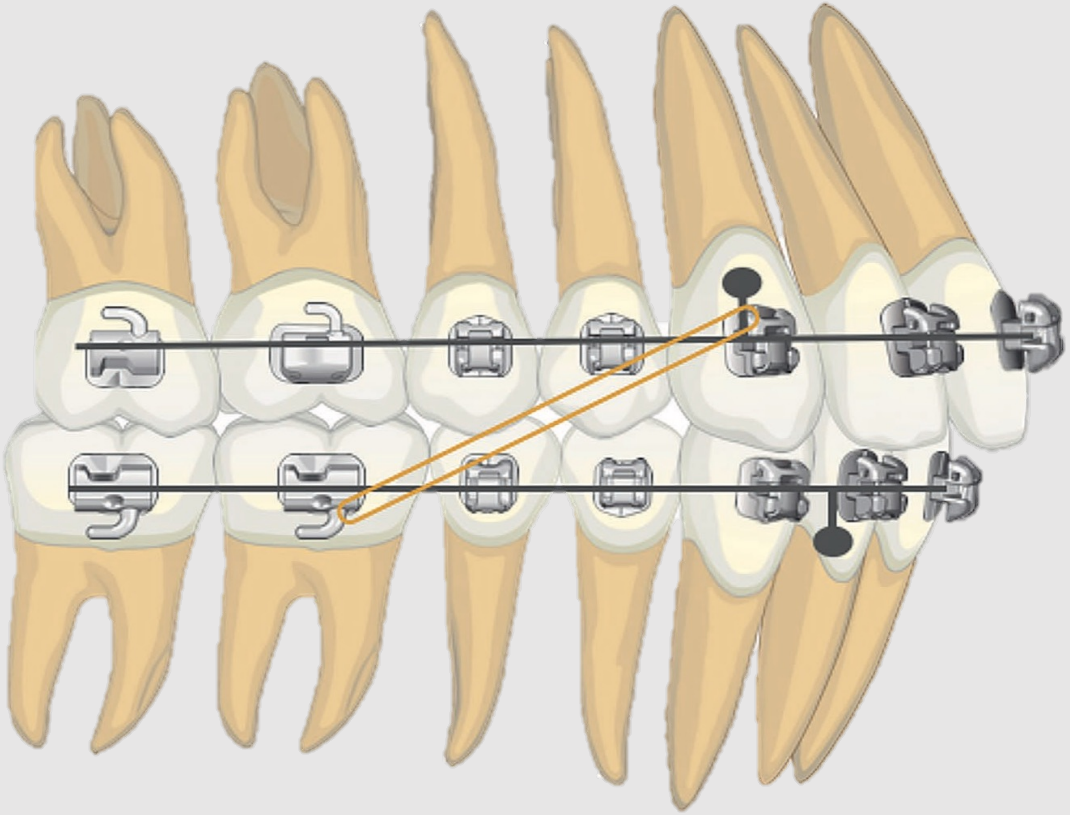
Elastics and Elastomeric are routinely used as active components of orthodontic therapy. Elastics have been a valuable adjunct of any orthodontic treatment for many years.

- ✓ The purpose of elastics is to guide the teeth into the desired positions, without the cumbersome aspect of binding generally associated with traditional orthodontic therapy.



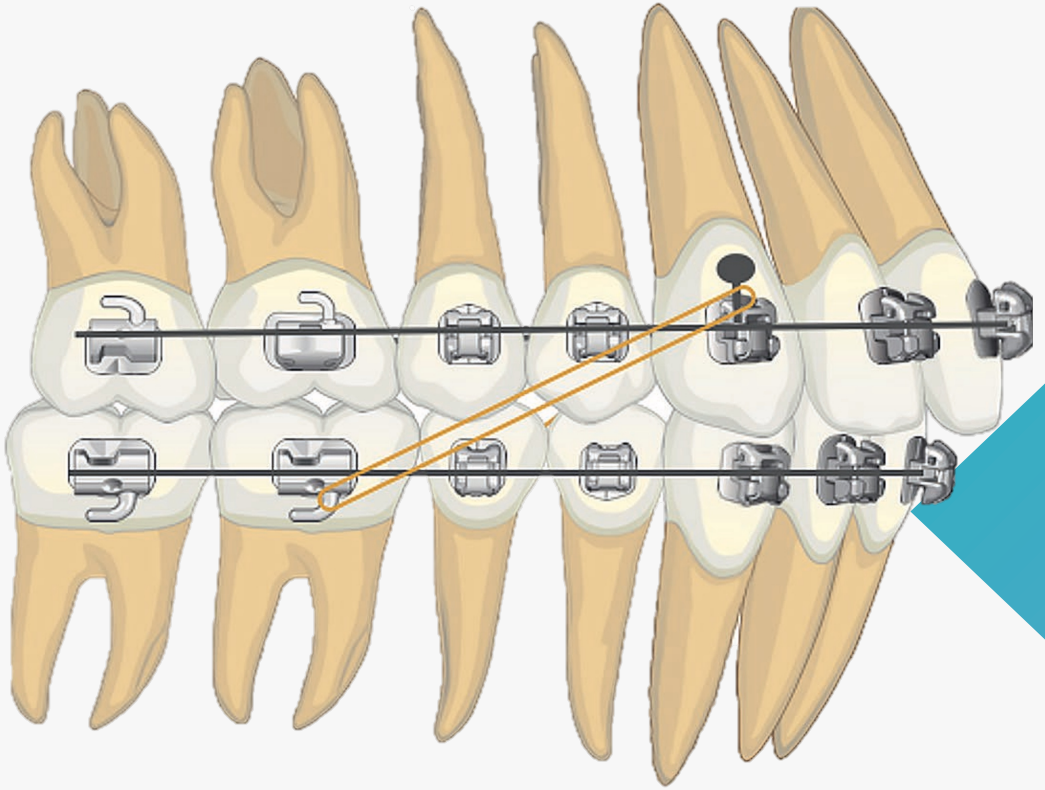
History of elastics and elastomeric

- Early advocates of using natural latex rubber in orthodontics were Baker, Case and Angle. In 1846 Baker in article on “the use of Indian rubber in regulating teeth” in New York dental recorder, he explained by cutting a narrow strip from thin sheet of Indian rubber and extending it to nearly its utmost capacity without breaking, fastened to the tooth to be regulated. Henry A Baker is credited with originating the use of intermaxillary elastics. In 1893 introduced the use of intermaxillary elastics with the rubber bands, called as Baker anchorage.

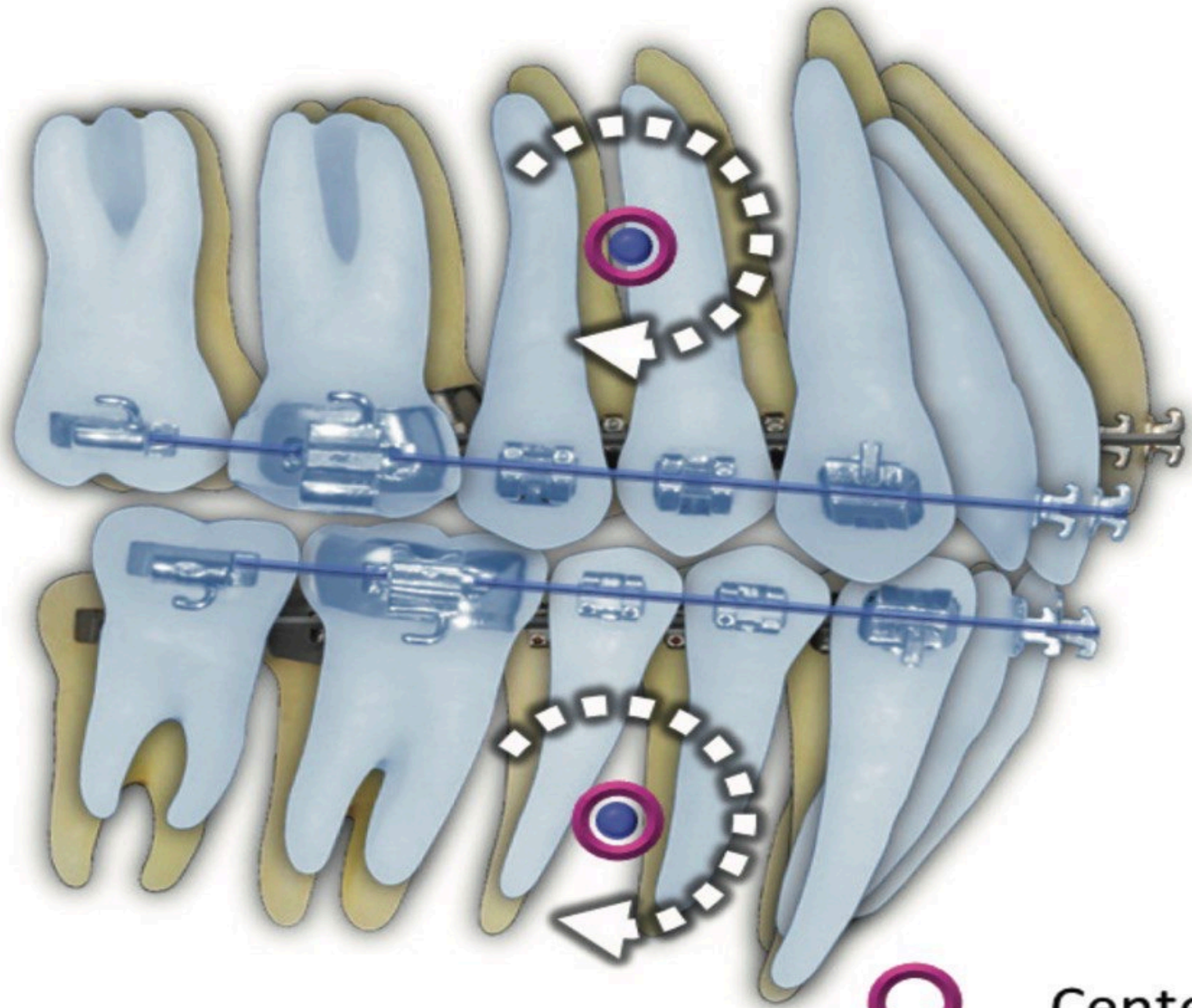
- Calvin Case discussed the use of intermaxillary elastics at the Columbia Dental Congress. Angle in1902 described the technique before the New York institute.

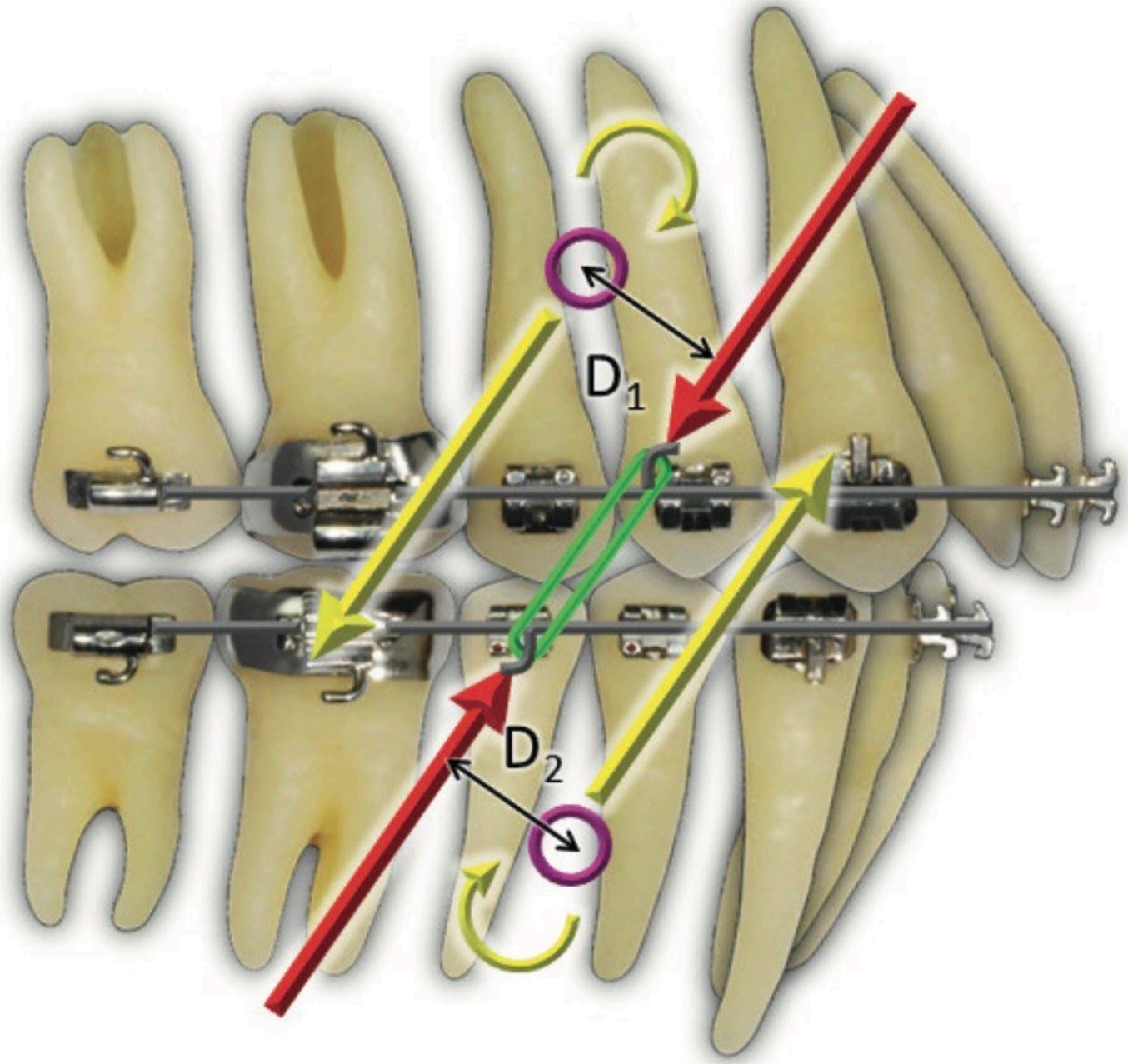
History of elastics and elastomeric

- Experiments in producing synthetic rubber were continued in 1920's chiefly by scientists in Germany and United states.
- Elastomeric chains were introduced to dental profession in the 1960's and have become integral part of many orthodontic practices.



The main problem with using the elastics in the third stage is the friction between the archwire and the slot, that lead to a more significant load on the teeth and the TMJ, and many other side effects.


Center of resistance
Center of rotation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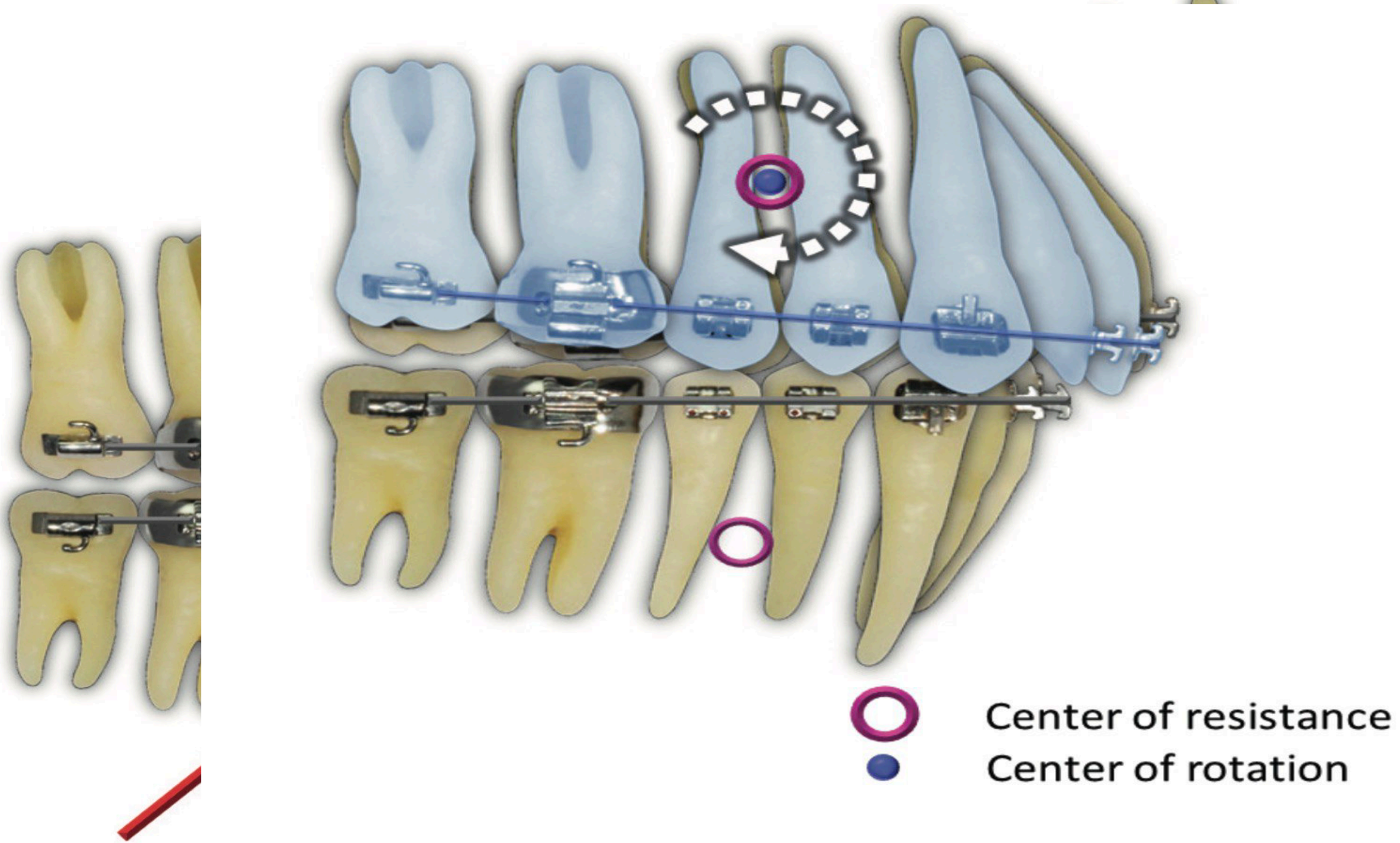
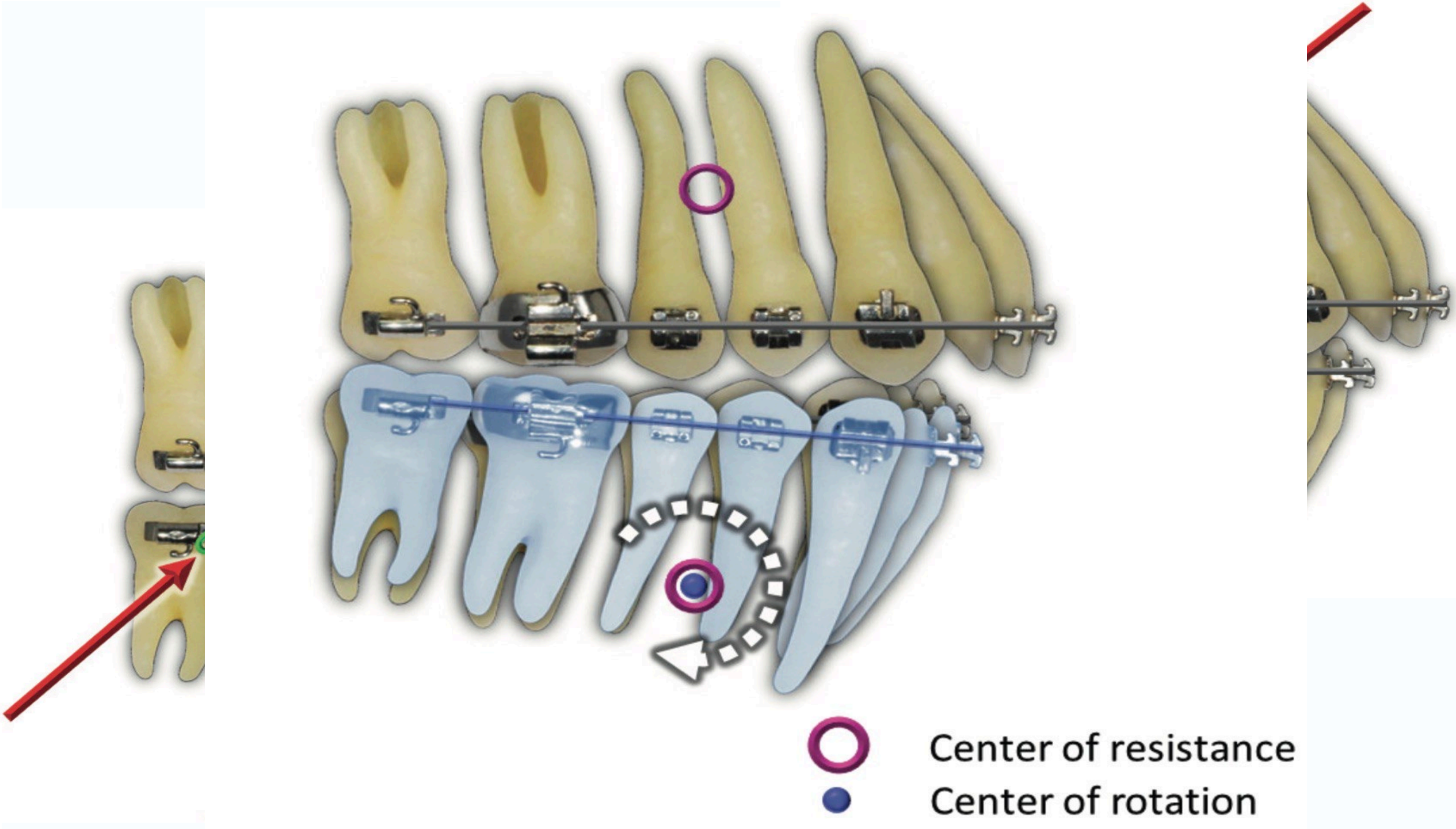

Center of resistance
Center of rotation


Center of resistance
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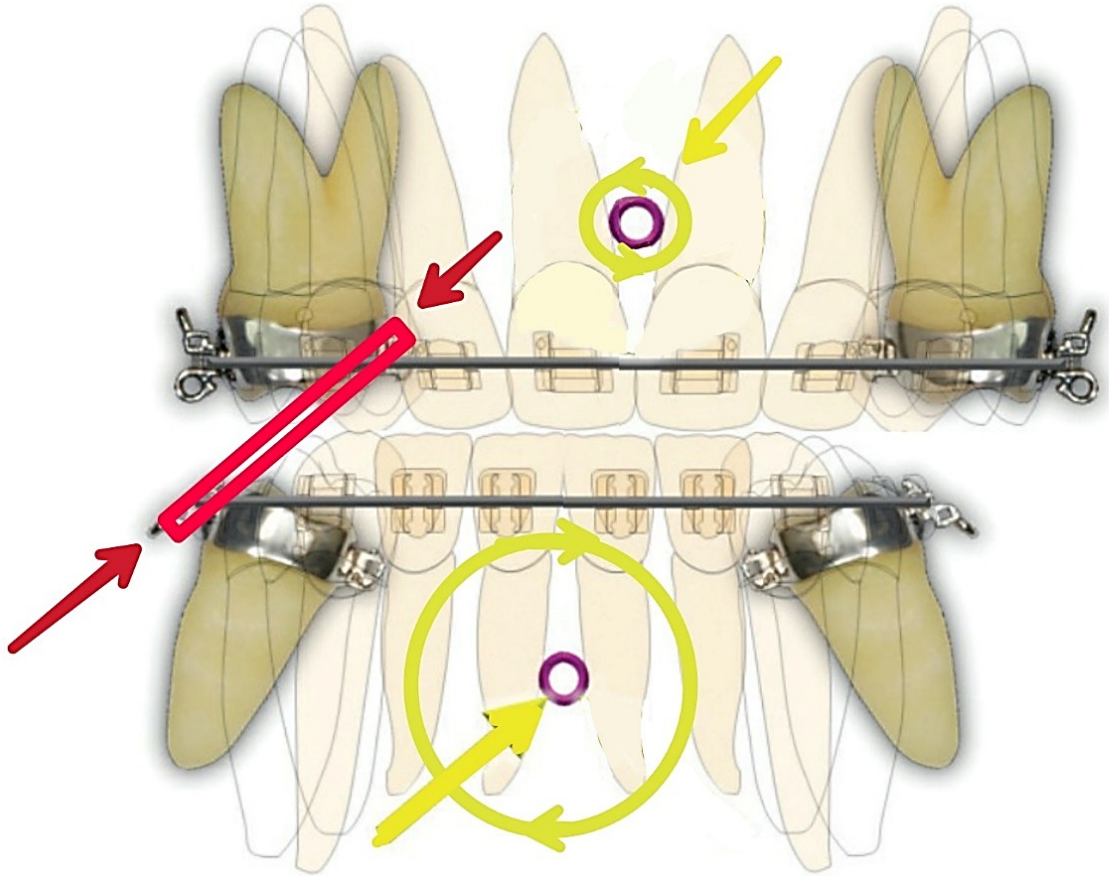
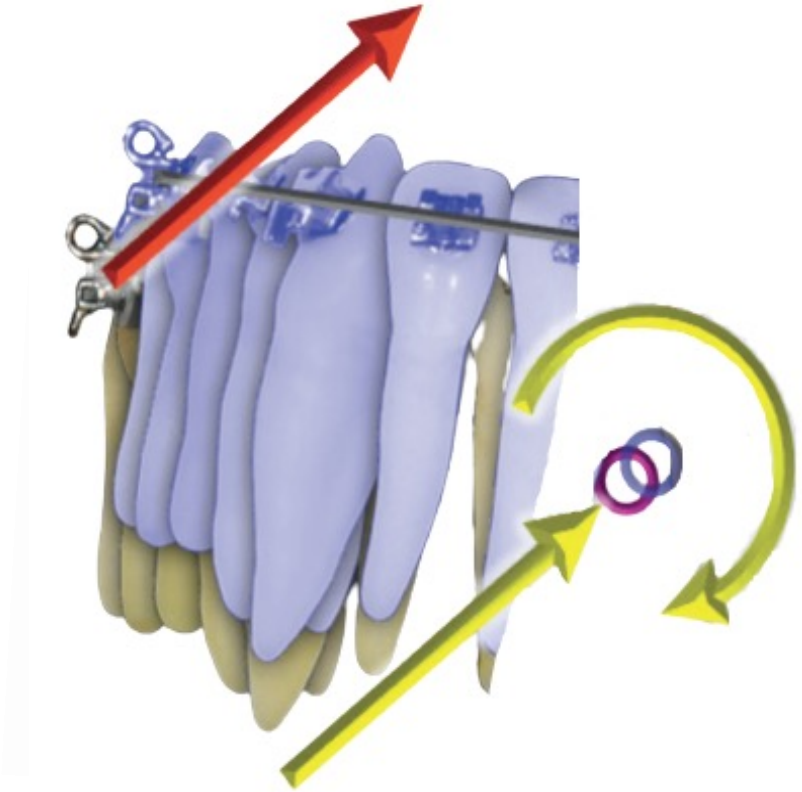
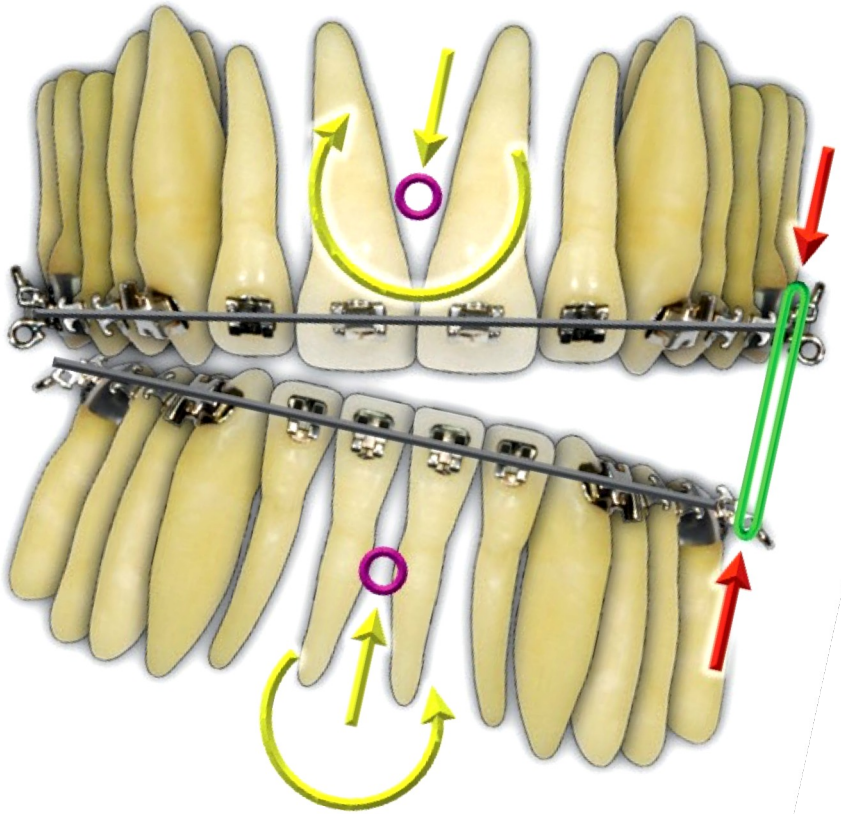
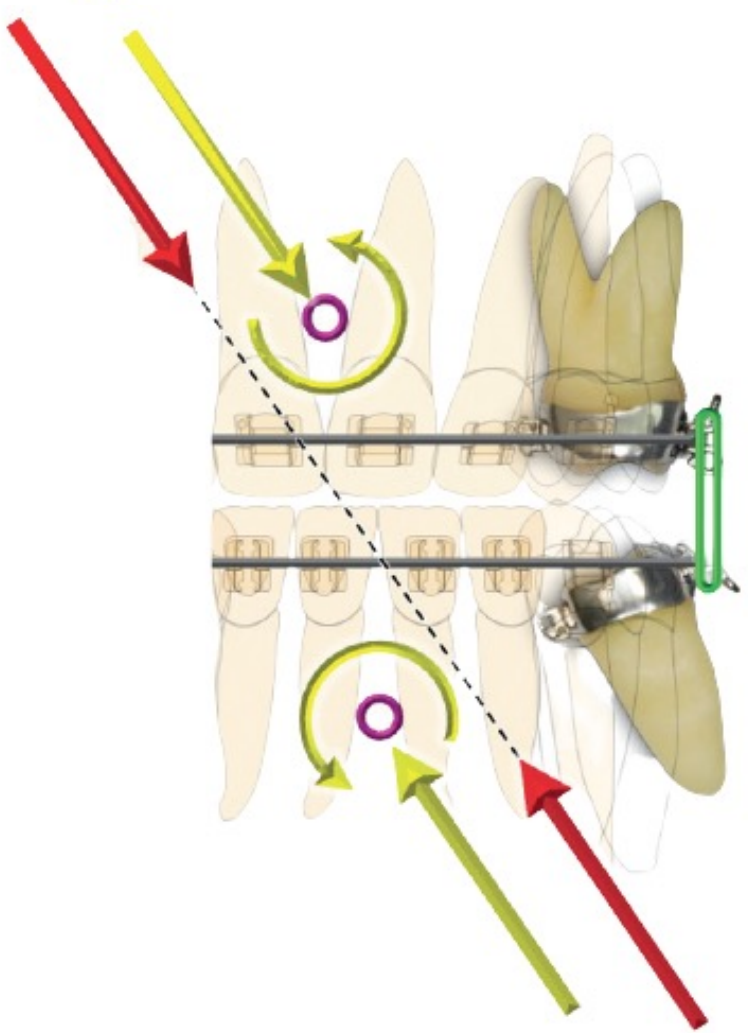


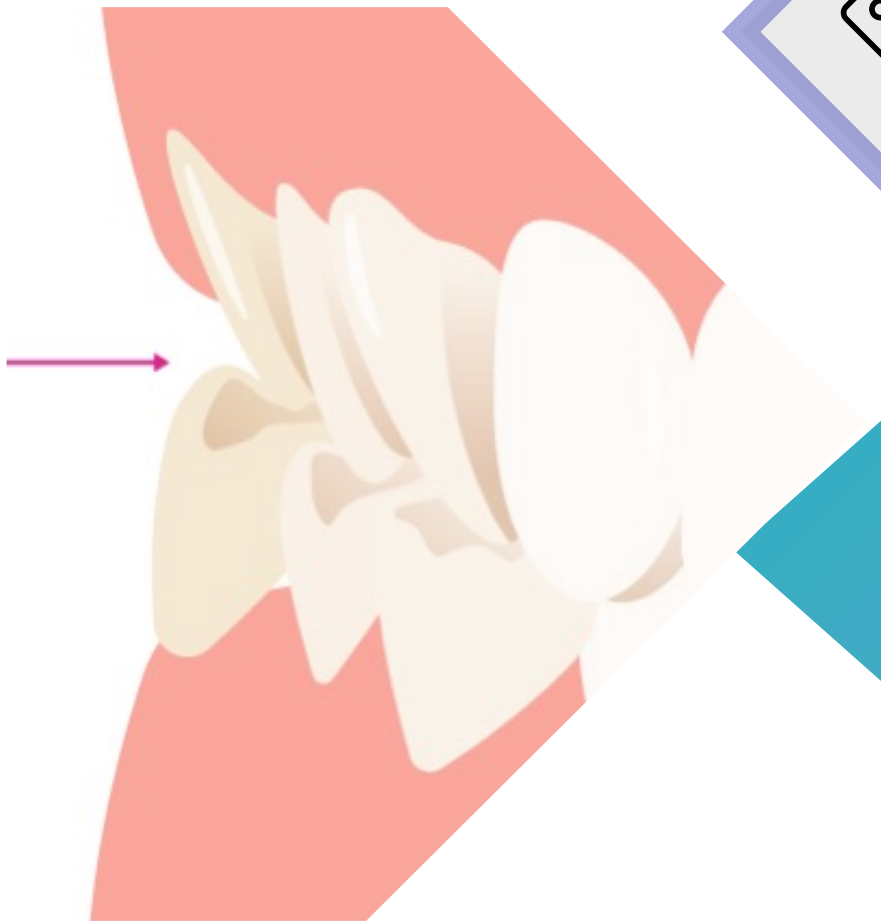


To avoid this side effect





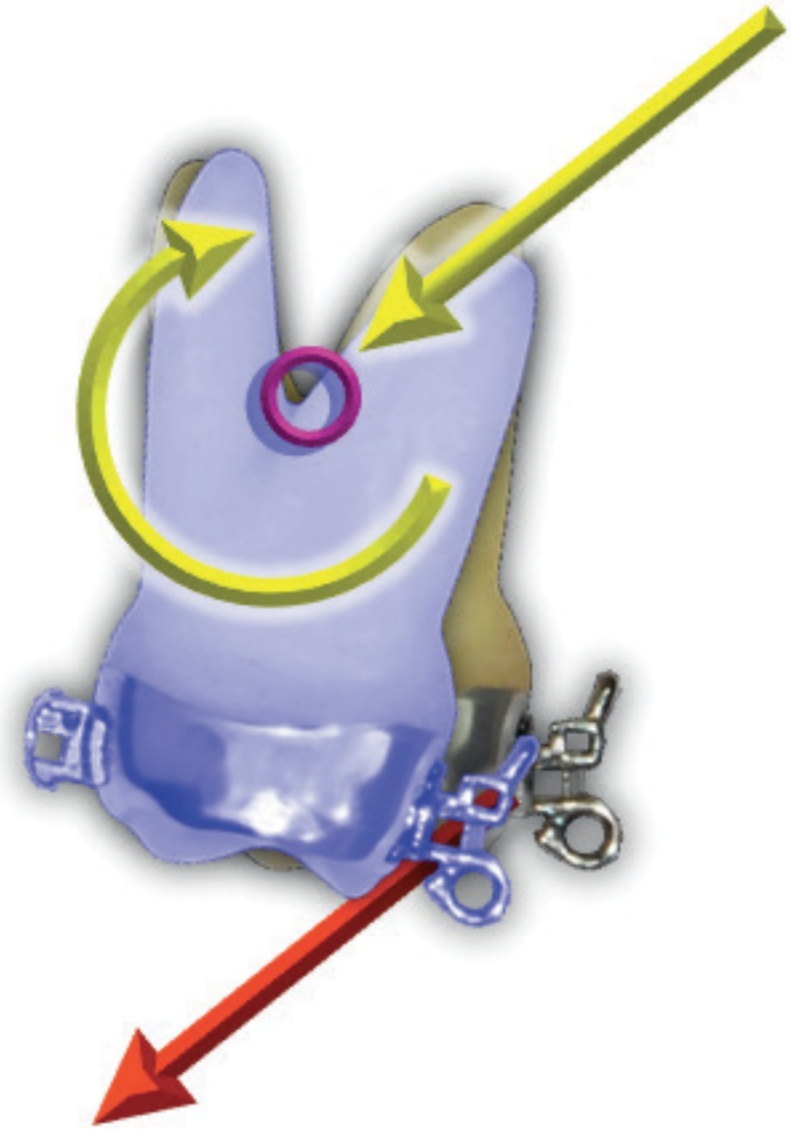
“Recently, great attention has been given to “early” elastics. That is, starting elastic wear in the initial wires in situations where a major Class II or III correction, open bite or transverse correction is desired.



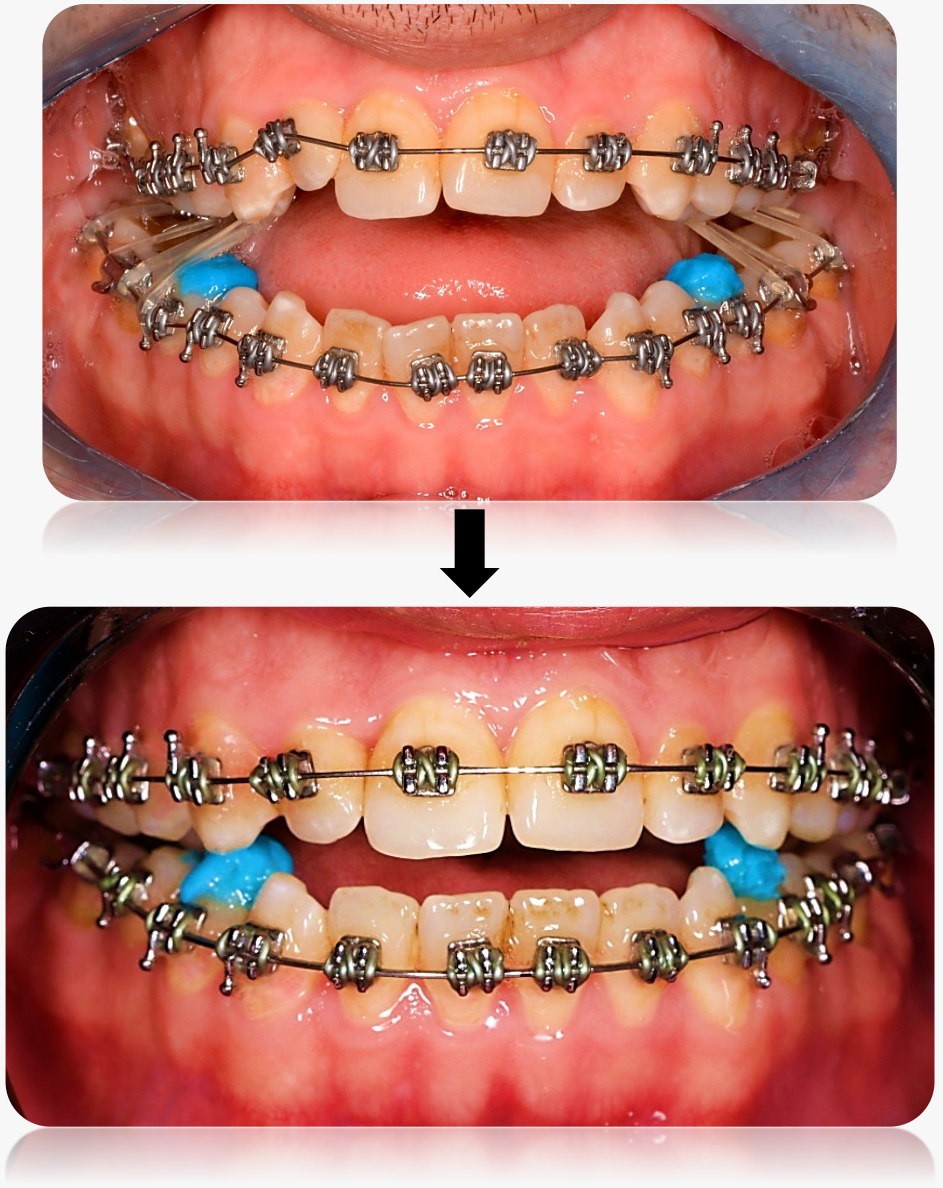
As, the friction coefficient between the wire and the slot is reduced to promote greater sliding between these contact surfaces, which translates into a greater tendency of movement.

Philosophy for Elastics

Physiological adaptation

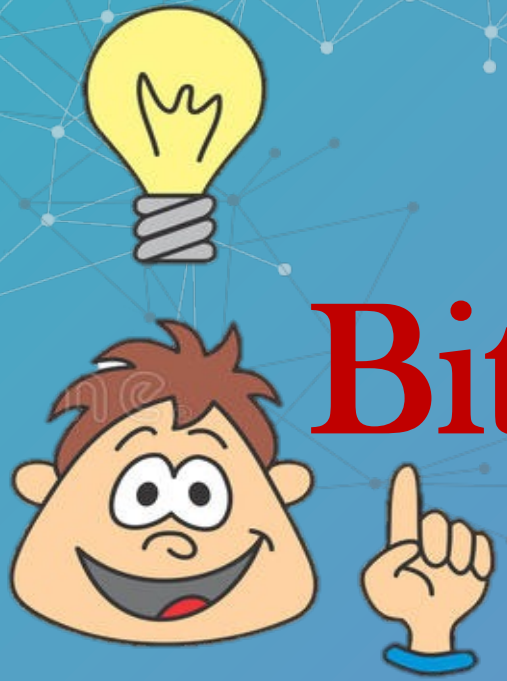


- ✓ The light-force System allows the evident forces to dictate the ideal physiological arch form.
- ✓ Posterior expansion can be achieved without the use of mechanical expanders by adapting these forces and not overpowering the biomechanical system.
- ✓ The body's own physiology sets the course to a more biologically adaptive and biologically normalized result.



The question then becomes:

How do we counteract the unwanted effects produced by intermaxillary elastics but maintain the desired effects?



Bite Turbos

Bite turbos serve as a vertical anchorage unit, minimizing the undesired extrusive effect and thereby making them essential for the system to work correctly. Together with the elastics, they provide vertical stability. Transverse stability, meanwhile, is provided by the system’s archwires. That is, the only effect that will have 100% freedom of movement is the sagittal one. As we can see, all the parts that make up the system are perfectly planned for the treatments to progress successfully.

Intermaxillary Elastics and PSL

David Ortiz

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These reduced forces from day 1 result in less load on the joint and periodontal tissues. If needed, this will also prepare the joint for the use of stronger elastics in the more advanced phases of treatment.

A *Advantages of initial elastics*

Avoid the side effects of using the elastics with the heavy gauge wire

Early correction of malocclusion

Individualized correction

Faster treatment time

01

Patient compliance

02

Tenderness and Pain

03

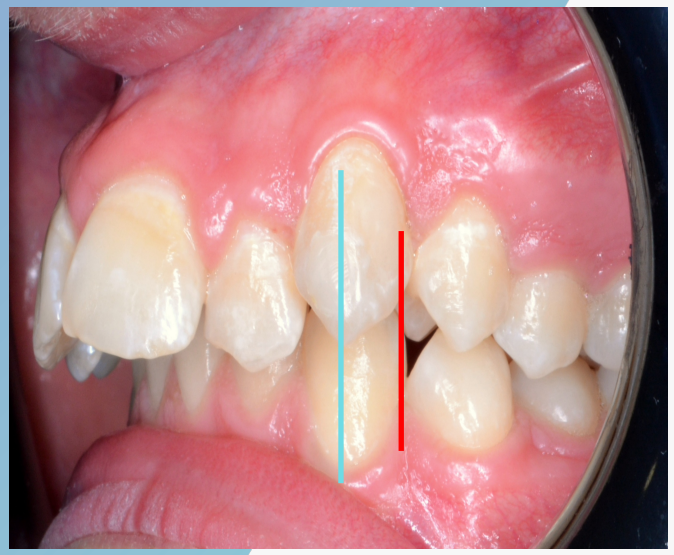
If heavy force it may cause extrusion

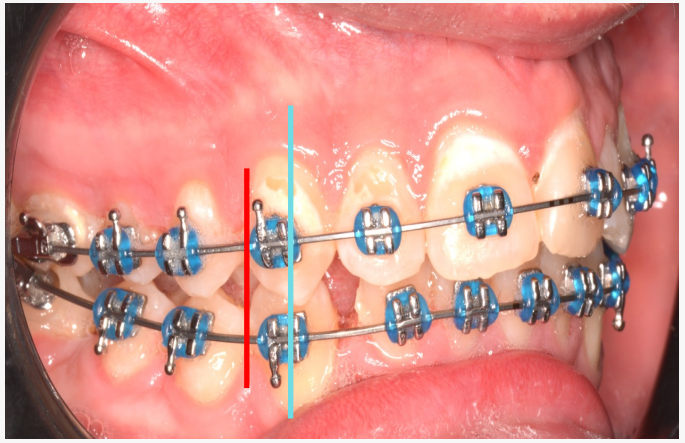
Disadvantages

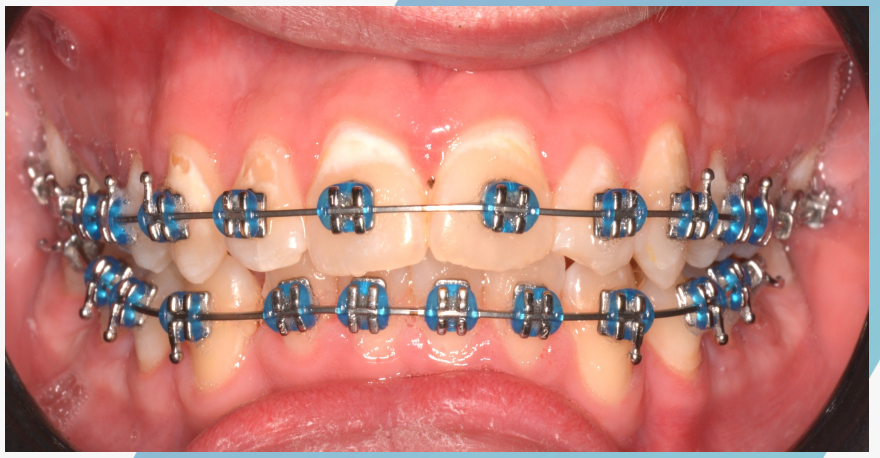
Cases

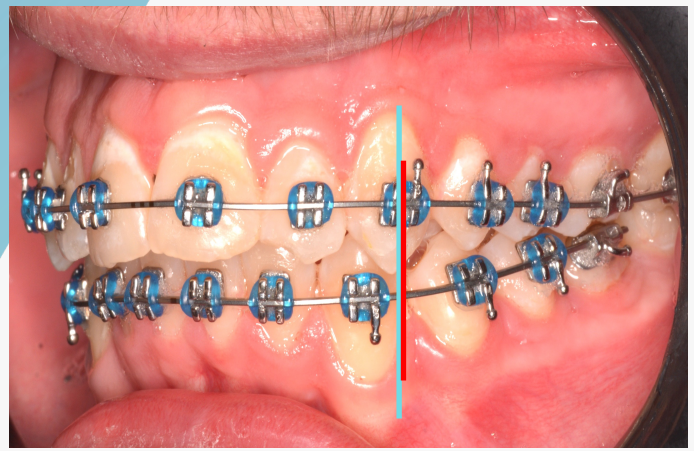
The following clinical cases show how very simple mechanics and this low-force system can achieve results that are beneficial to patients and clinicians.

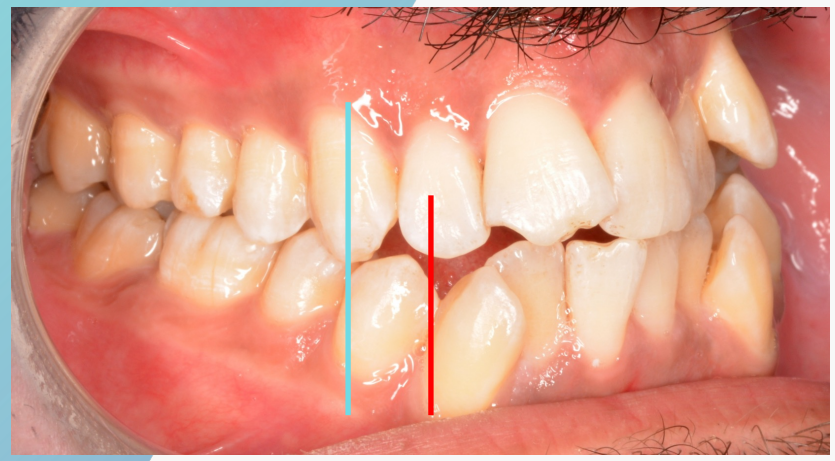
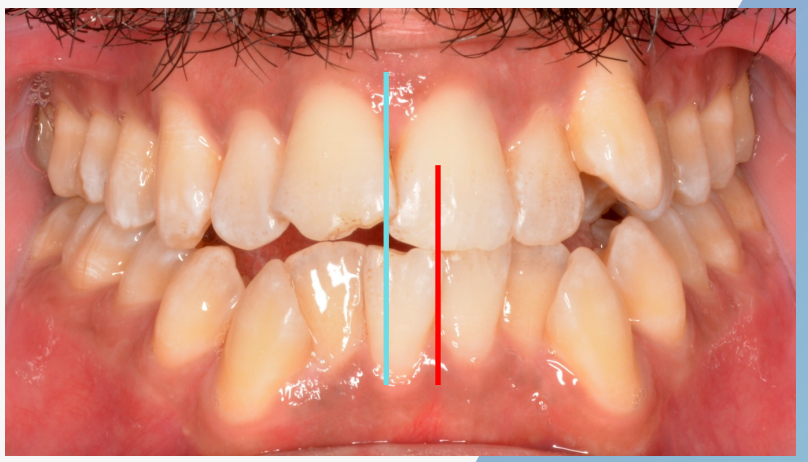
- Nassir
- Maria
- Omar
- Batool
- Ahmed
- Hussain
- Hussain

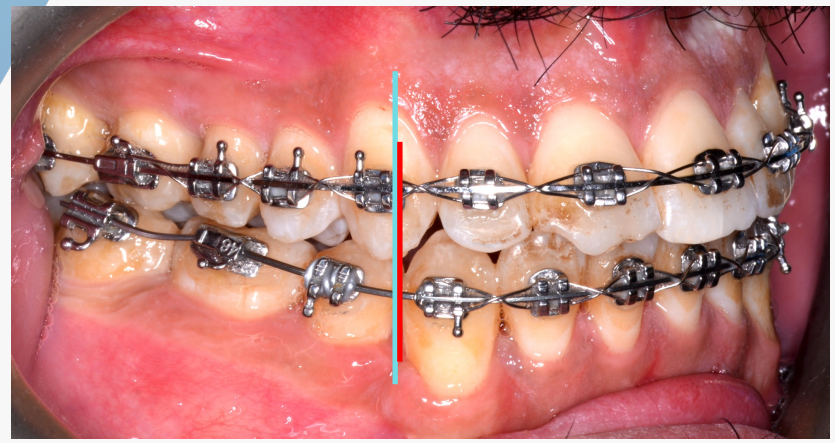
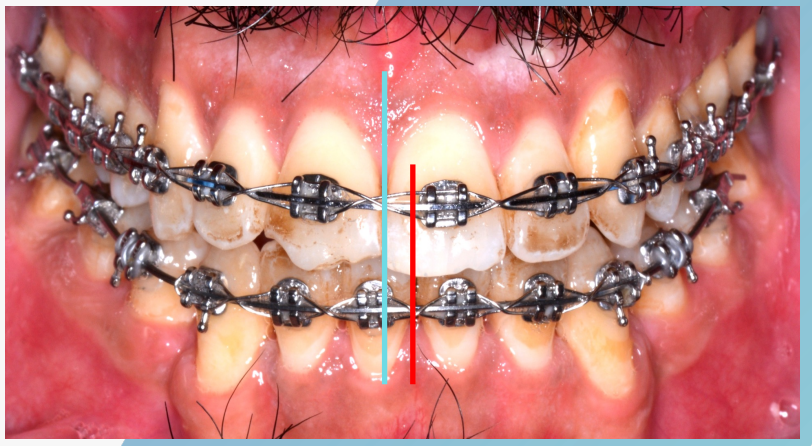
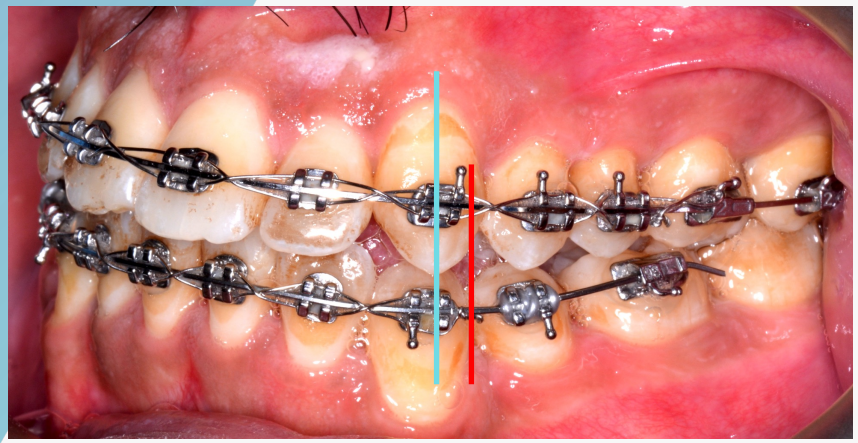


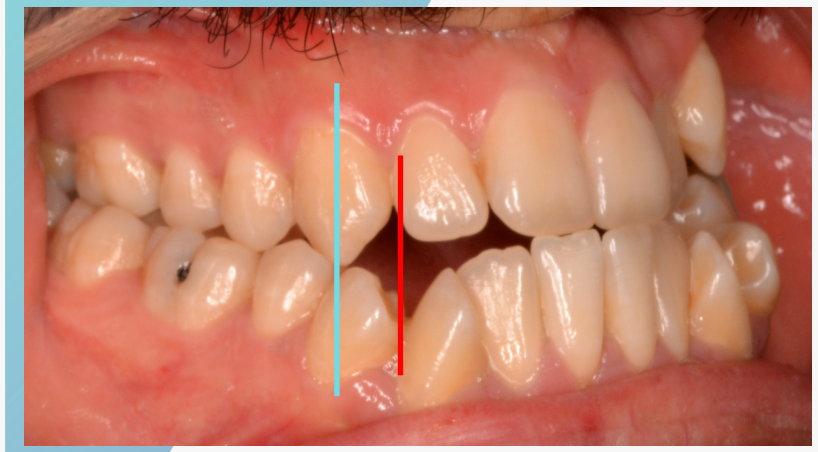
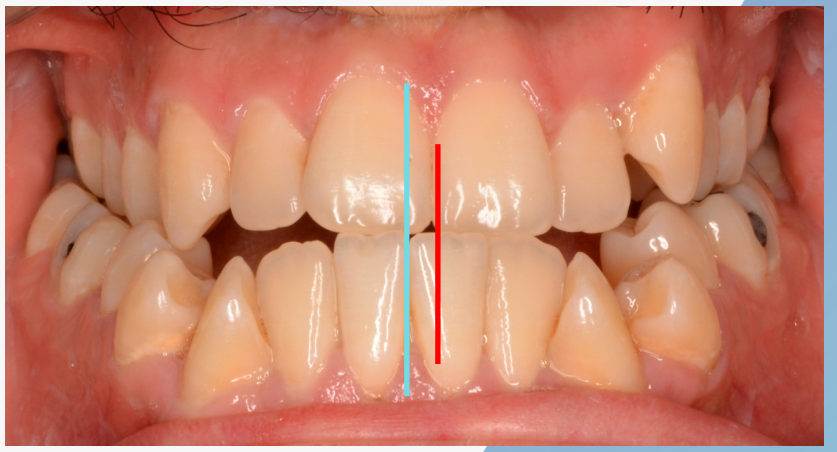
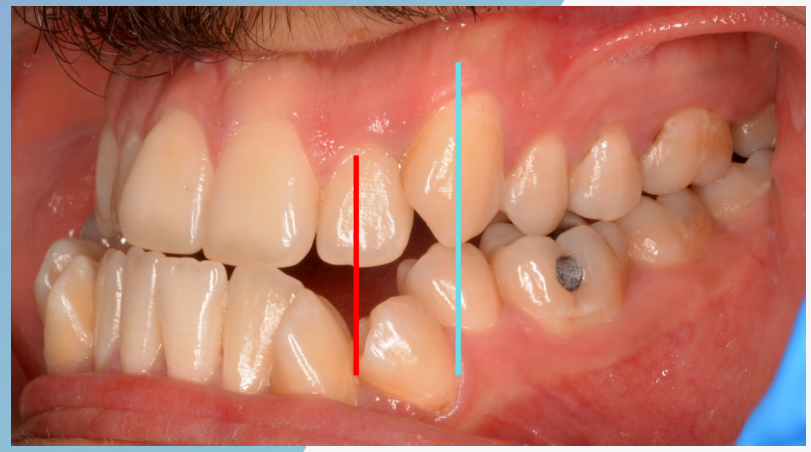
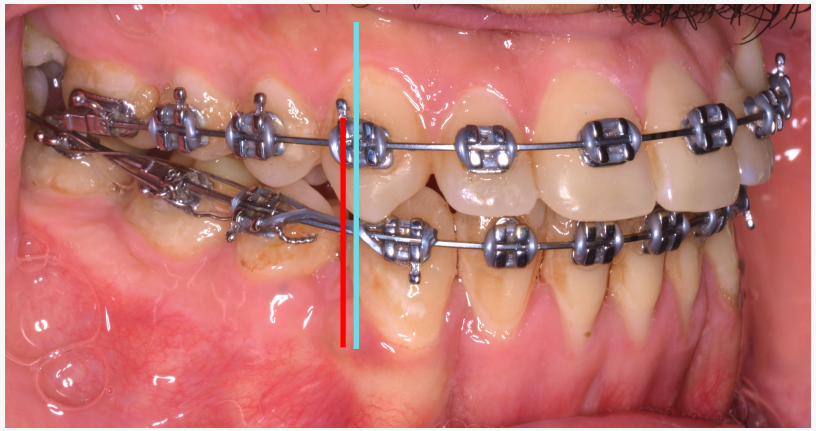
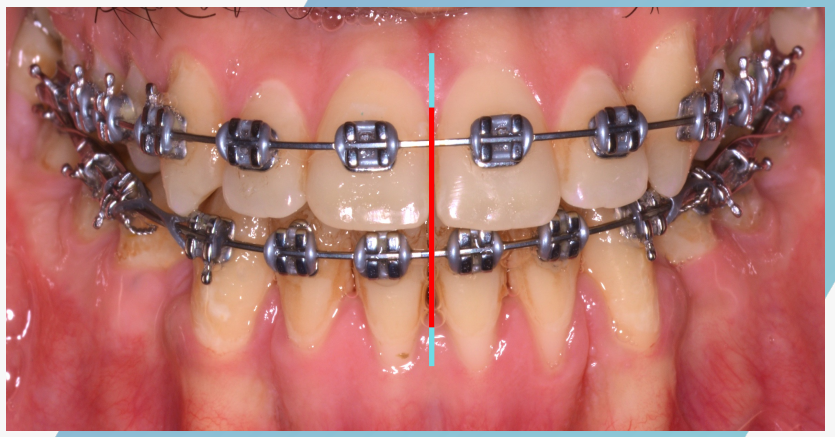
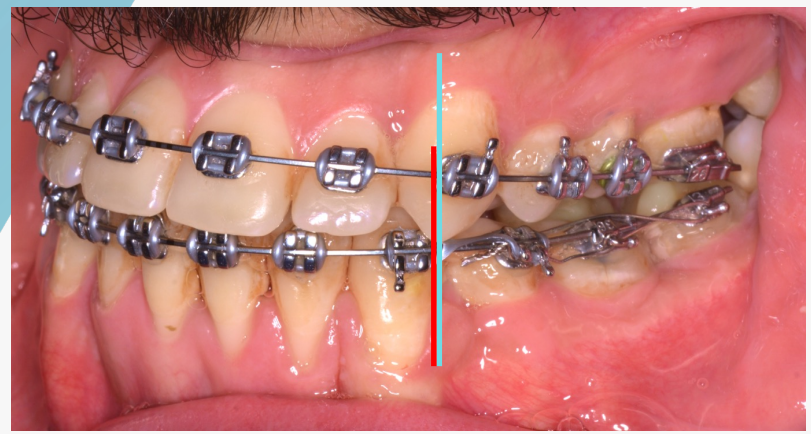


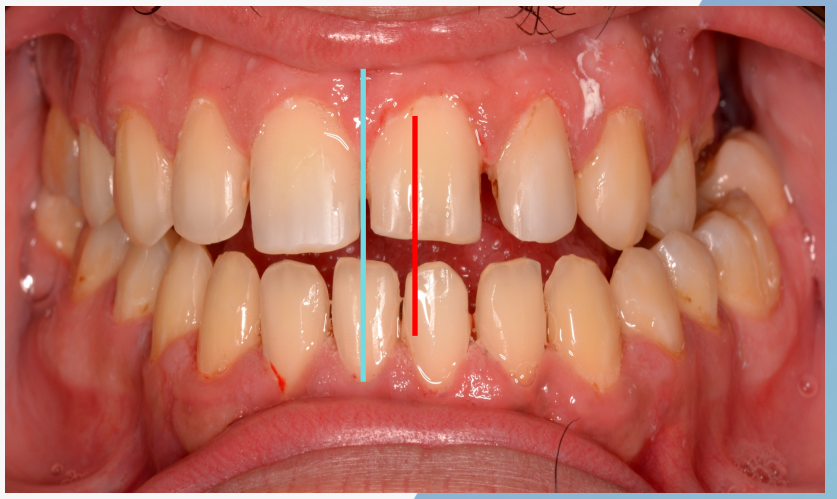


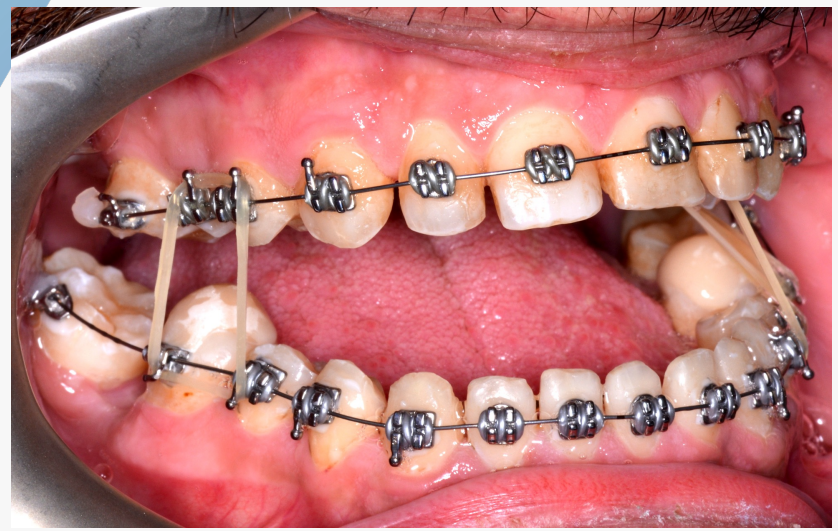
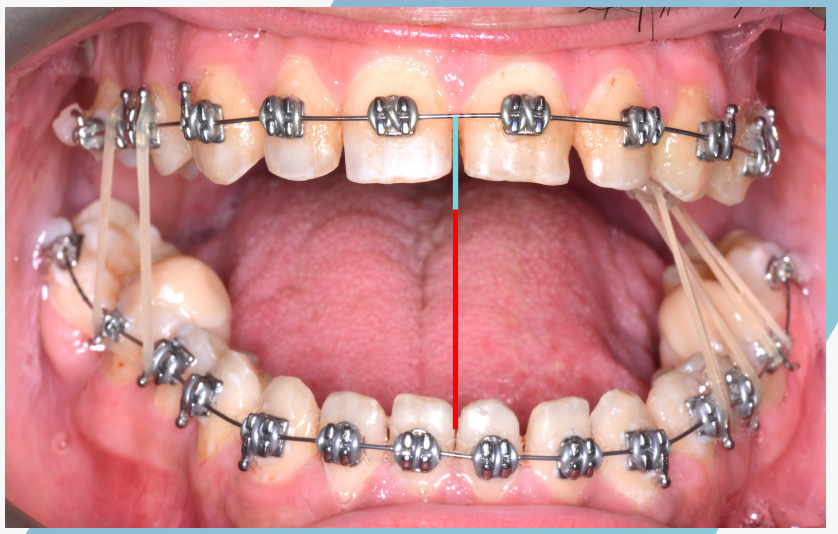
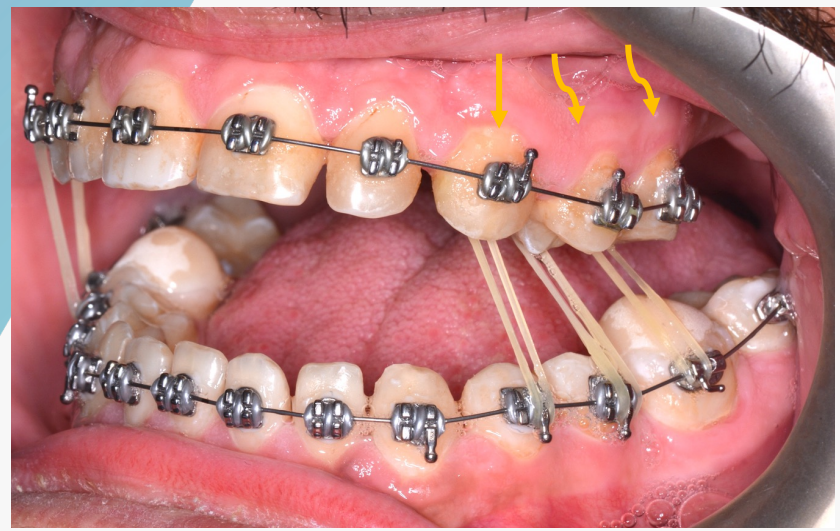


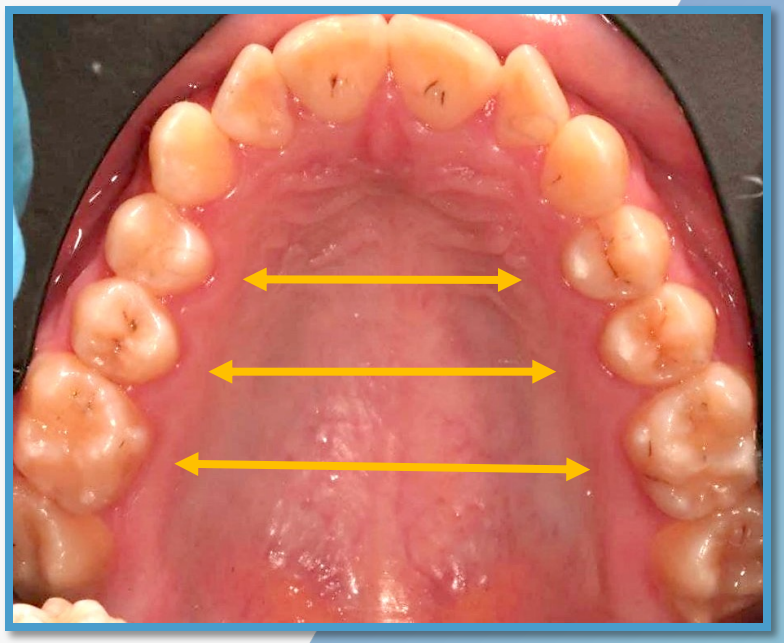



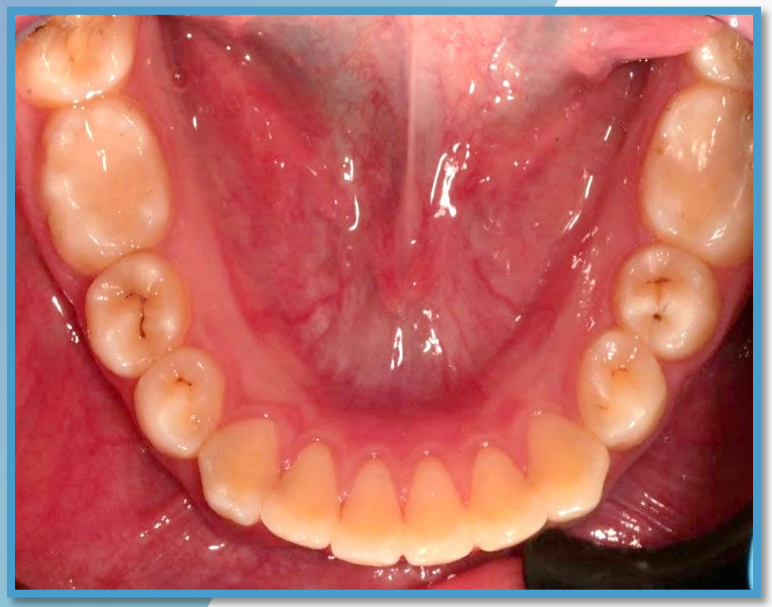




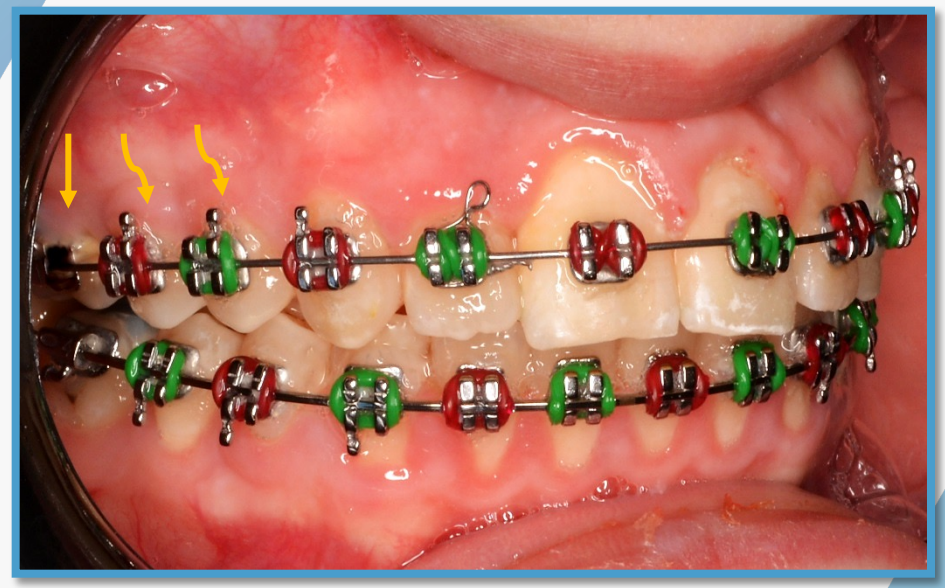







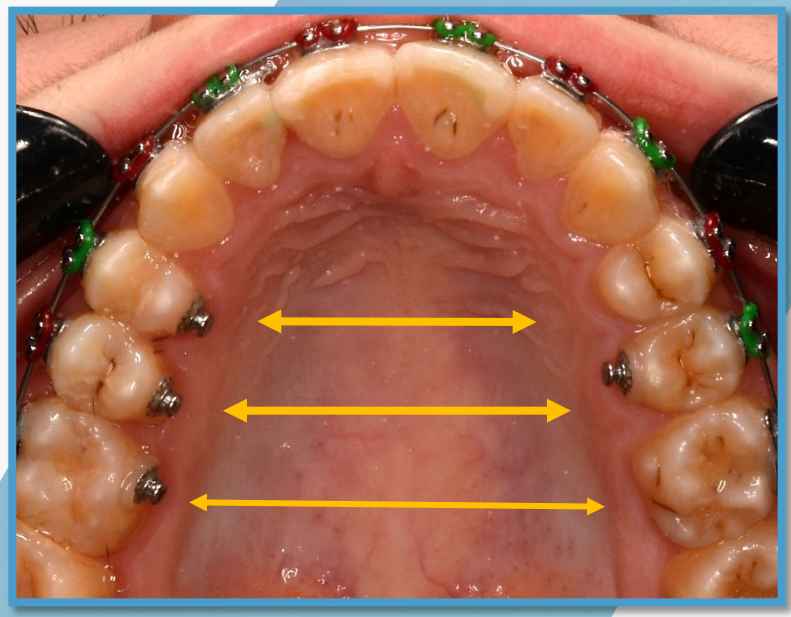



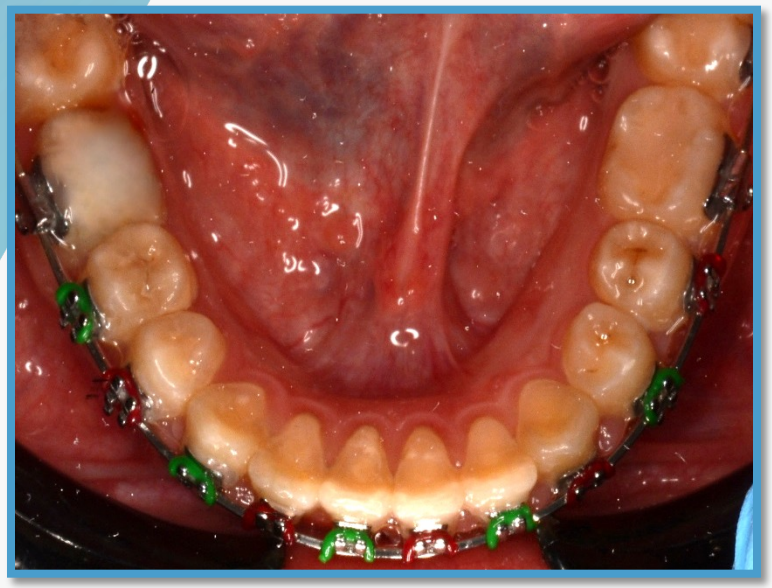




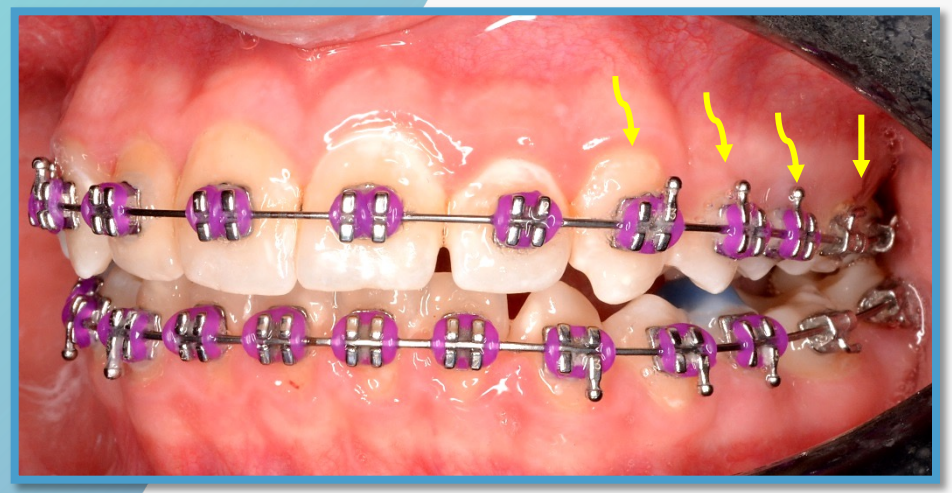


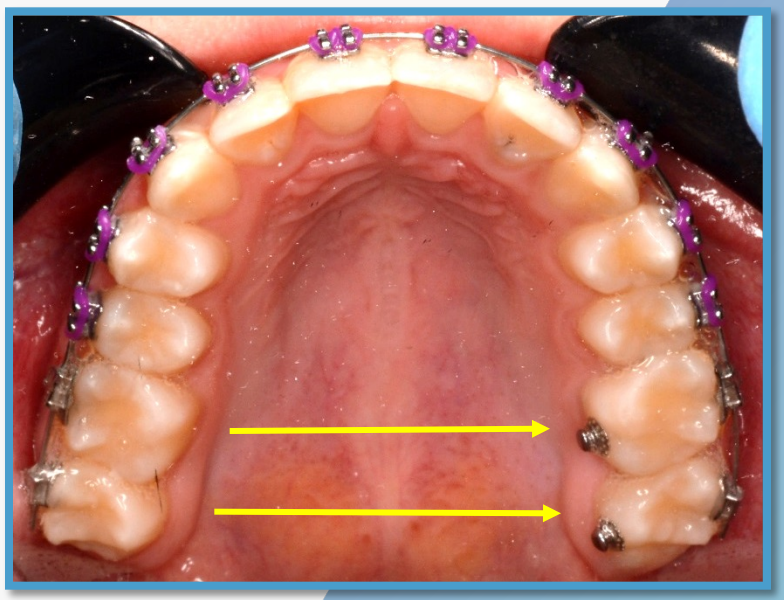


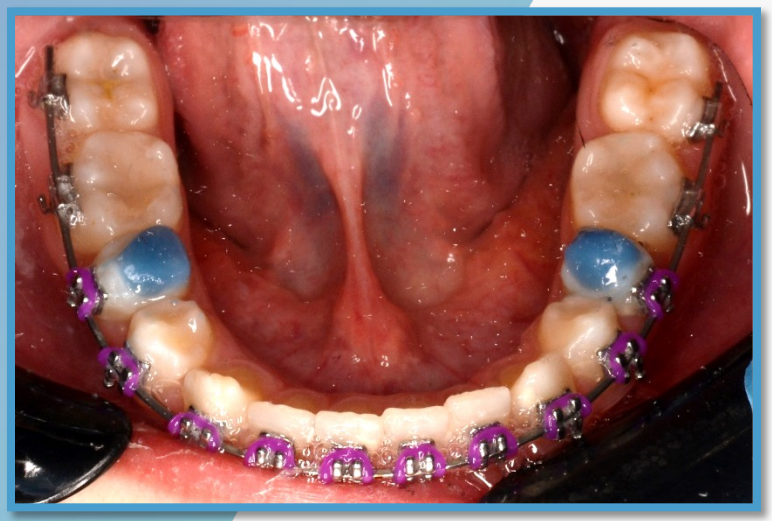


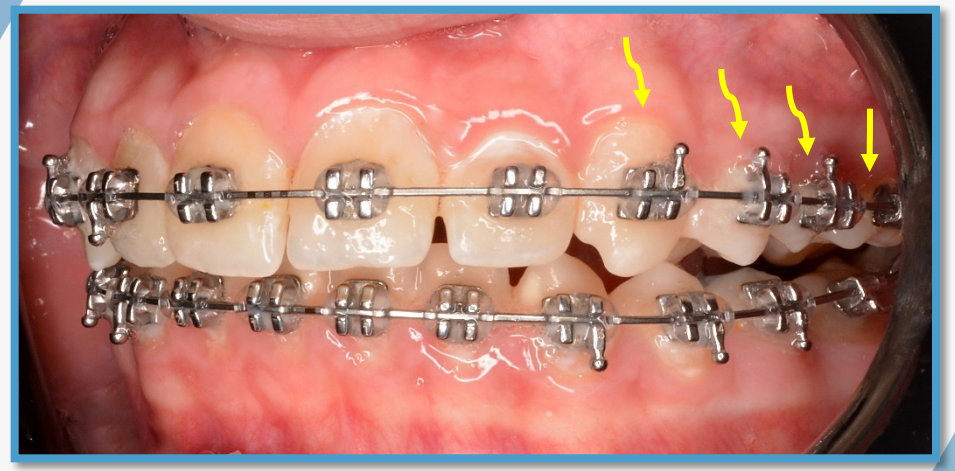


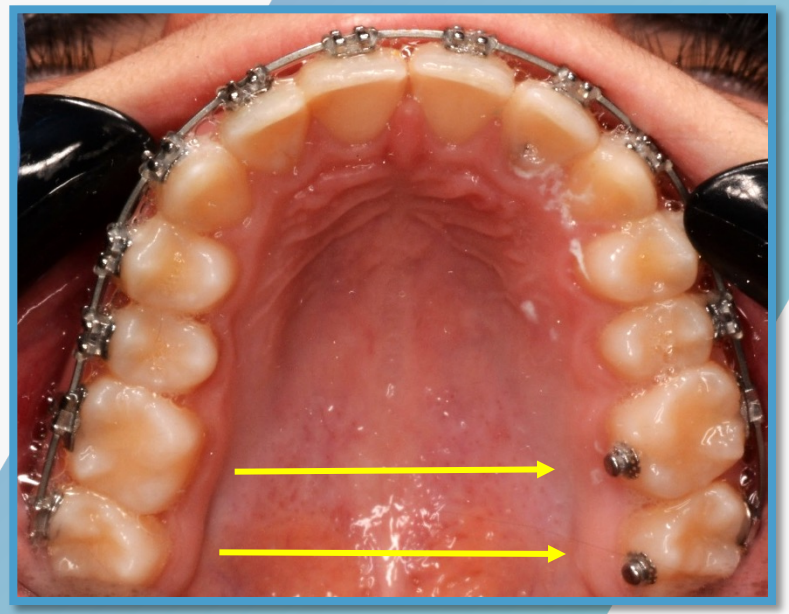


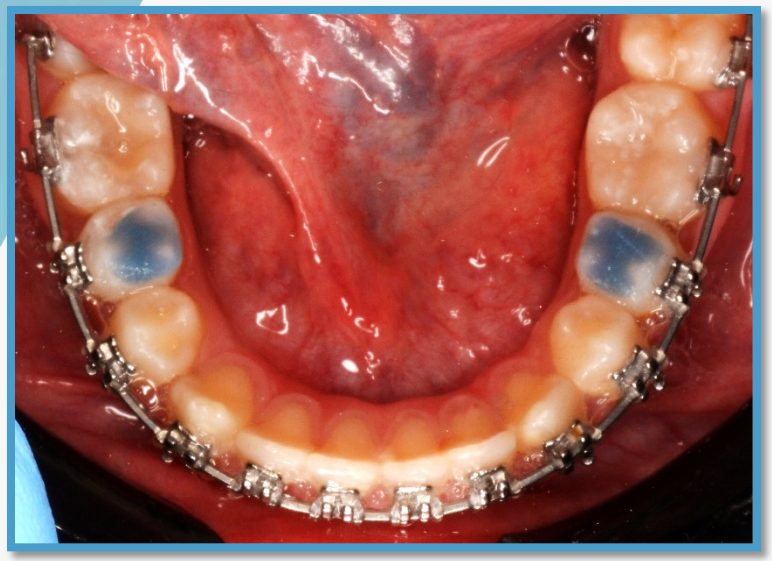


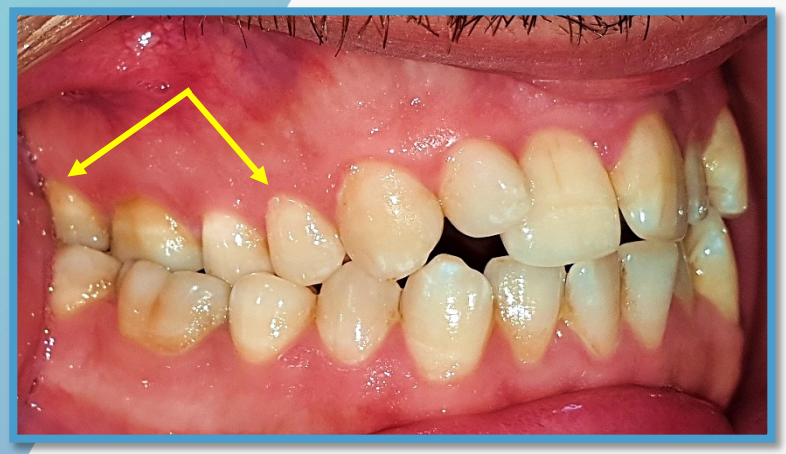


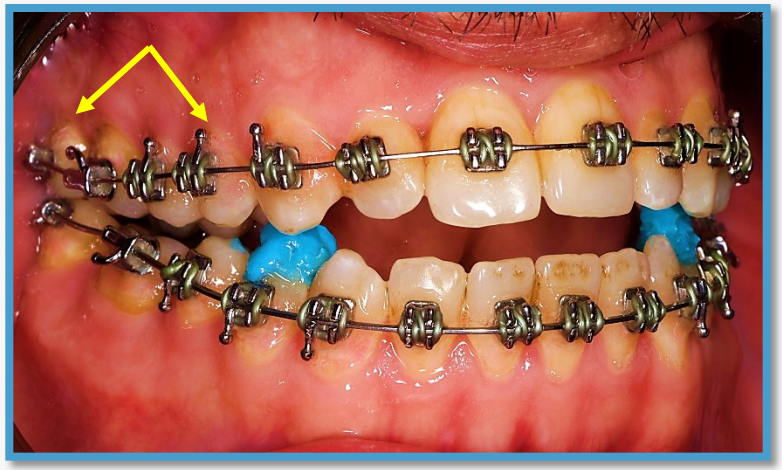


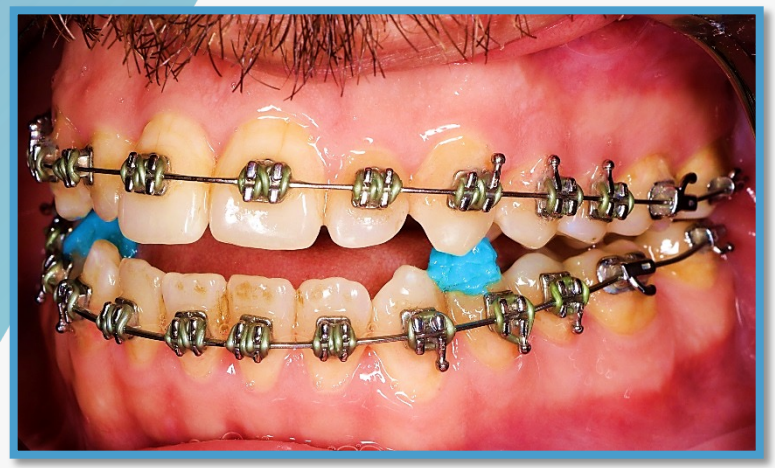












Conclusion

- The use of elastics can dramatically and positively influence treatment; therefore, it is important to understand the vectors and forces involved to avoid unwanted movements.

- It is also crucial that the patient is cooperative and compliant with their placement. A clear and precise explanation of their advantages can speed treatment development. It is worth clarifying that when there is improper use or lack of compliance on the part of the patient.

- With this in mind, it is convenient to use elastics from the first archwire because there is the greatest tendency for the teeth to move, and the treatment can benefit from this.

Home Message

Tow important points need to keep in mind:

In viewing these cases, please note that great care has been given to use treatment forces that are just high enough to stimulate cellular activity without overpowering the periodontium and orofacial muscular complex (Using light elastics).

Early correction is also facilitated by disarticulation. By removing the occlusal forces on posterior teeth, greater freedom for anterio-posterior movement and lateral expression will be achieved.

Thank you