



ครั้งที่ 29 (8.2)
Self Ligation

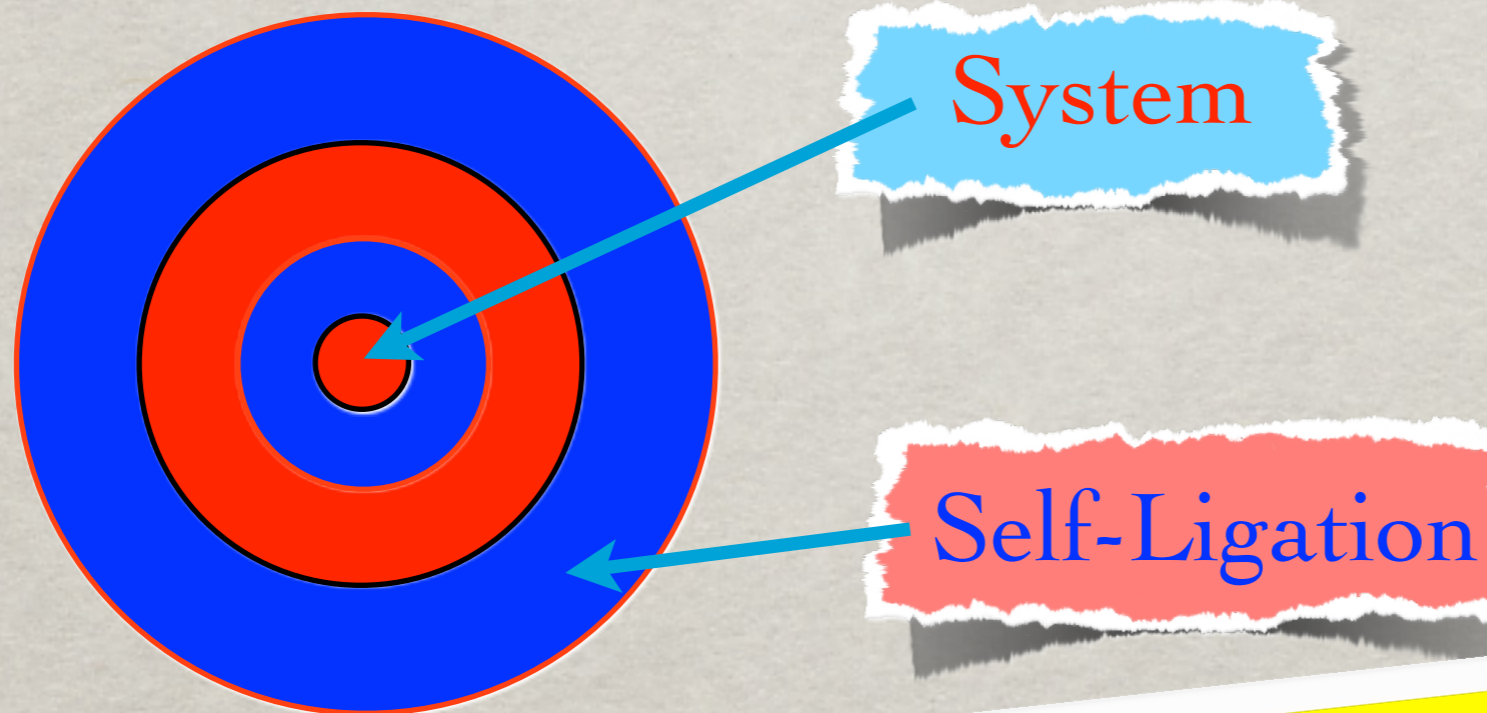


DWIGHT H. DAMON

DAMON'S SYSTEM

DAMON'S SYSTEM

NOT JUST BRACKET



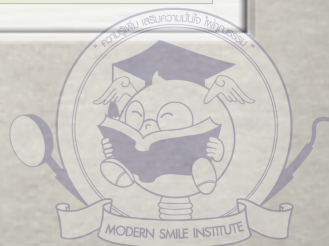
Damon bracket is self-ligation bracket that just act passively like a tube

Damon's System Philosophy

A malocclusion is a functional abnormality

“Form Follows Function”

Biologically induced, tooth-moving forces in each phase of orthodontic treatment, achieving the best possible facial balance by the use of light forces that foster corrective functional adaptation of the arch form for each patient.



Damon bracket


Damon System

The DAMON System

Passive ligation bracket, Friction-free, Self locking, Fixed- appliances, High-tech arch wires & sequence, Torque selection, Unlock the malocclusion, Damon arch form, Light force mechanic, Short Early Light Elastic, Bracket placement & position, Appointment interval, Sagittal relationship corrections via inter-maxillary forces , Retention and so on



The goal of the DAMON system

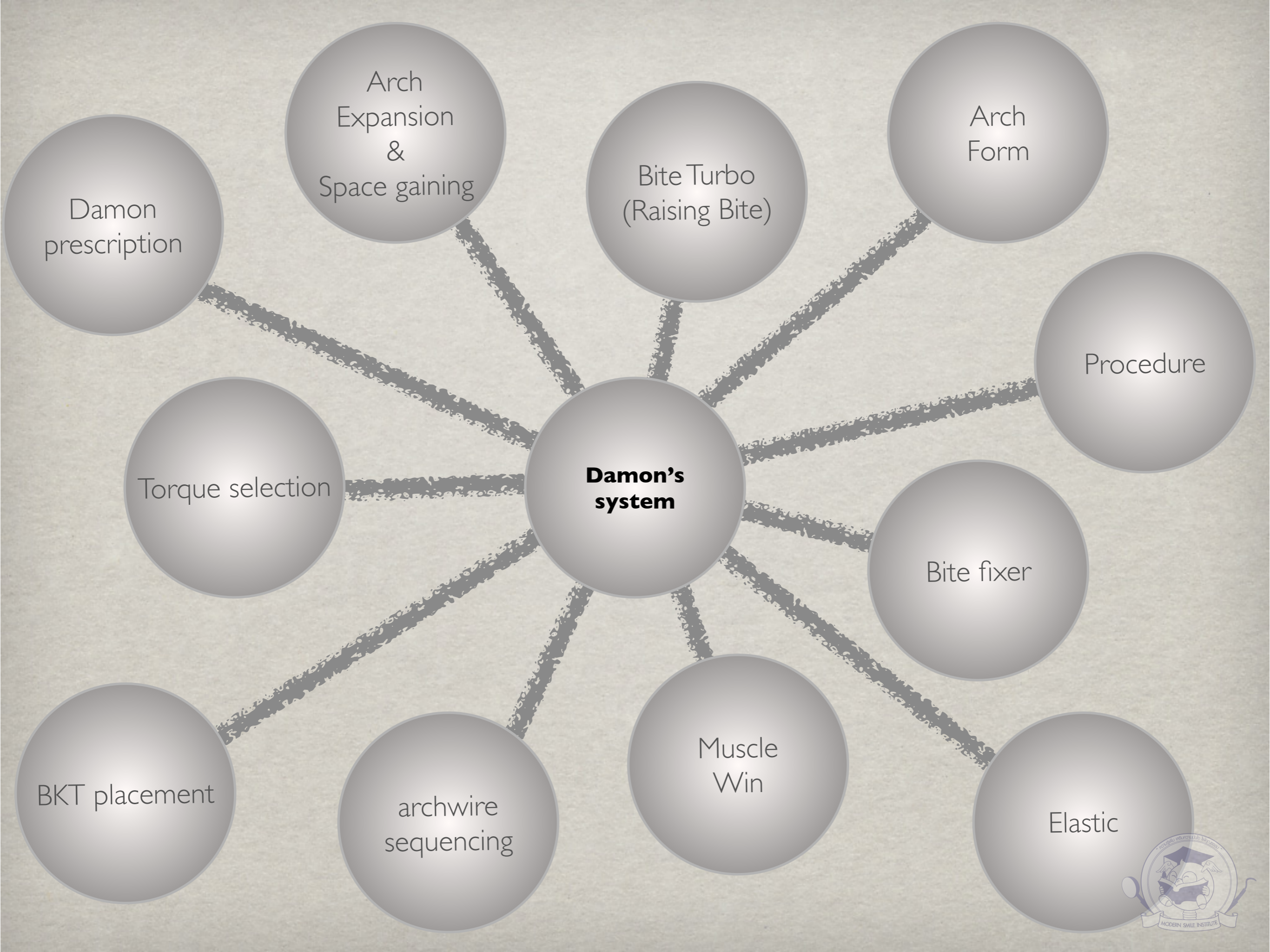


THE BEST POSSIBLE FACIAL
BALANCE FOR EACH PATIENT BY
THE USE OF LIGHT FORCES THAT
FOSTER CORRECTIVE FUNCTIONAL
ADAPTATION OF THE ARCH FORM

Damon System Principle



- Treatment planning must be facially based.
- Unlock the malocclusion
- Short early light elastics for early inter-arch correction
- Do not allow the orthodontic forces to overpower the biological system during any treatment phase.
- The aim of the Ni-Ti phases of treatment is not only to level and align but also to **reshape** the arch form specific to each individual patient through functional adaptation.
- Complete leveling, alignment and rotational control require **full-depth** rectangular arch wires.
- The Working/Final Phase of treatment requires rigid wires.
- Sagittal relationship corrections are best carried out by functional adaptation achieved via **inter-maxillary forces** applied en masse.
- Retention requires careful consideration.



Arch Expansion & Space gaining

Bite Turbo (Raising Bite)

Arch Form

Procedure

Damon's system

Bite fixer

Elastic

Muscle Win

archwire sequencing

Torque selection

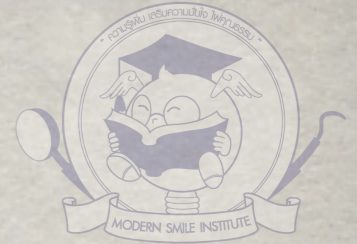
BKT placement

Damon prescription



**Damon's
system**

Principle #1



**TREATMENT PLANNING MUST BE
FACIALLY BASED.**



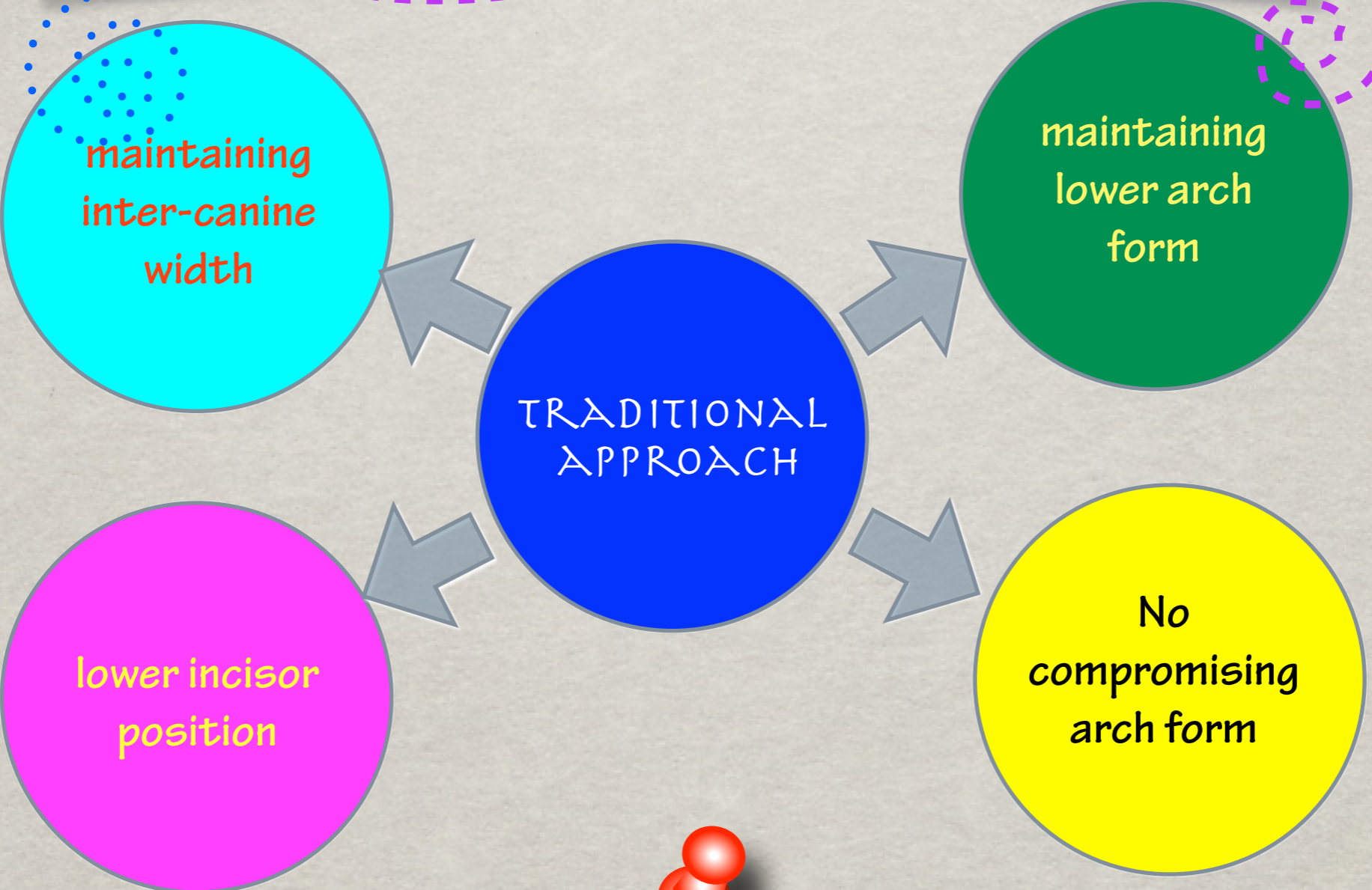
**Facially driven treatment plan to
achieve facial harmony**

**Damon's
system**

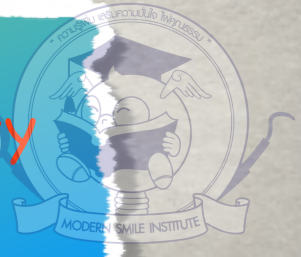
Principle #2

ARCH EXPANSION

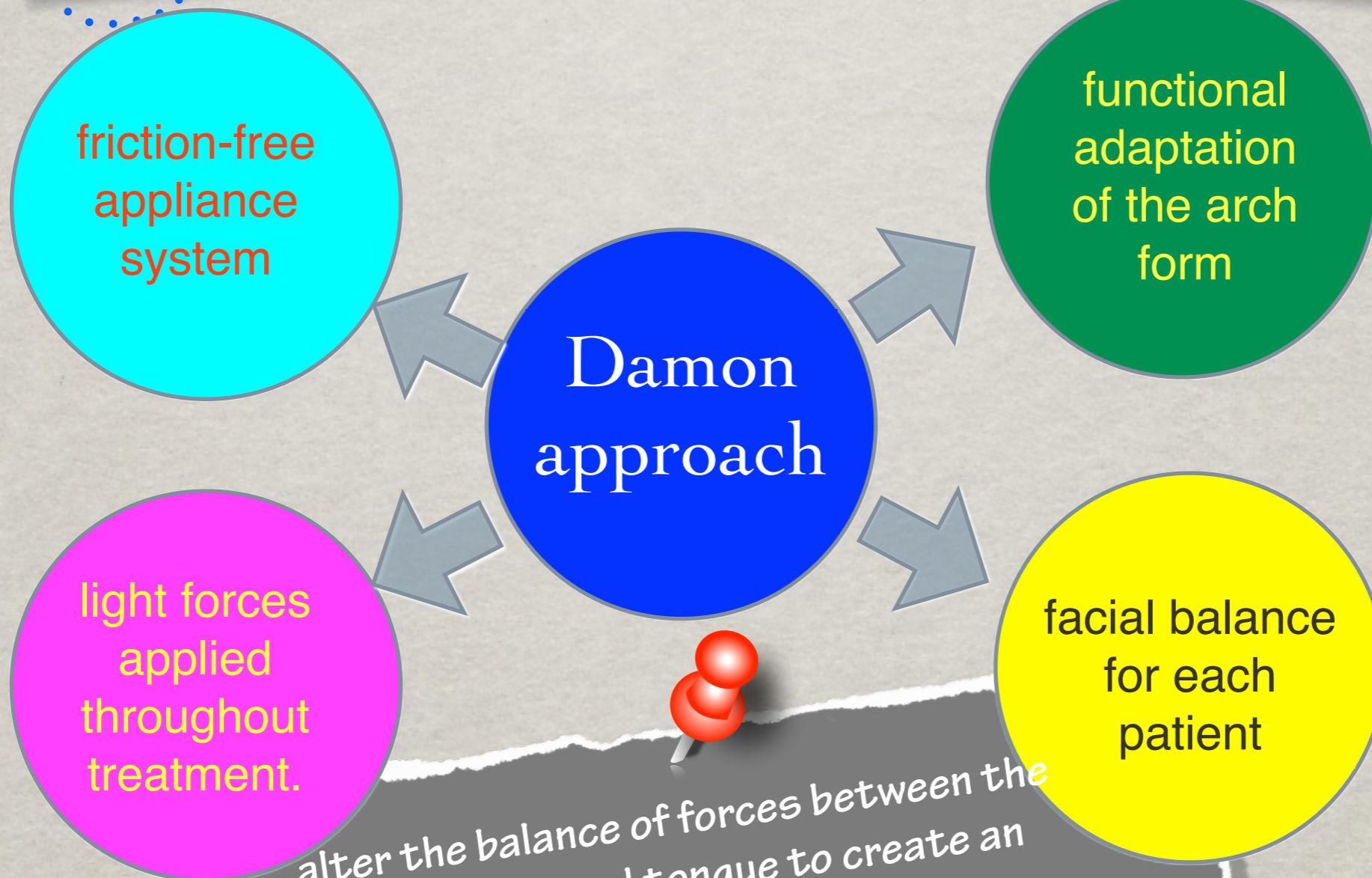
Traditional Treatment Plan & Arch Form



Ricketts approach with lower incisor position being dictated by intermaxillary relationships(compromised approach).



Damon System Treatment Plan & Arch Form



alter the balance of forces between the lips, cheeks and tongue to create an adaptive arch form within a new force equilibrium

Traditional treatment plan for Arch Expansion

Arch expansion is only allowable
for cross-bite correction





Several tools have been used for
expansion **traditionally**

Quad helix

Expansion plate

Trans palatal arch (TPA)

Lingual Holding Arch

Frankel FA

Surgery

Rapid Palatal Expansion (RPE)





Rapid Palatal Expansion (RPE)



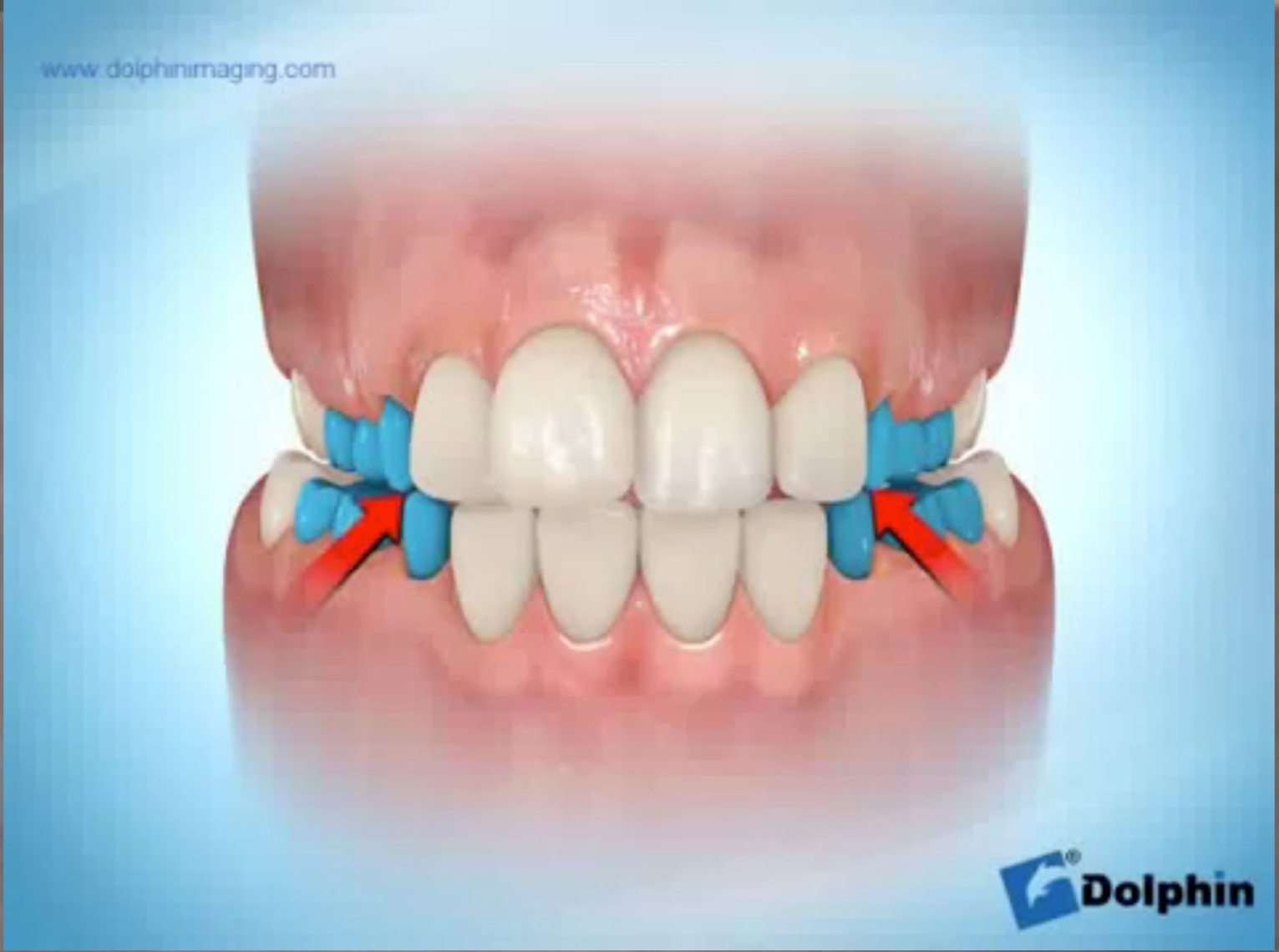
IPAD 5

RPE



IPAD 5

Bonded RPE



IPAD 5

T-RexRPE



IPAD 5

Pendex



Schwartz App

IPAD 5



Powered by Ortho2





Trans palatal arch (TPA)

Lingual Holding Arch



TPA



menu



htc



Lingual Holding Arch

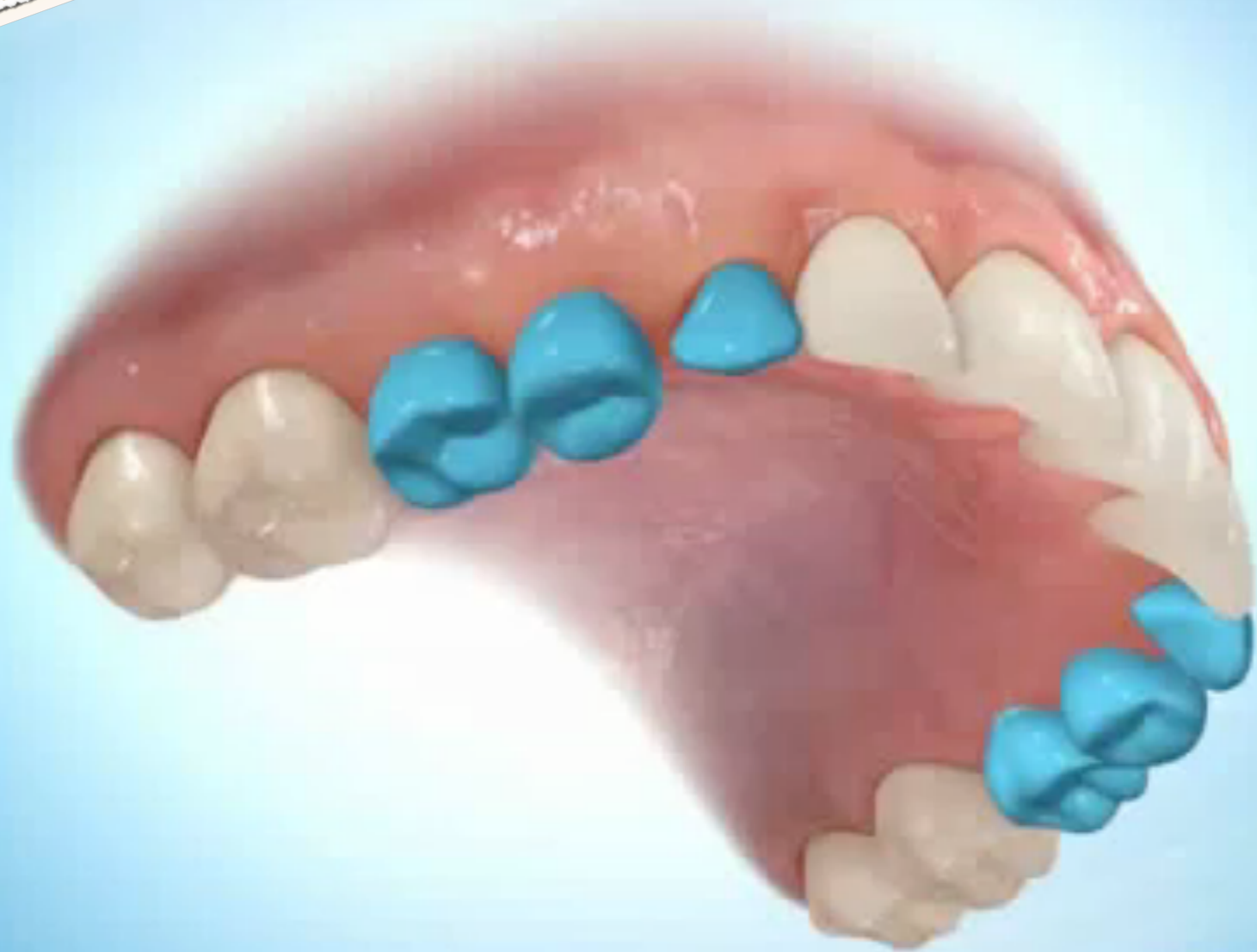


menu

htc



Upper Holding Arch
(Nance's)



menu

htc







Frankel FA





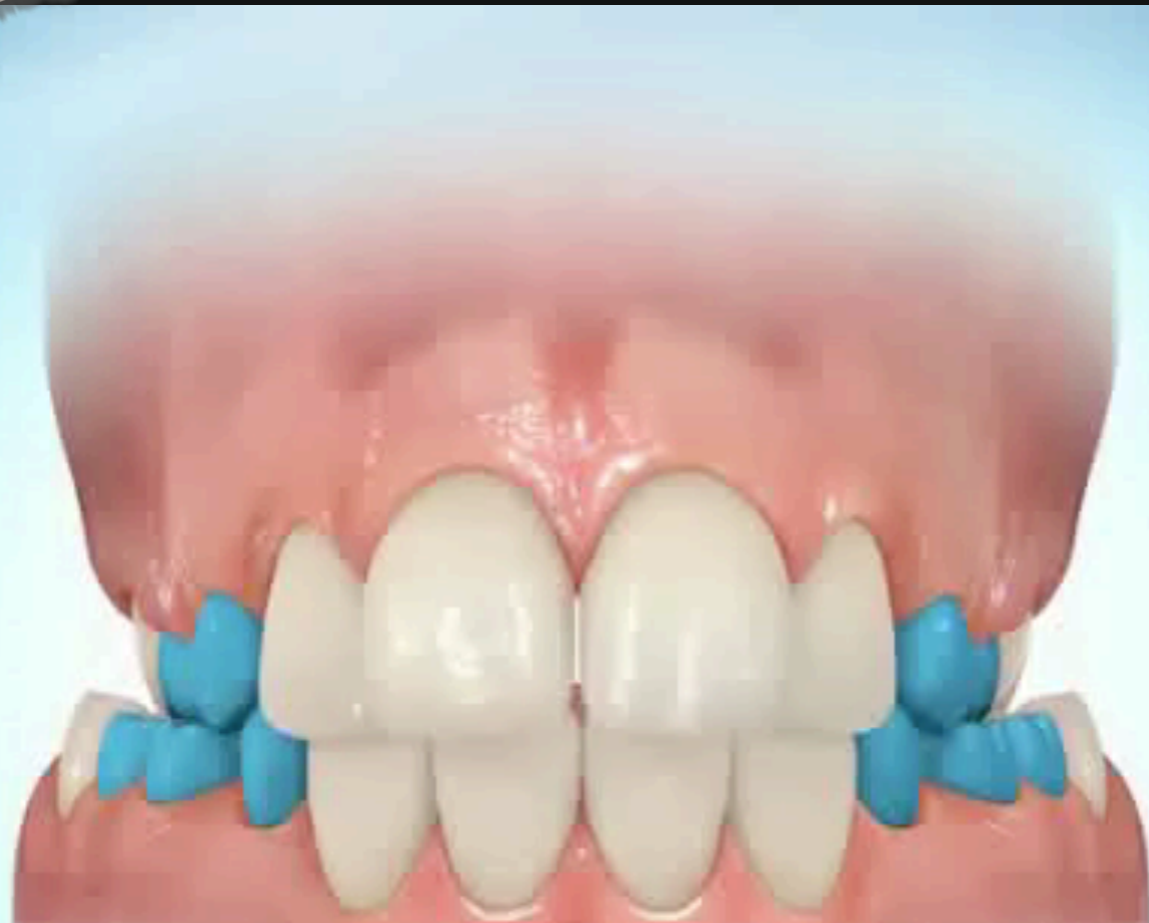
Quad helix



Quad helix Appliance



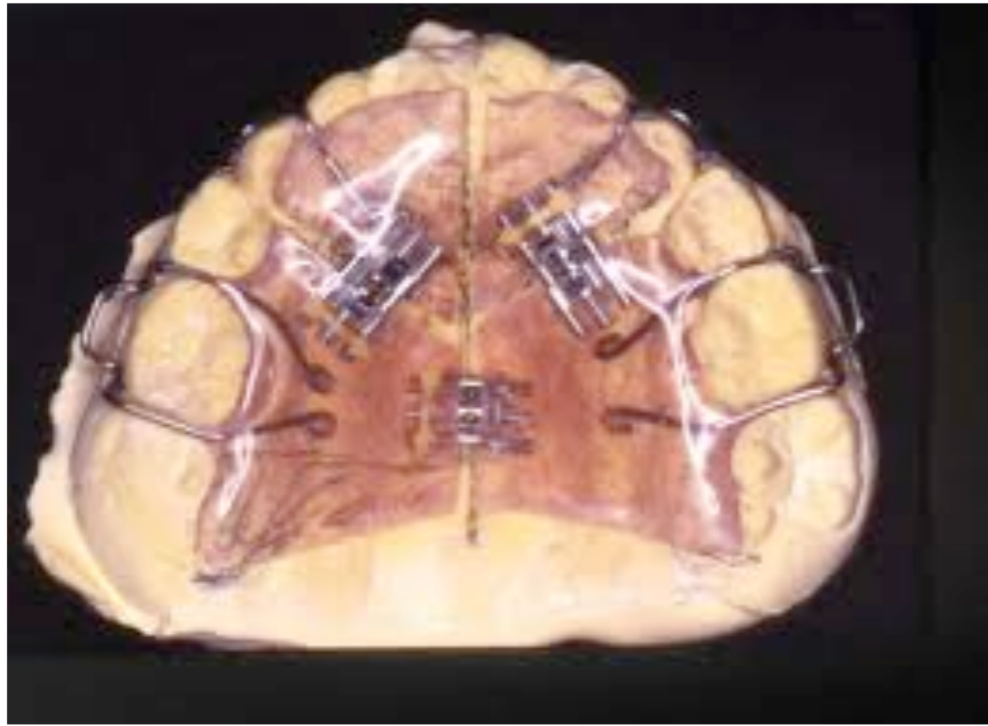
Quad helix



menu



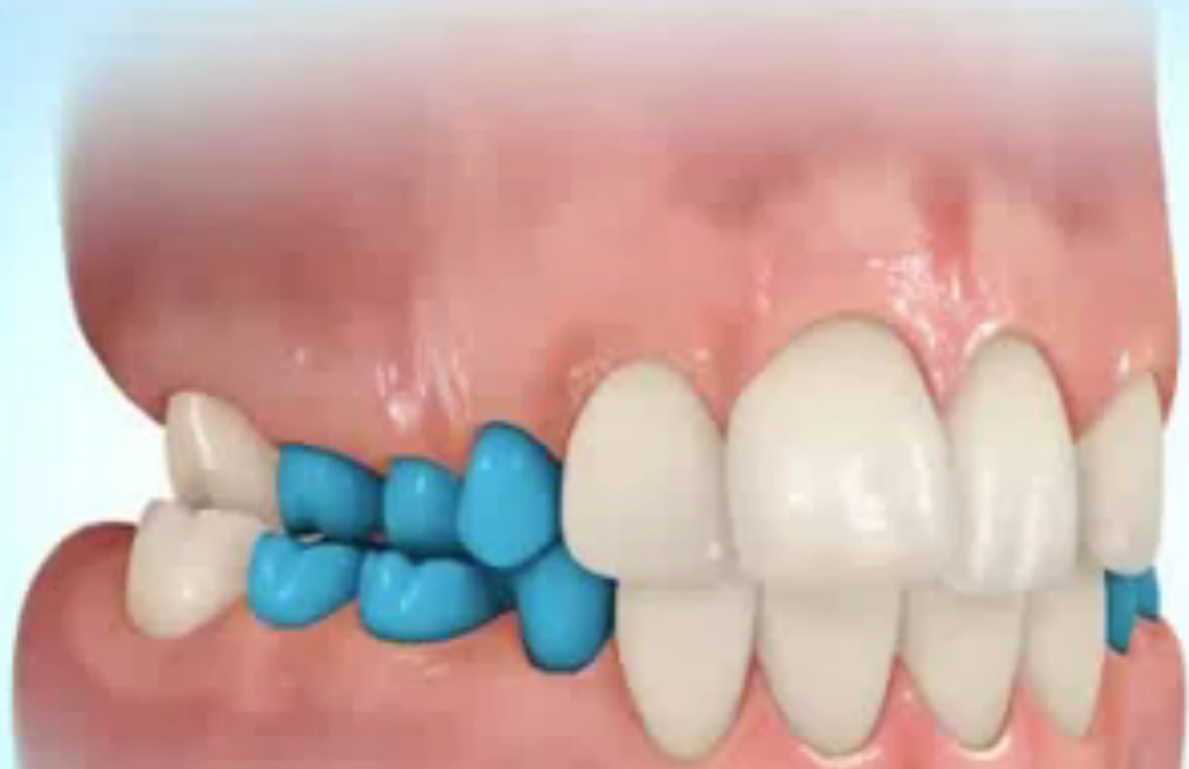
htc



Expansion plate



U/- Removable with
Expansion Screw



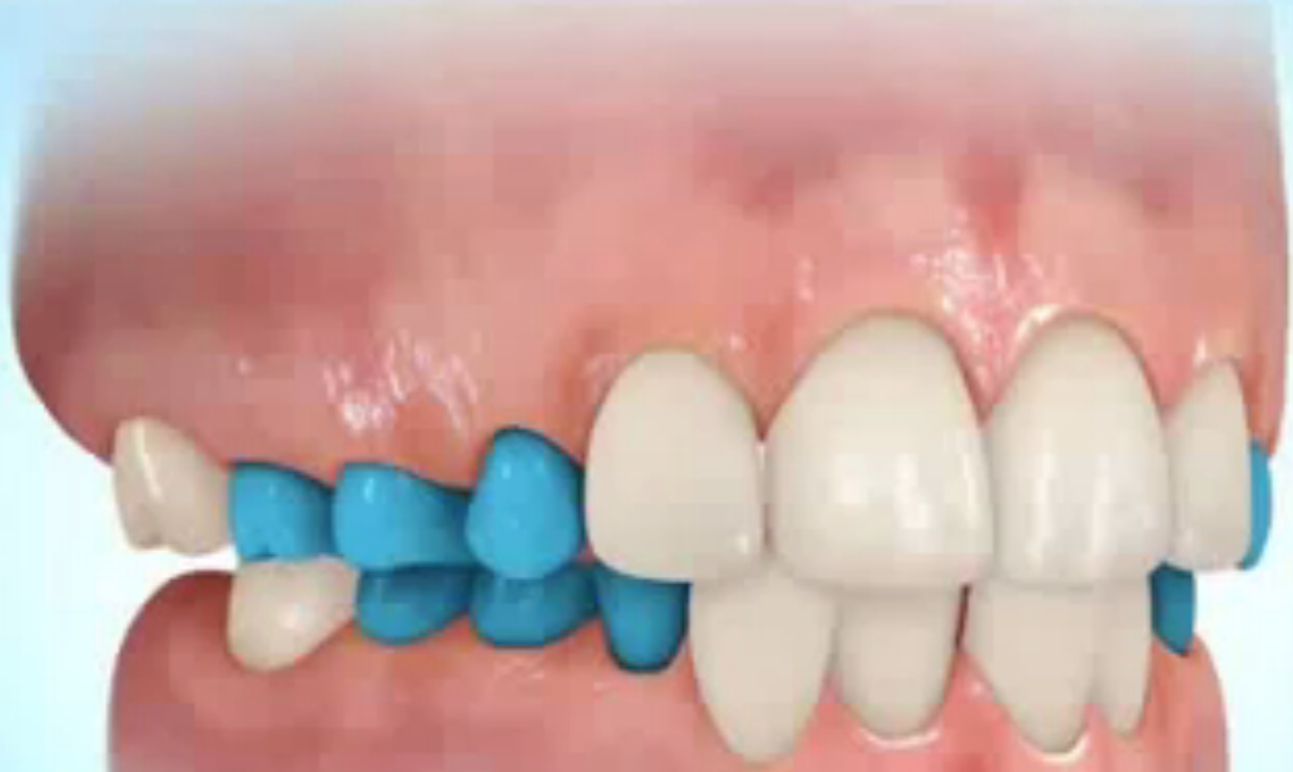
menu



htc

-/L Removable with
Expansion Screw

dolphinimaging.com



menu



htc

-/L Fixed with Expansion
Screw

dolphinimaging.com



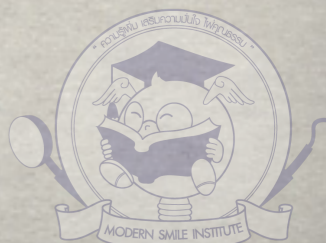
menu

htc



The amount of force of conventional expanders

overload the periodontal interface between teeth and
alveolar bone,
negating the functional adaptation



Adaptation Expansion

Vs

Conventional Expansion

Conventional Expansion

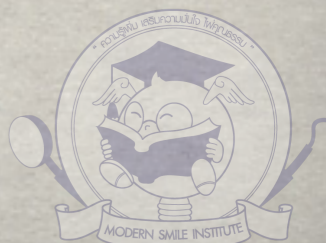
The
force

*rigid wires
/ expanders*

PDL

**Undermining
Resorption**

**No
functional
adaptation**



Adaptation Expansion

Vs

Conventional Expansion

Adaptation Expansion

**light
force**

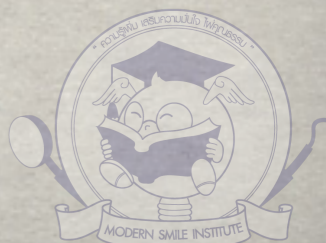
**light wires
& Self ligation**

PDL

**frontal
Resorption**

**functional
adaptation**

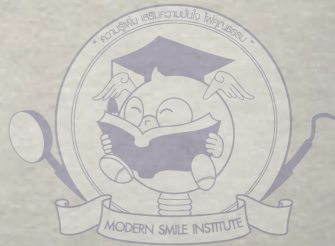
“physiologically determined tooth position”



Damon
system

Conventional
system

Space
Gaining



Space Gaining in Conventional system

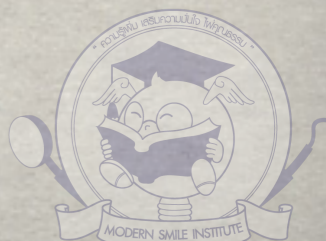
The treatment plan to gain space **without** the original arch form **disturbance** and not to harm the cortical bone and tissue around (**AP Plane**).

Head Gear, Lip bumper, TAD

Removable Plate(Pendulum)

Interproximal Reduction (IPR)

Extraction



Removable Plate (Pendulum)



Fixed Pendulum



menu

htc



Space Gaining in Damon system

Physiologically arch form adaptation (Arch Expansion)



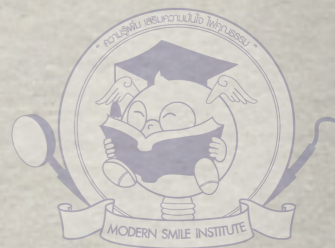
Inter-proximal Reduction (IPR)



TAD



Extraction




Extraction will be done for the **face**
not for the **space**



How to gain space in
the **DAMON** system?

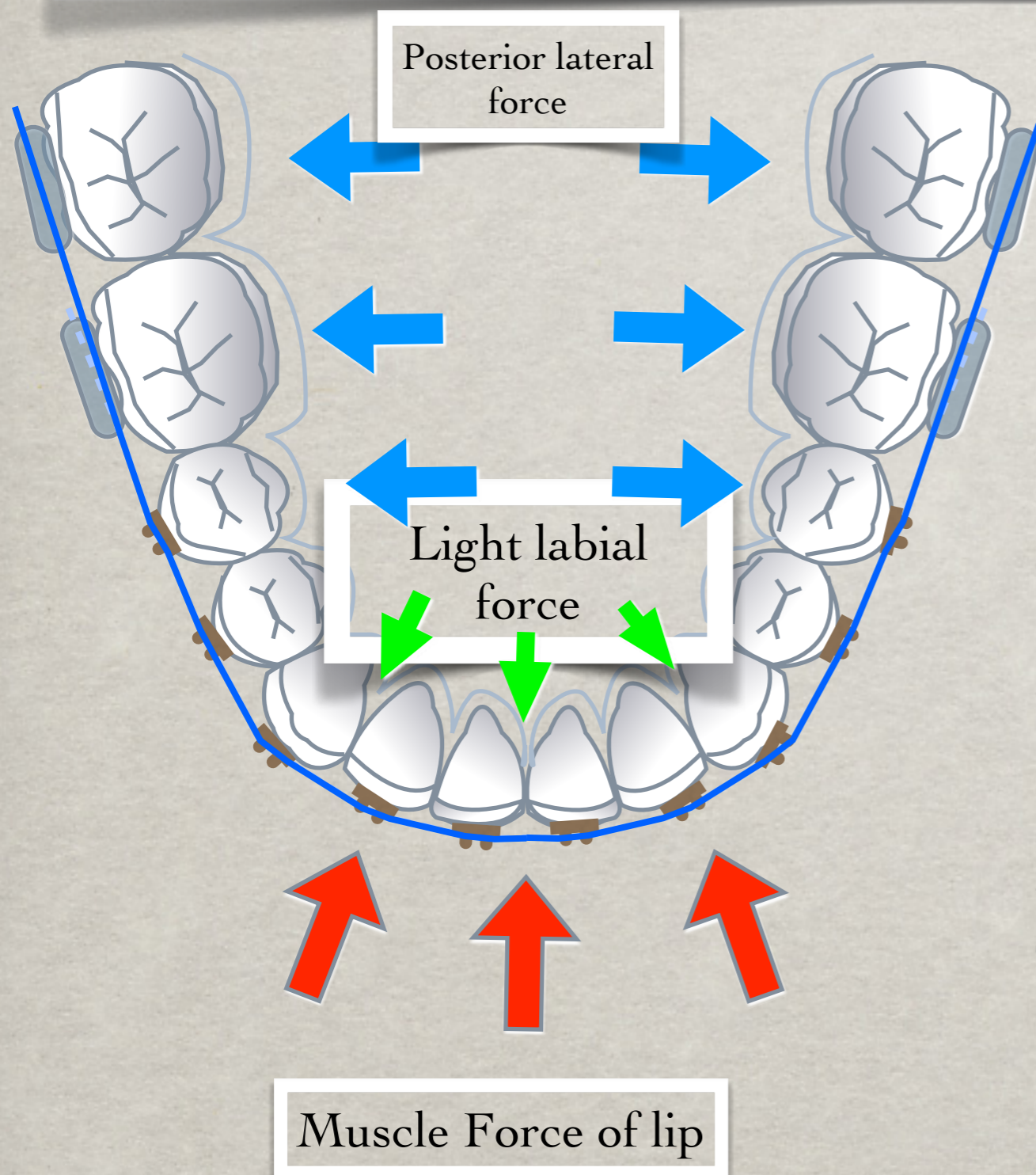




The arch spaces will be mainly gained
by arch adaptation (Expansion)
physiologically from premolar area
back to molar area



DAMON SYSTEM TREATMENT PLAN FOR EXPANSION

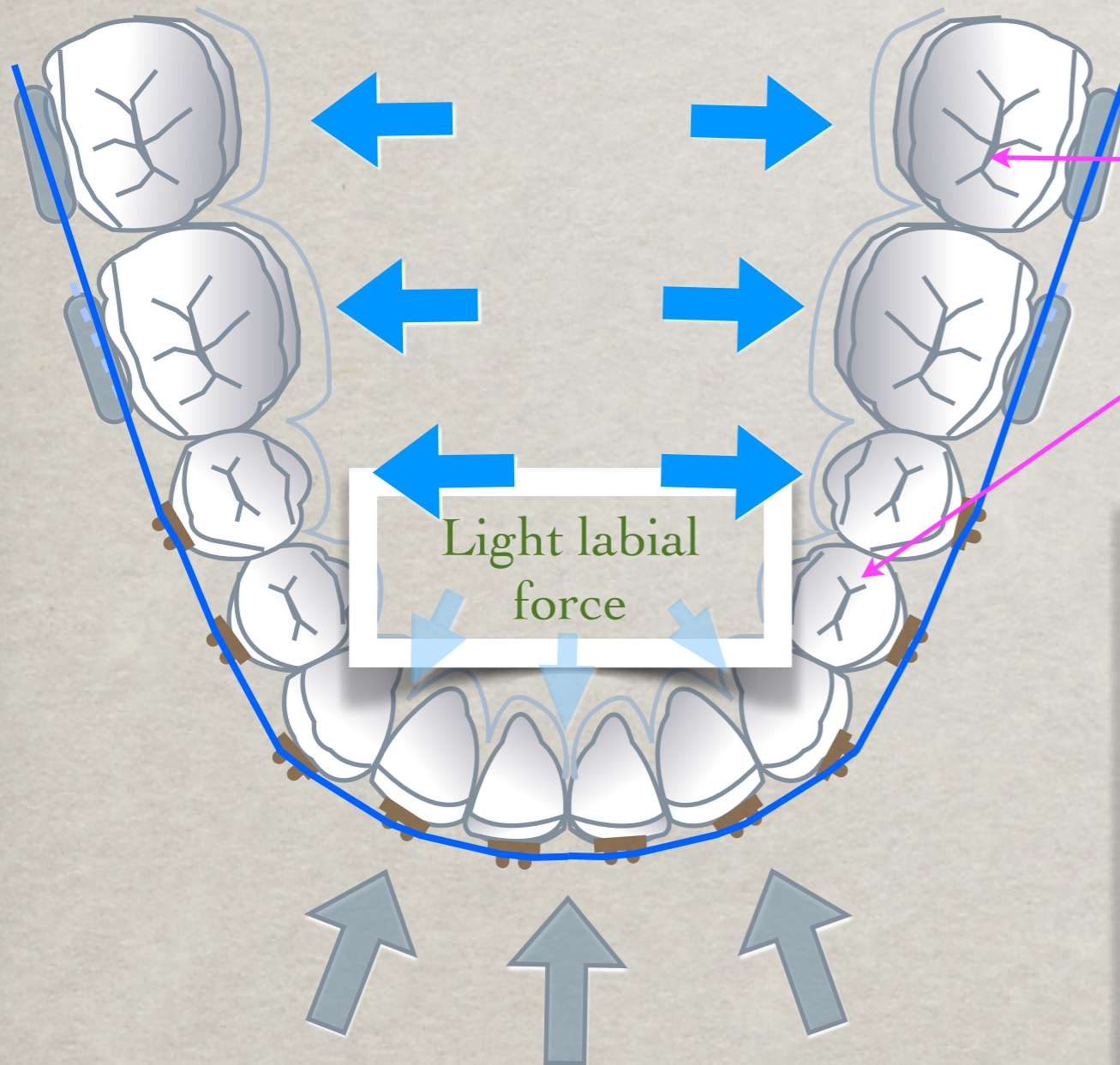


The very Light forces that are great enough to move posterior teeth laterally, creating alveolar bone with the movement, yet are still under the threshold that would overwhelm the lip musculature and push the anterior teeth unacceptably forward

HOW MUCH ARCH EXPANSION CAN BE DONE ?

the use of very light force, high-tech arch wires in passive tube can expand the posterior arch as much as physiologically functional adaptation of the body allow to do so, not clinician.

DAMON SYSTEM & EXPANSION



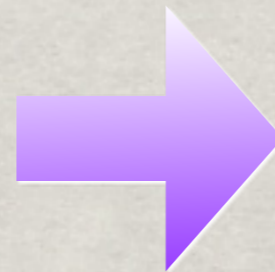
expands mainly in premolar and molar region, **no expansion force in canine region**

The force is directed posteriorly and expands mainly in premolar and molar region so called “Frankel effect”.

Muscle Force of lip

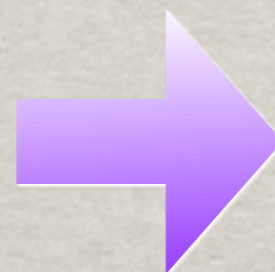
Inter canine width and arch expansion

Maintained
ICW



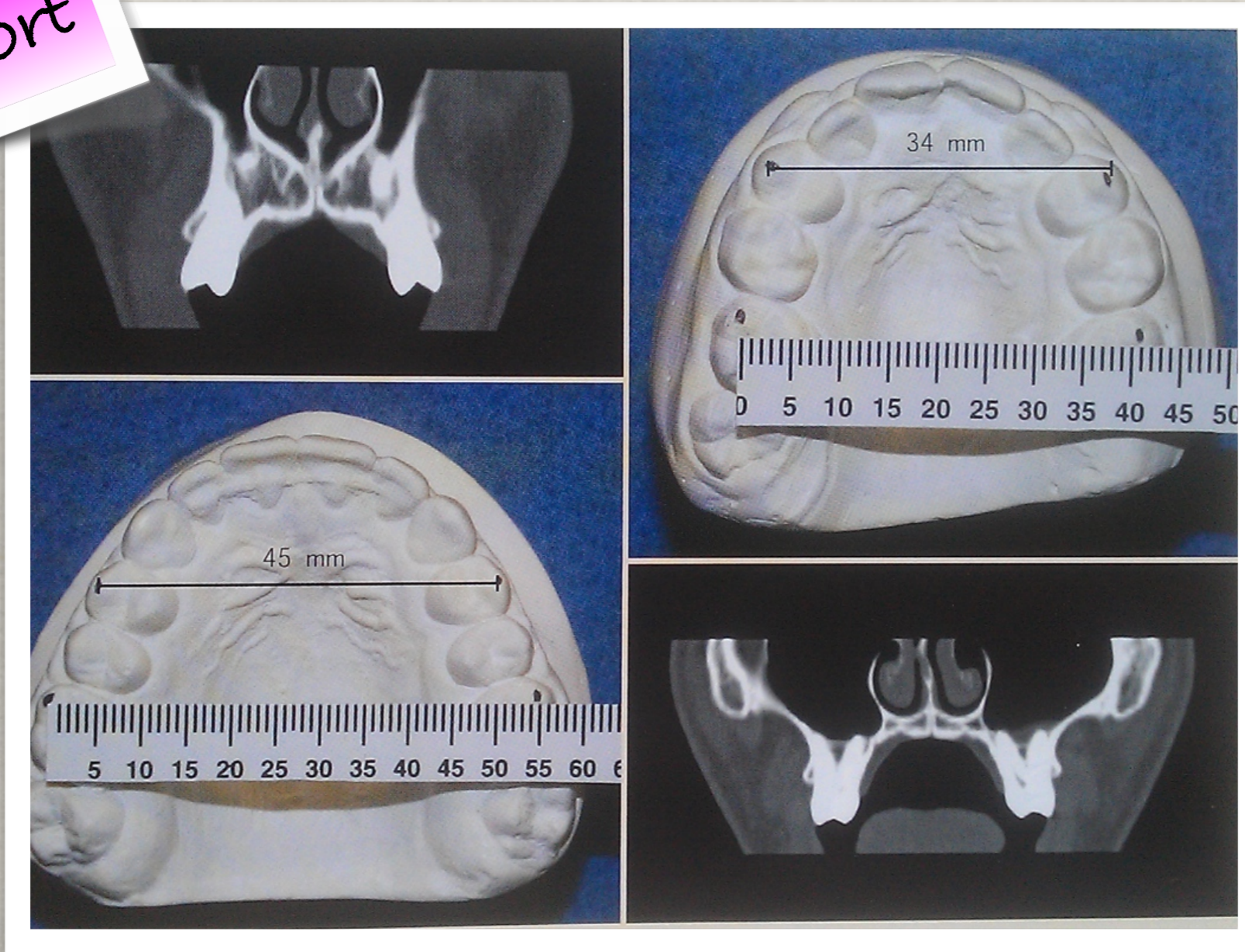
More
stability

Increased
ICW



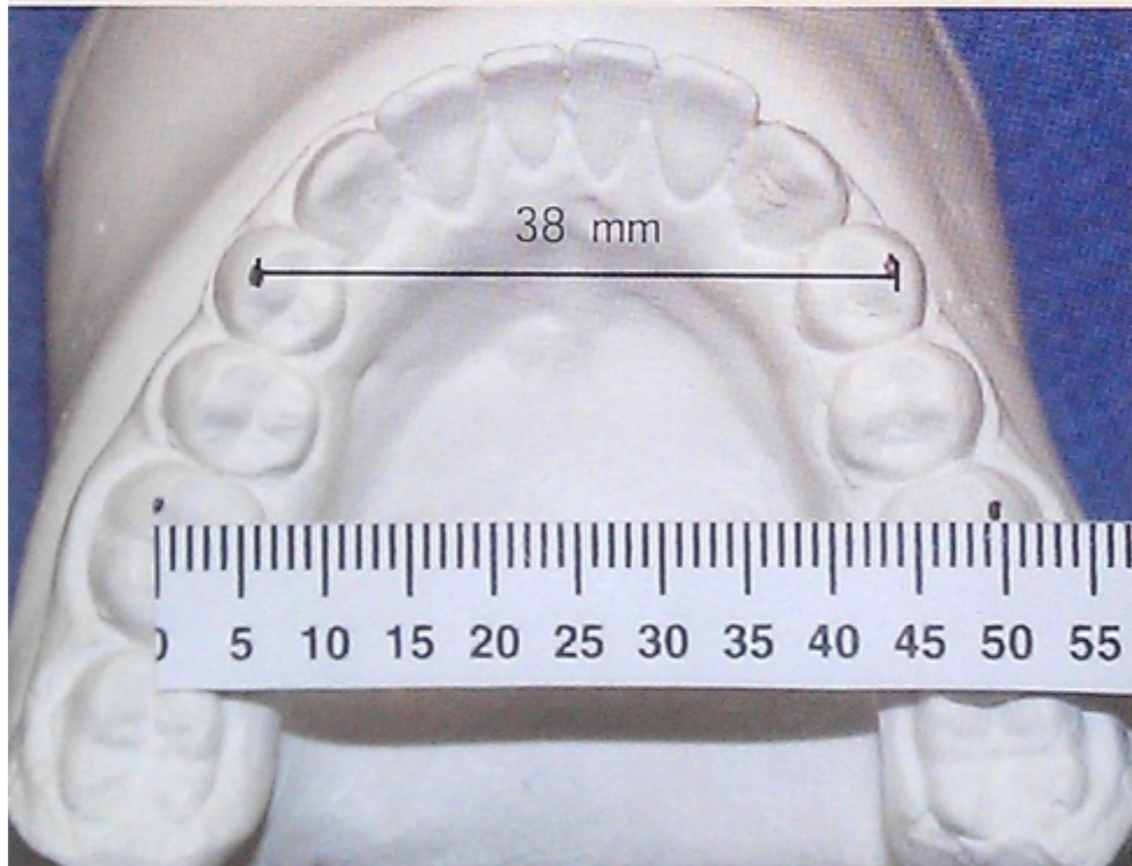
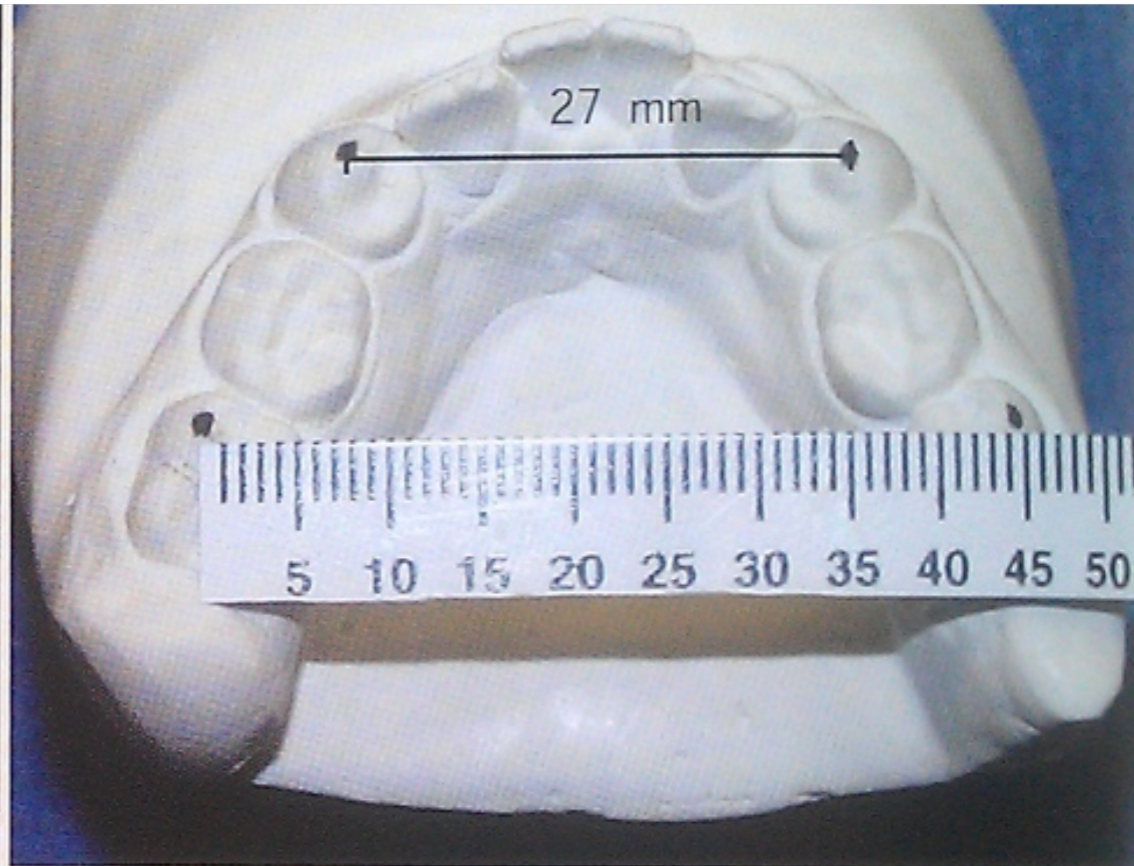
Uprighting
mandibular
canines

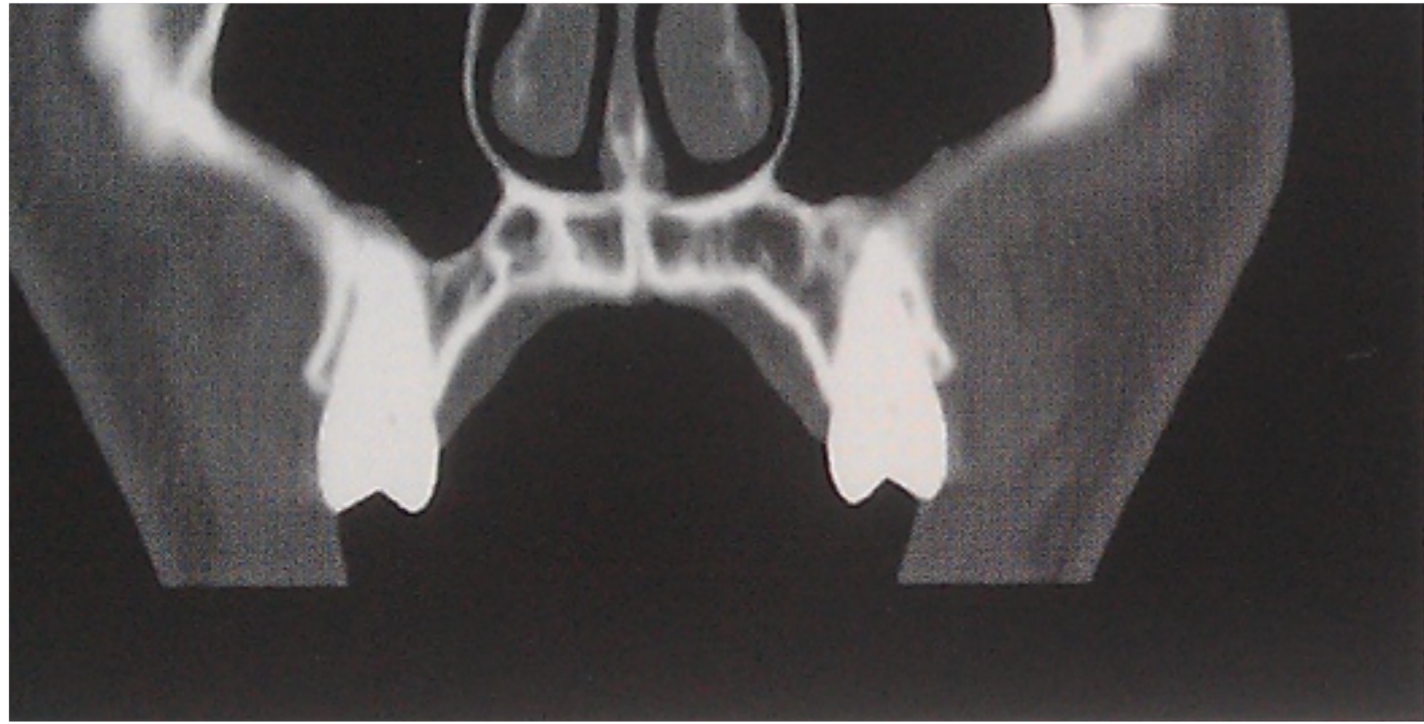
Case Report



Some recent studies have indicated that changing posterior arch form is both useful and stable by no ICW invasion.

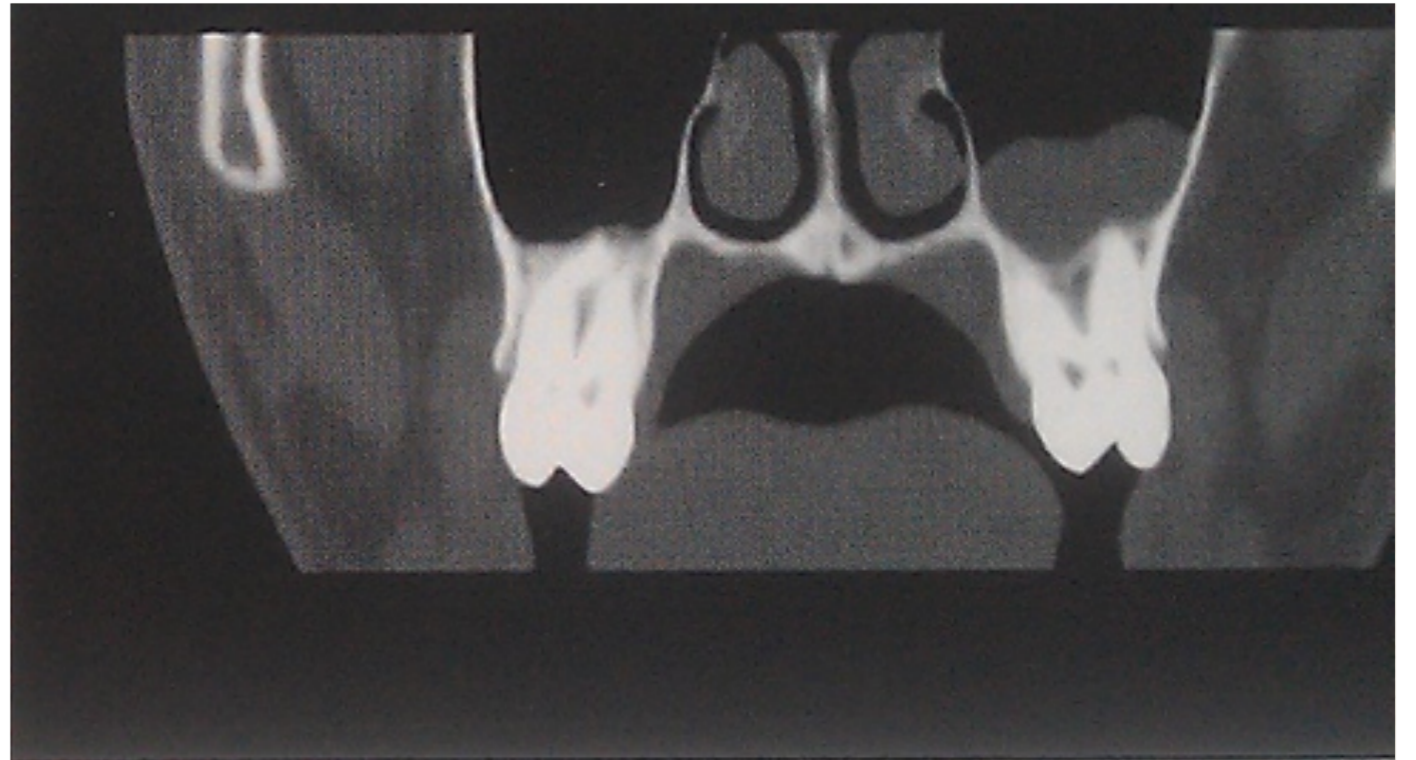
Case Report



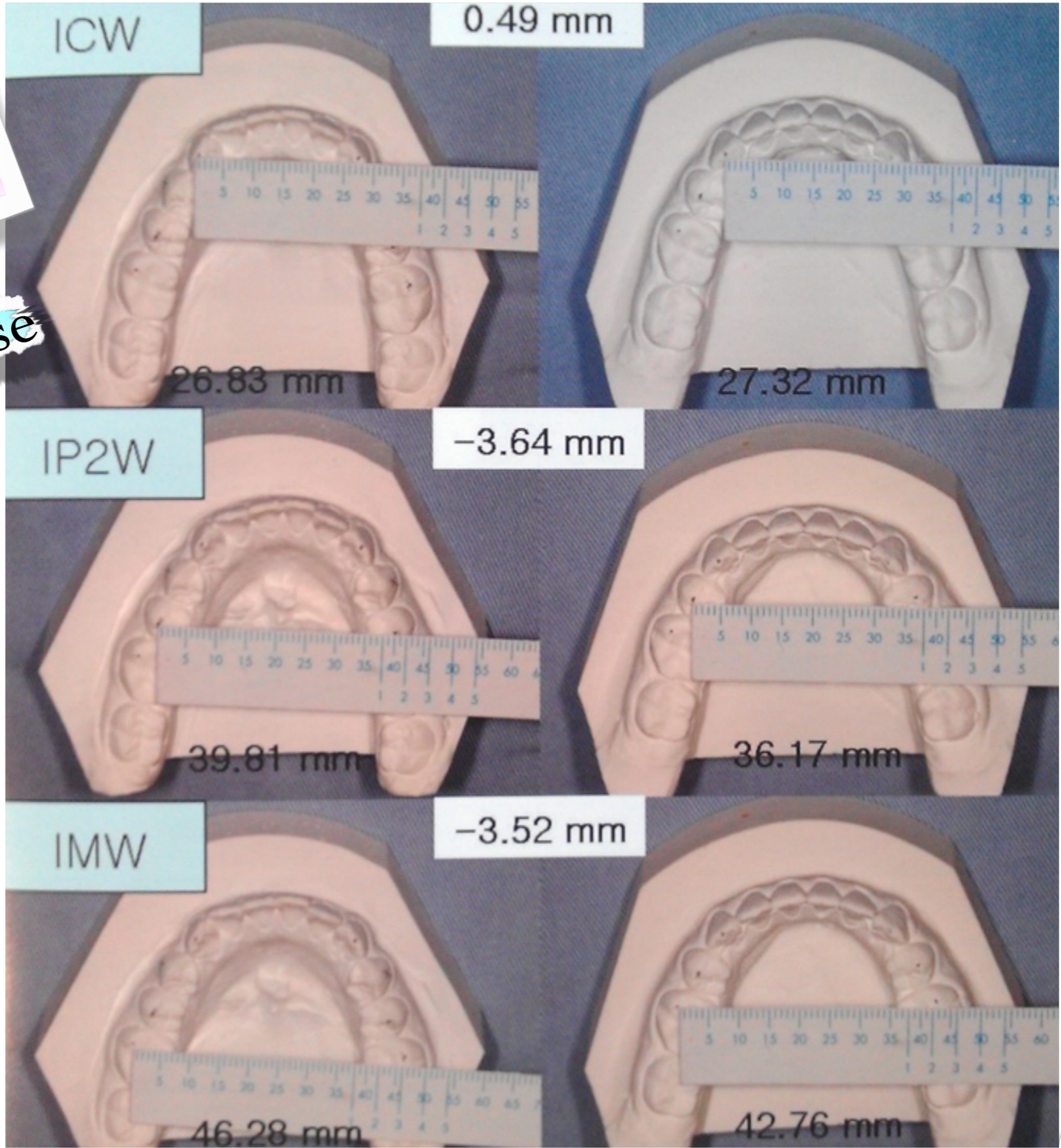


Case Report

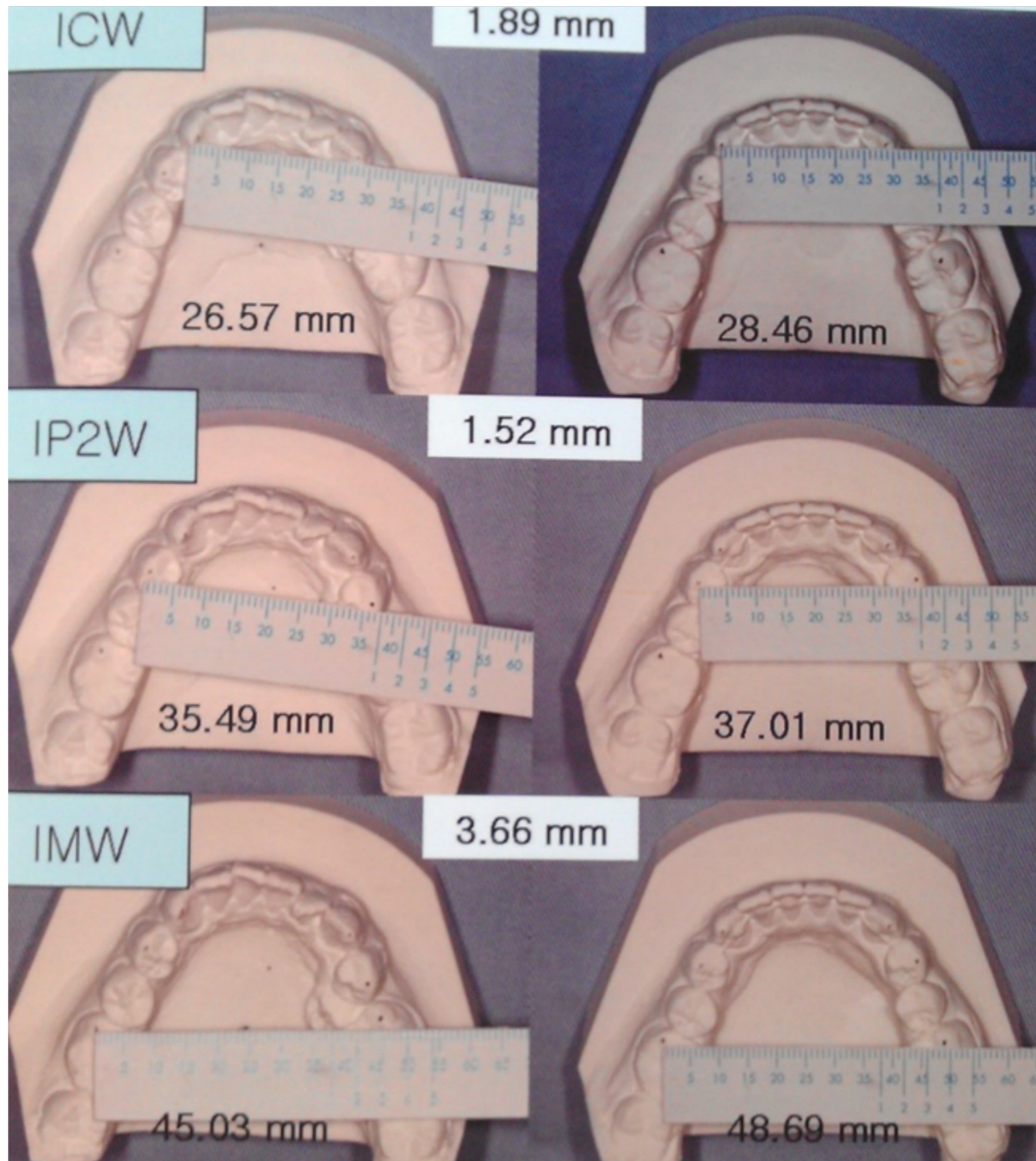
Retention for 5 yrs



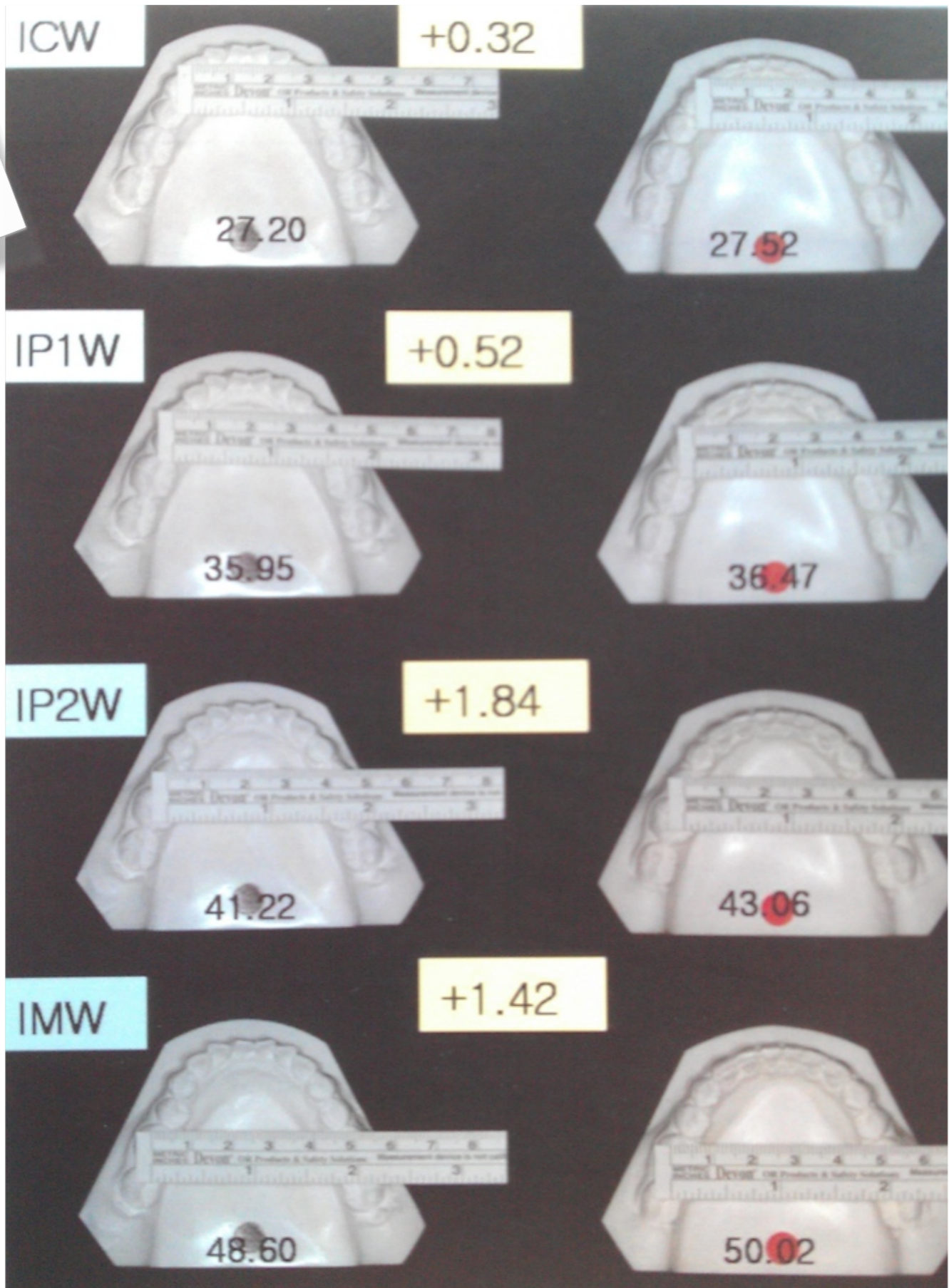
Case Report
Extraction case



Case Report

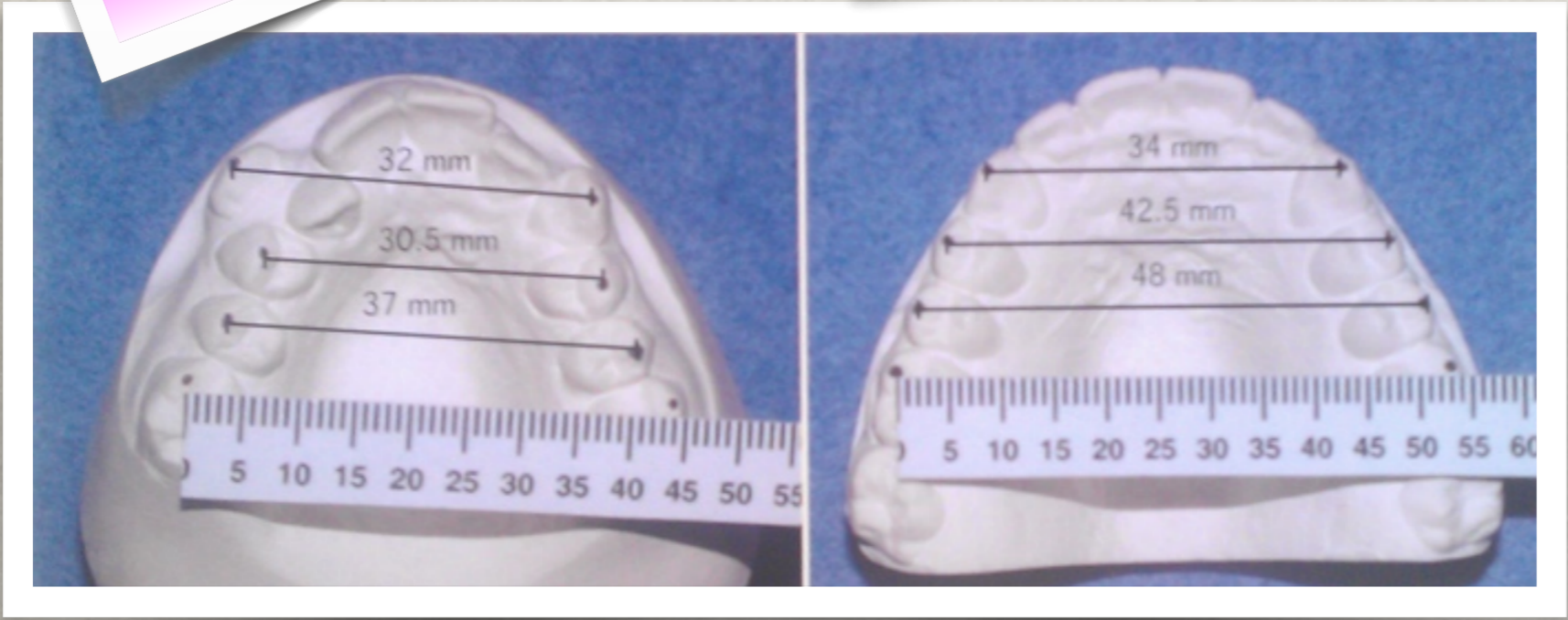
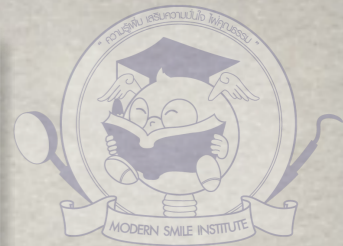


Case Report



Case Report

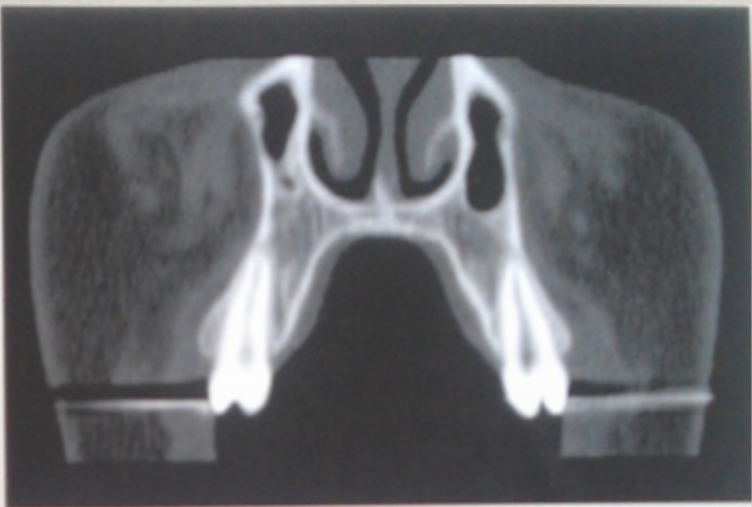
7 months of Retention



Upper arch



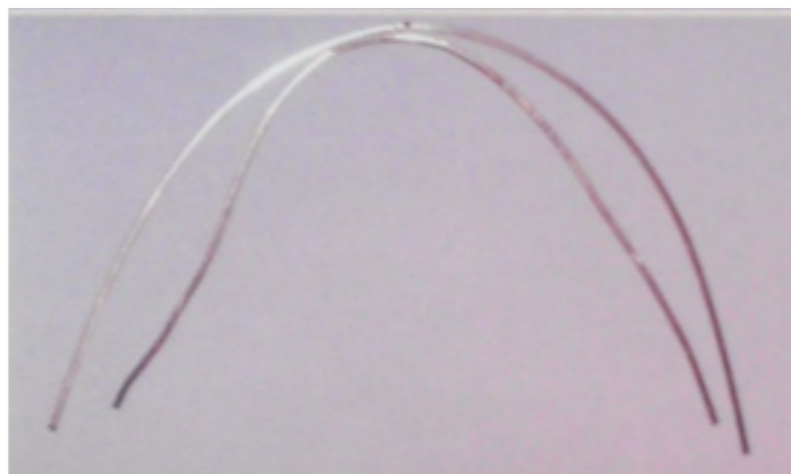
1st premolar



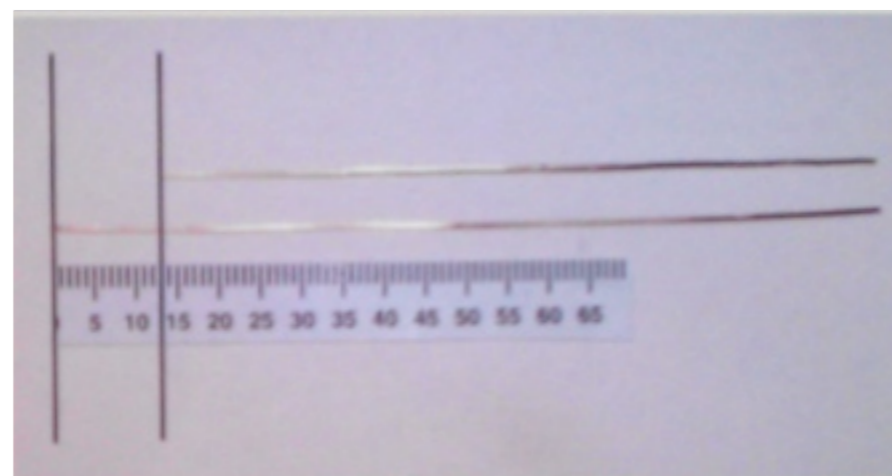
2nd premolar



1st molar

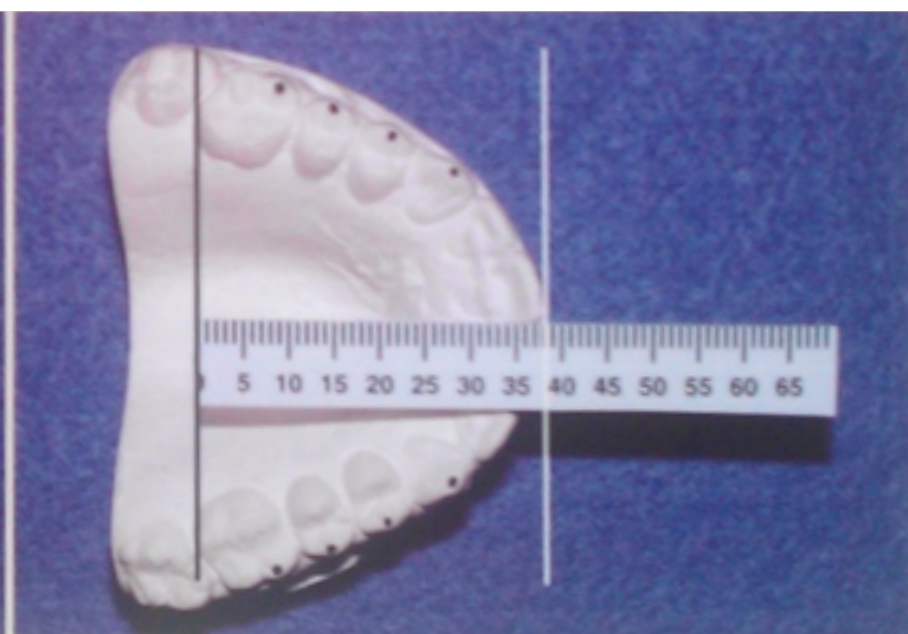
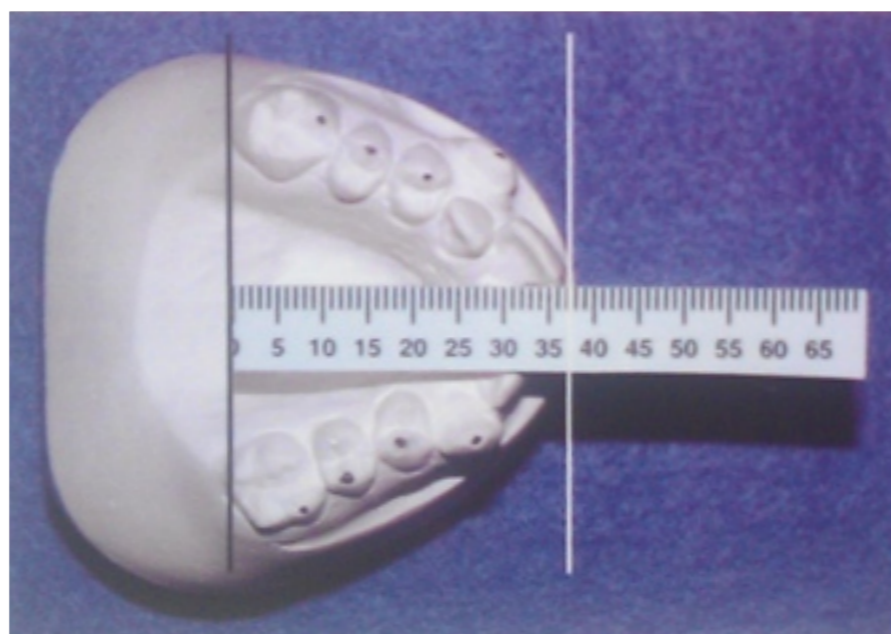


Case Report



13 mm.
space gaining

No anterior teeth
proclination



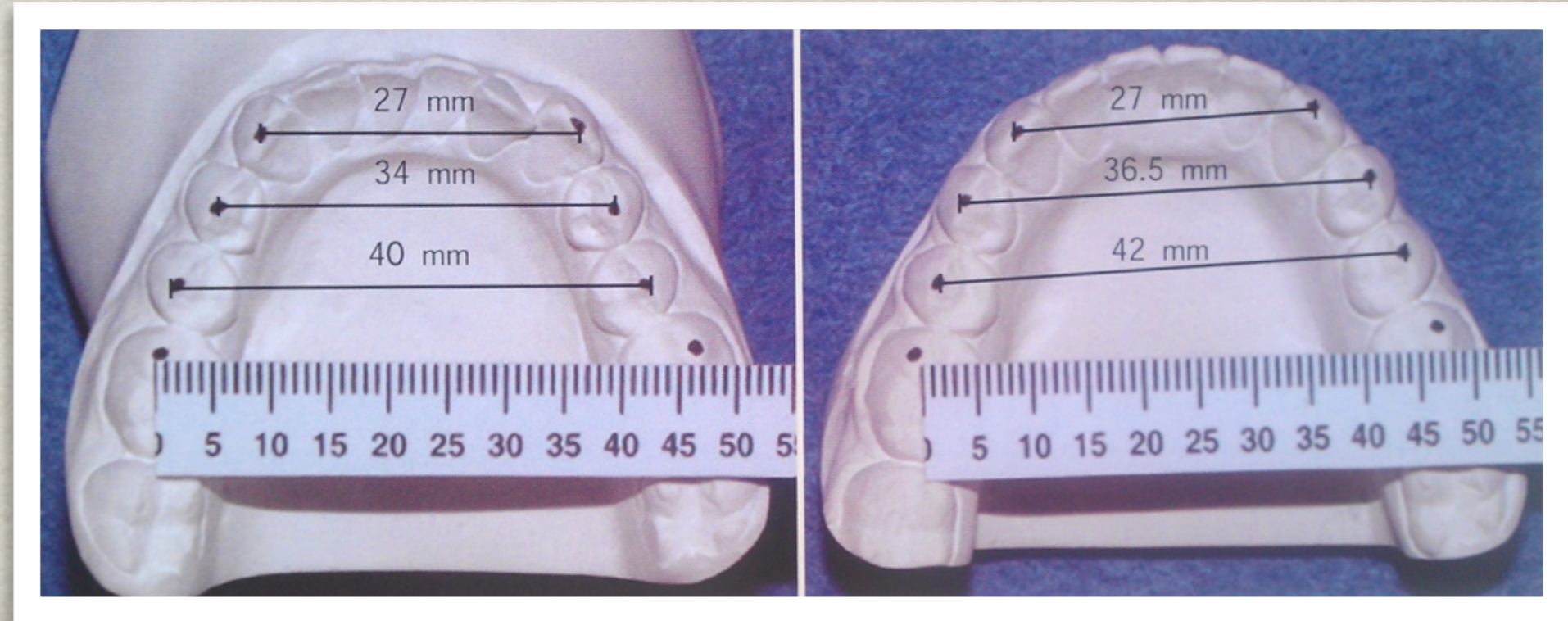


Upper

Case Report

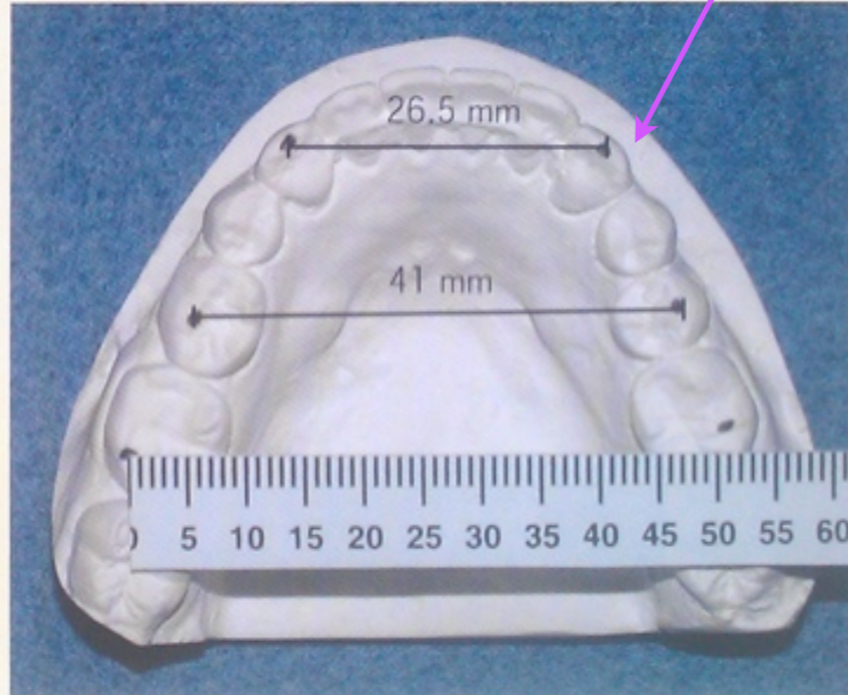
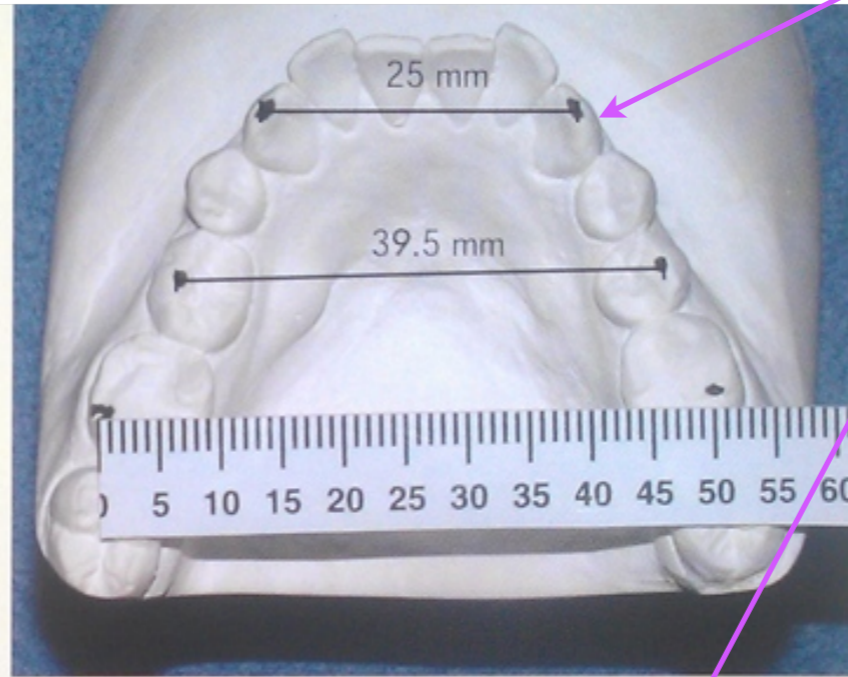


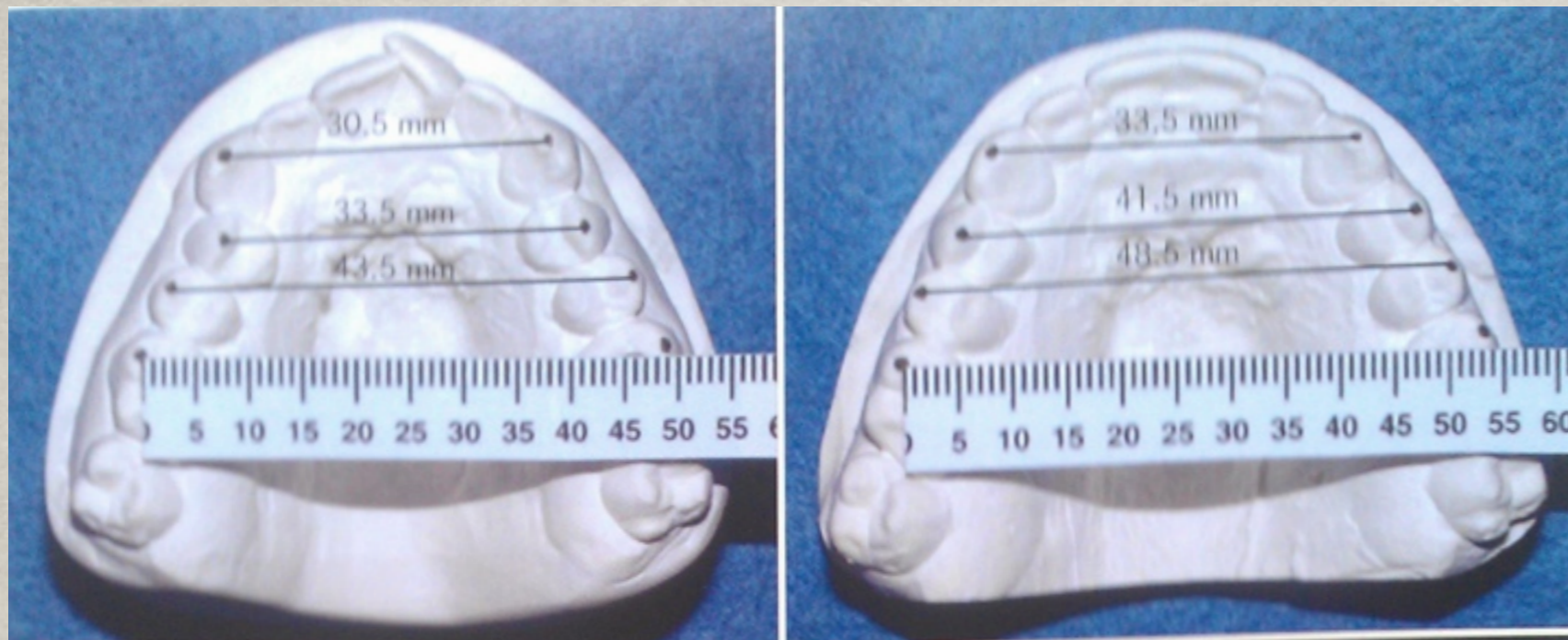
Lower



Case Report

Canine upright





At De-bonding Record

1st premolar



2nd premolar

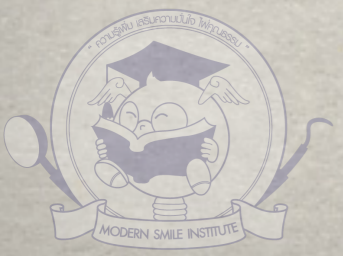
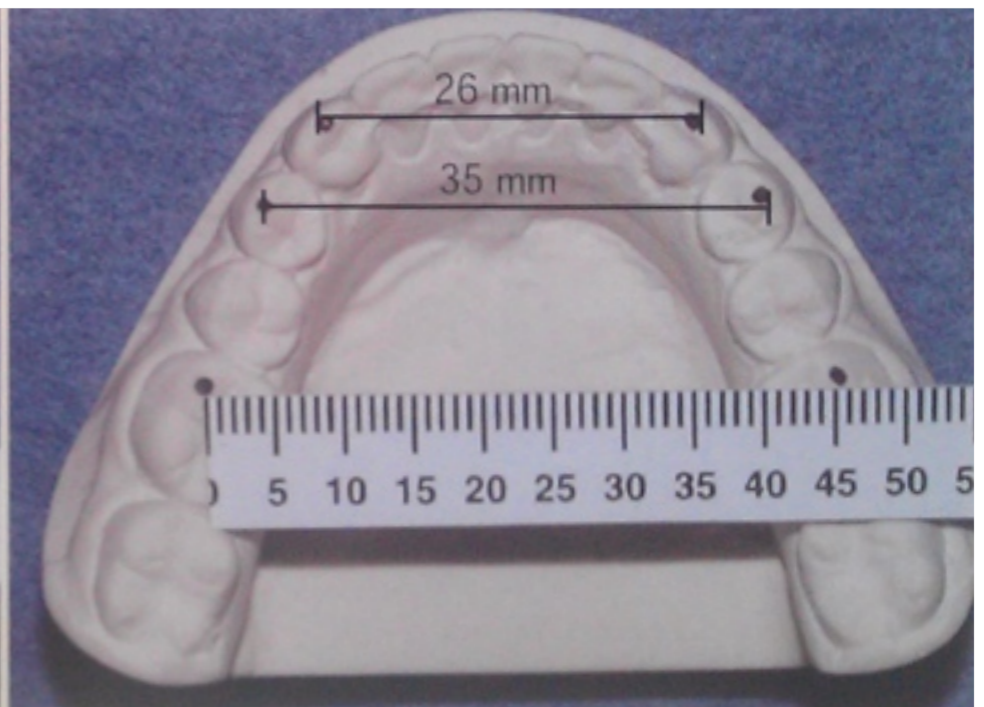
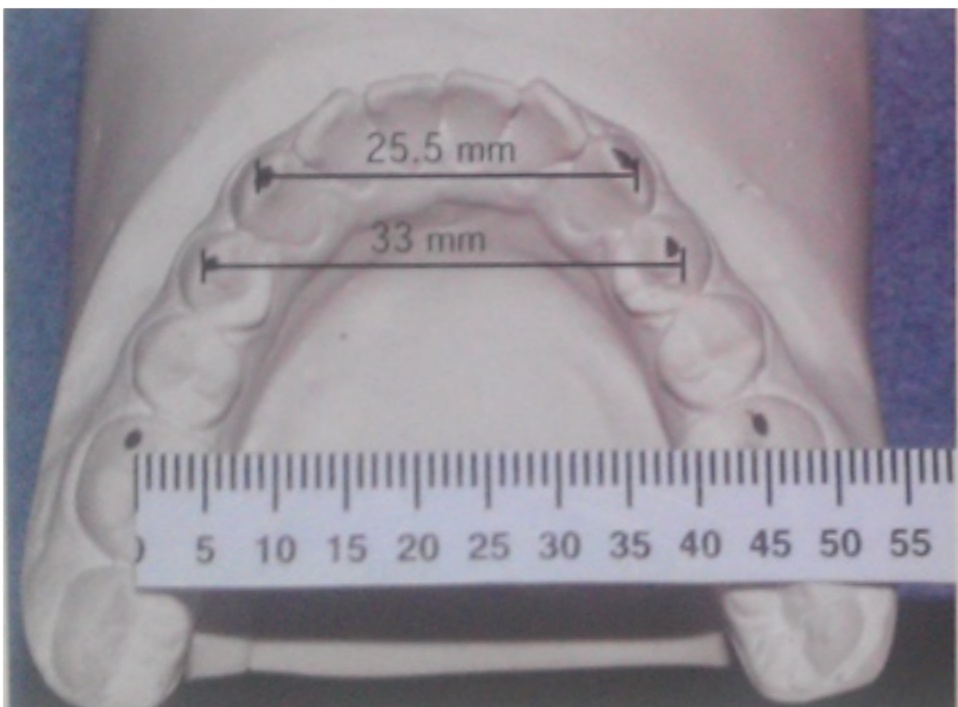
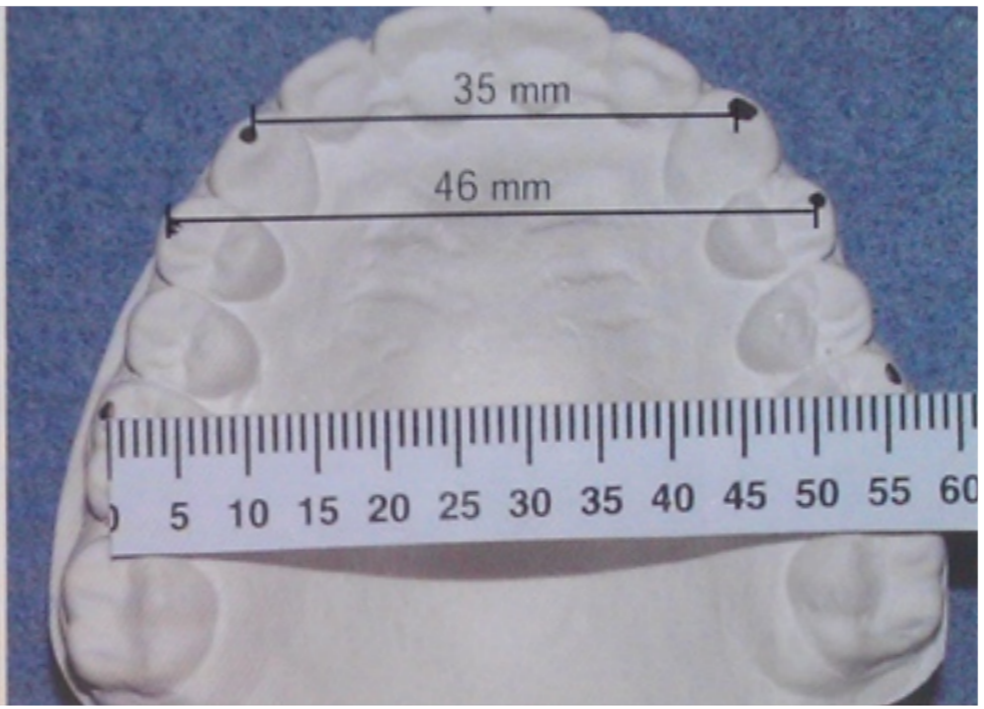
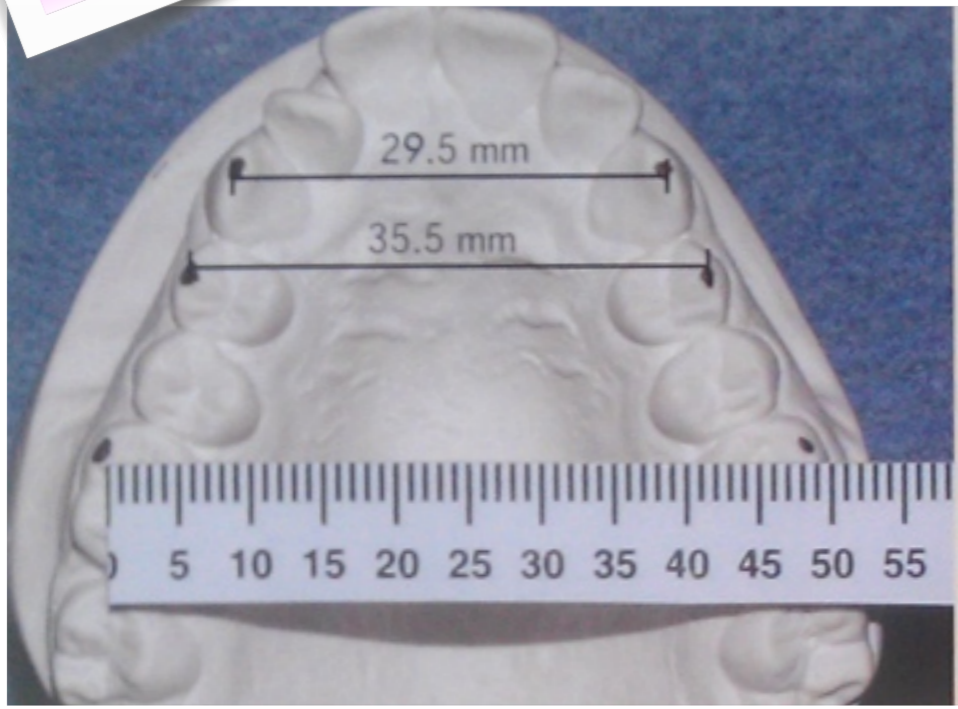


1st molar



Case Report

At De-bonding Record



Unlock the malocclusion

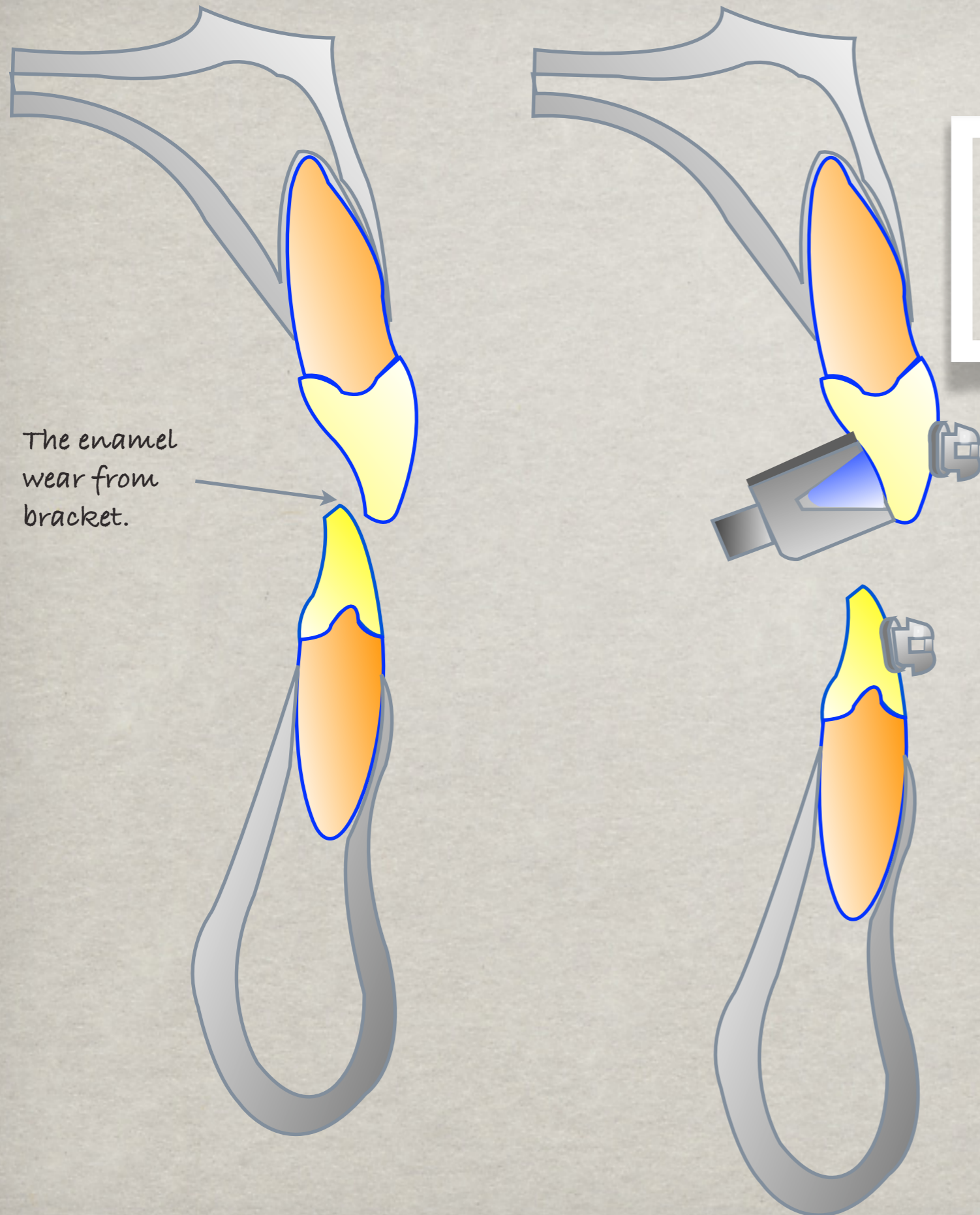
Bite Turbo (Raising Bite)

Benefit from Unlock the Malocclusion

1. Protect the enamel from bracket wear / debonding.
2. Improve the effect of light wires on arch development.
3. Improve the effect of early light elastics for A/P, vertical and transverse corrections (Block trimming).
4. May have an impact on correction of excessively **low or high** mandibular plane angles (brachyfacial or dolichofacial patients).

Anterior raising bite (Ant bite turbo)

The enamel wear from bracket.



Indications

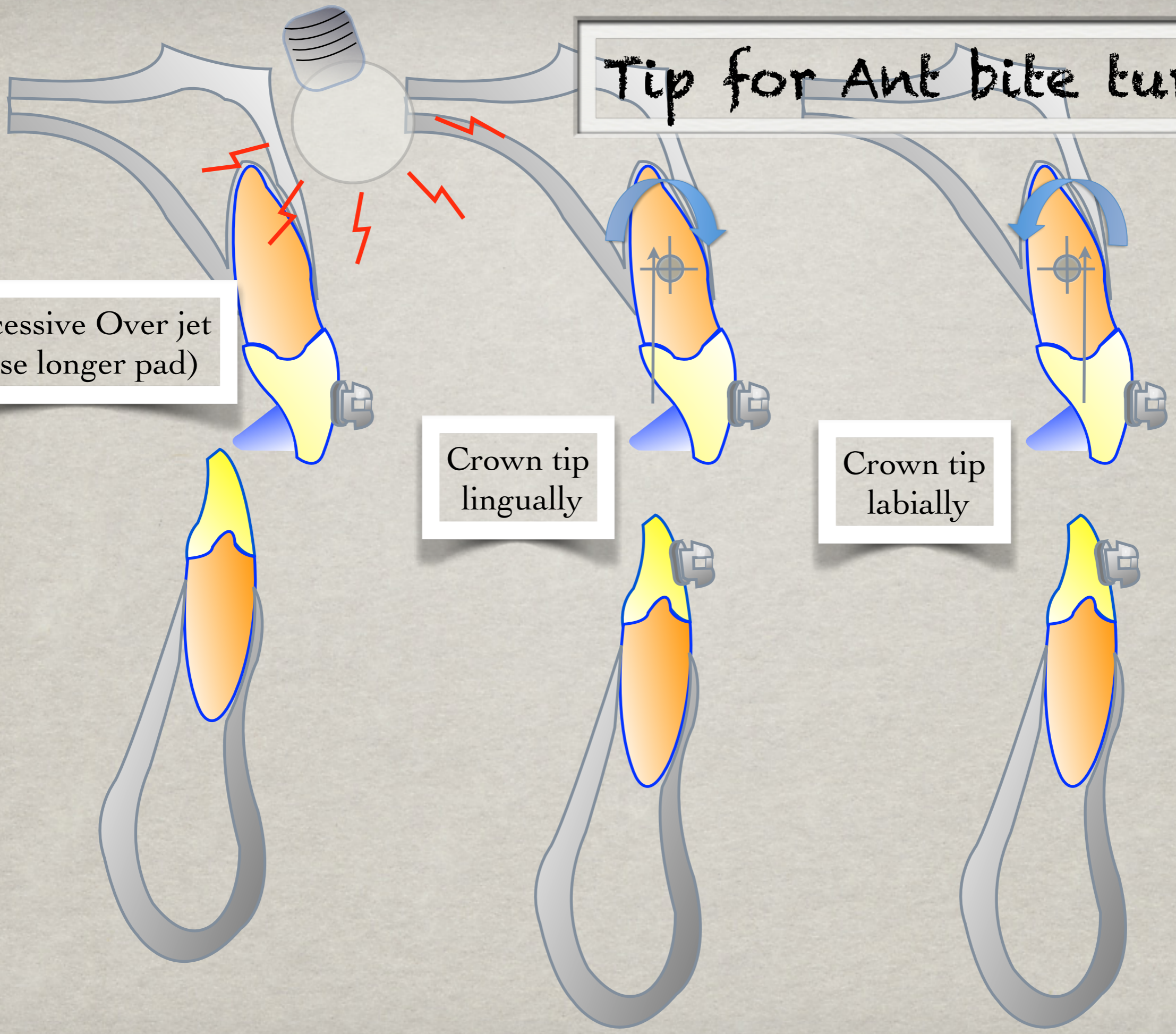
- In low angle cases
- Deep bite
- Over jet less than 3-4 mm.
- Can be placed symmetrically on any tooth if necessary

Tip for Ant bite turbo

Excessive Over jet
(Use longer pad)

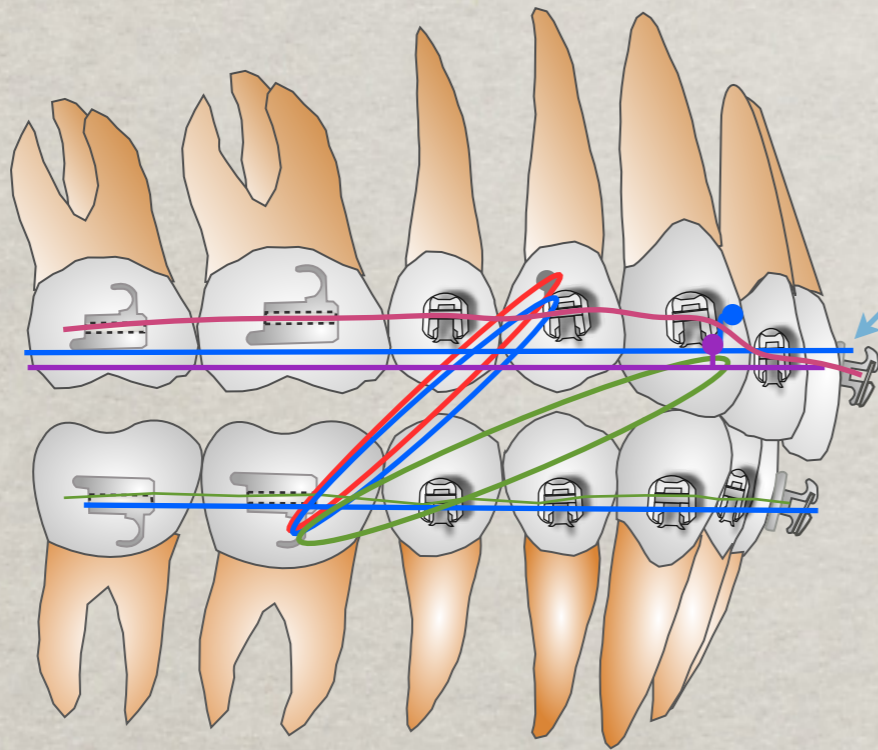
Crown tip
lingually

Crown tip
labially

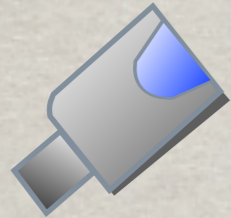


Class I Deep bite or Cl.II or E/E , Non ext

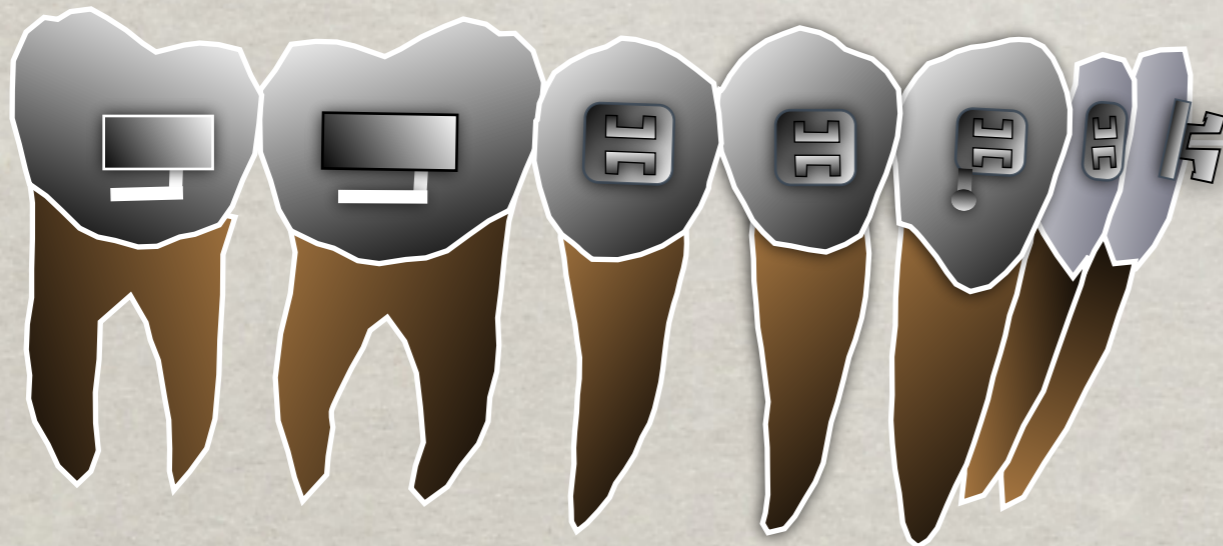
Upper Ant Bite turbo



Posterior raising bite (Posterior bite turbo)



Disto-buccal cusp



Indications

- In High angle cases
- Open bite
- Over jet more than than 4 mm.
- Can be placed symmetrically on any tooth if necessary



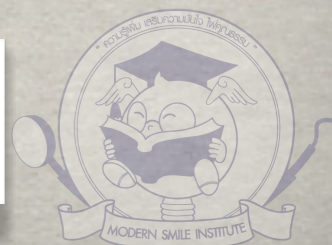
Damon's
system

Principle #4

EARLY LIGHT ELASTICS FOR EARLY
INTER-ARCH CORRECTION



THE FA BLOCKS TRIMMING EFFECT



Anterior Bite Turbo



menu

htc



TWIN BLOCKS WITH
OCCLUSAL
INCLINED PLANE



Twin Block



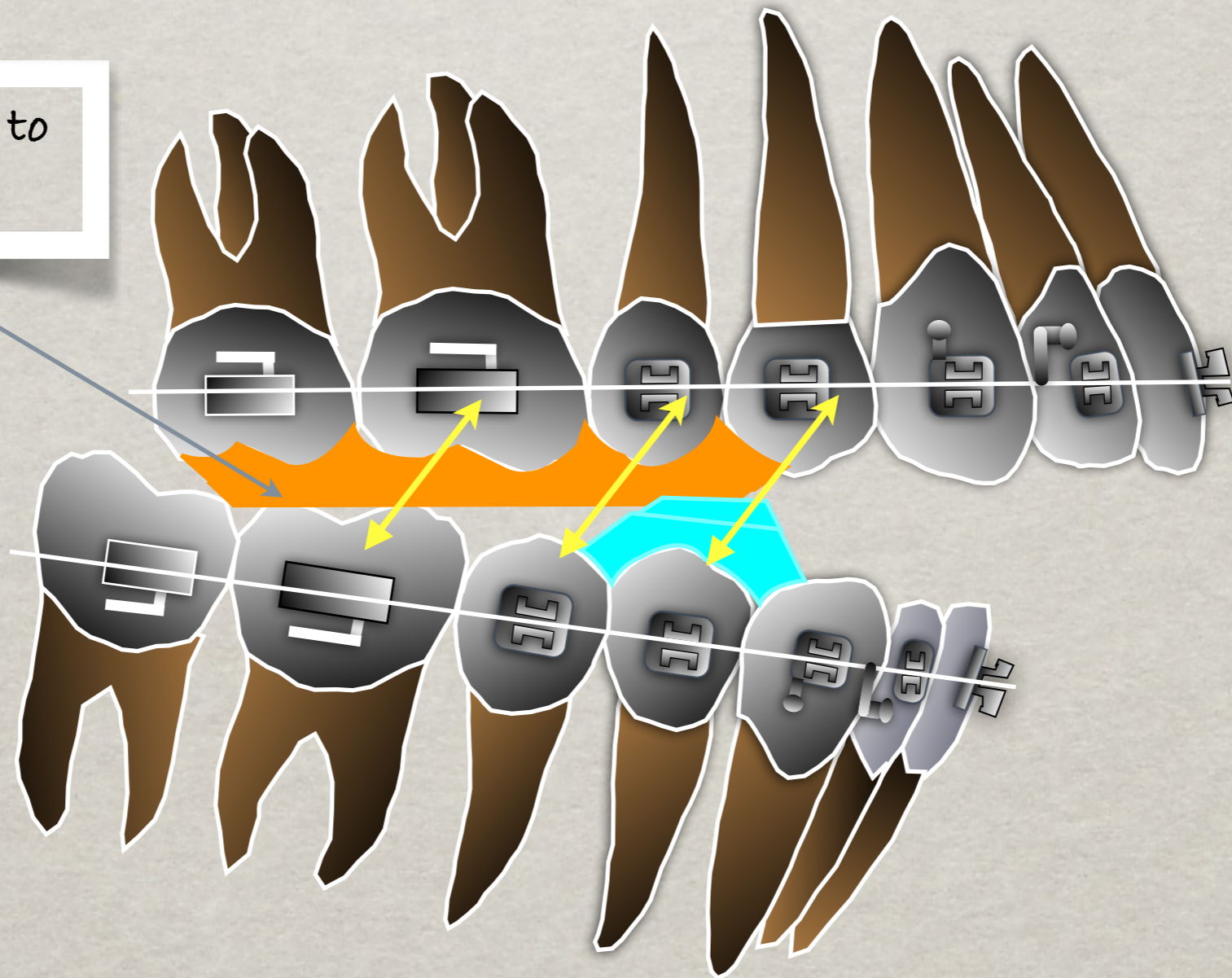
menu

htc



TWIN BLOCKS WITH OCCLUSAL INCLINED PLANE

Trimming the blocks to reduce the overbite



Damon's
system

Principle #5

**DO NOT ALLOW THE ORTHODONTIC FORCES TO
OVERPOWER THE BIOLOGICAL SYSTEM DURING
ANY TREATMENT PHASE.**

The paradigm shift of the use of low forces to create extraordinary changes in the dento-alveolar complex through functional adaptation.



Damon's
system

Principle #6

Tip for Damon User

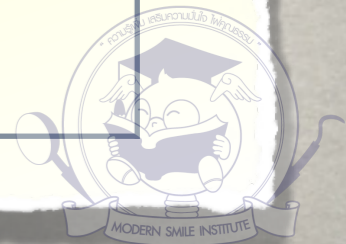
avoid increasing force levels prematurely that would overload the periodontal interface between teeth and alveolar bone, negating the functional adaptation.

Do not prematurely change wire to keep in the optimal force zone

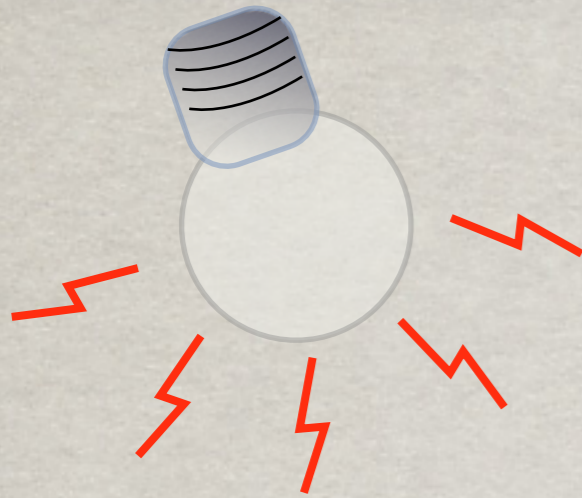


NI-TI PHASES OF TREATMENT

System	Aim	Move to working wire
Conventional	level align	as quickly as possible
DAMON	level align reshape the arch	Wait for Individual Functional adaptation



Clinical Tip



NI-TI PHASES OF TREATMENT

Even though leveling and aligning are achieved, still **not to change** wire immediately. Waiting for the **arch reshape and form** specifically to each individual patient through functional adaptation.

Damon's
system

Principle #7

COMPLETE LEVELING, ALIGNMENT AND
ROTATIONAL CONTROL REQUIRE FULL-
DEPTH RECTANGULAR ARCHWIRES.

System	Achievement of leveling, alignment and rotation
Conventional	round or under-size rectangular archwires..
DAMON	when the slot is completely filled

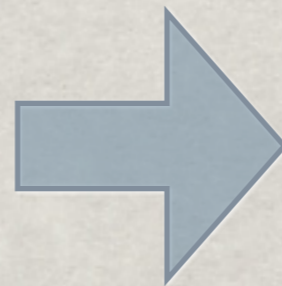


The Working/Final Phase of treatment

Damon's
system

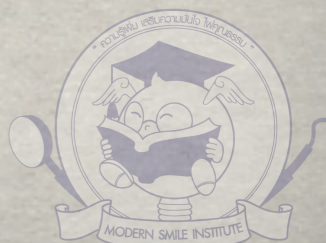
Principle #8

Posted rigid
SS wire (19x25)



Stabilizing
splint

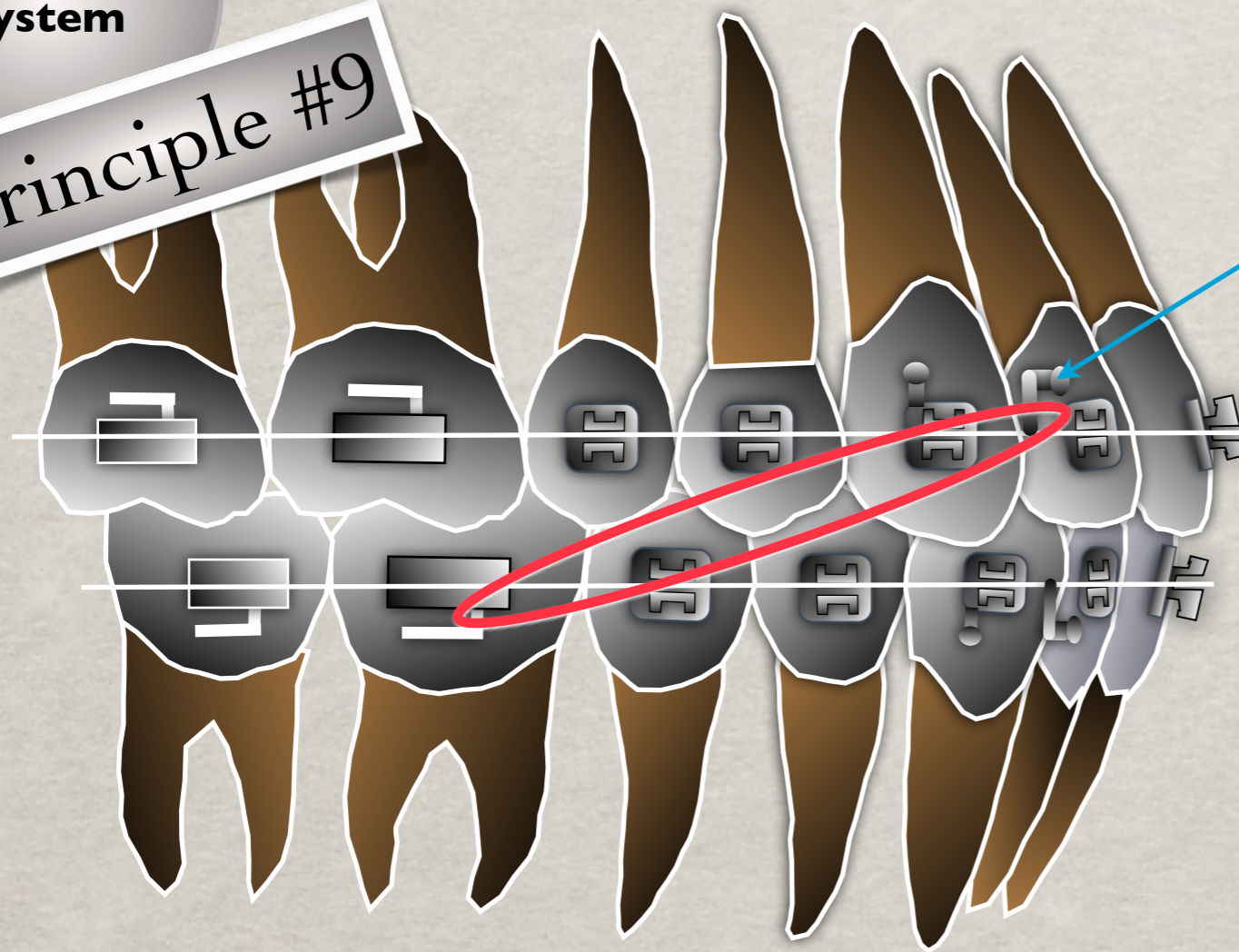
inter-maxillary forces
(Cl.II,III elastic, Herbst)



Rigid SS wire (19x25) as a splint

Damon's system

Principle #9



posted SS wire

The inter-maxillary elastics are always employed to posts on the upper arch wire to spread the forces over the entire arch



SAGITTAL RELATIONSHIP CORRECTIONS

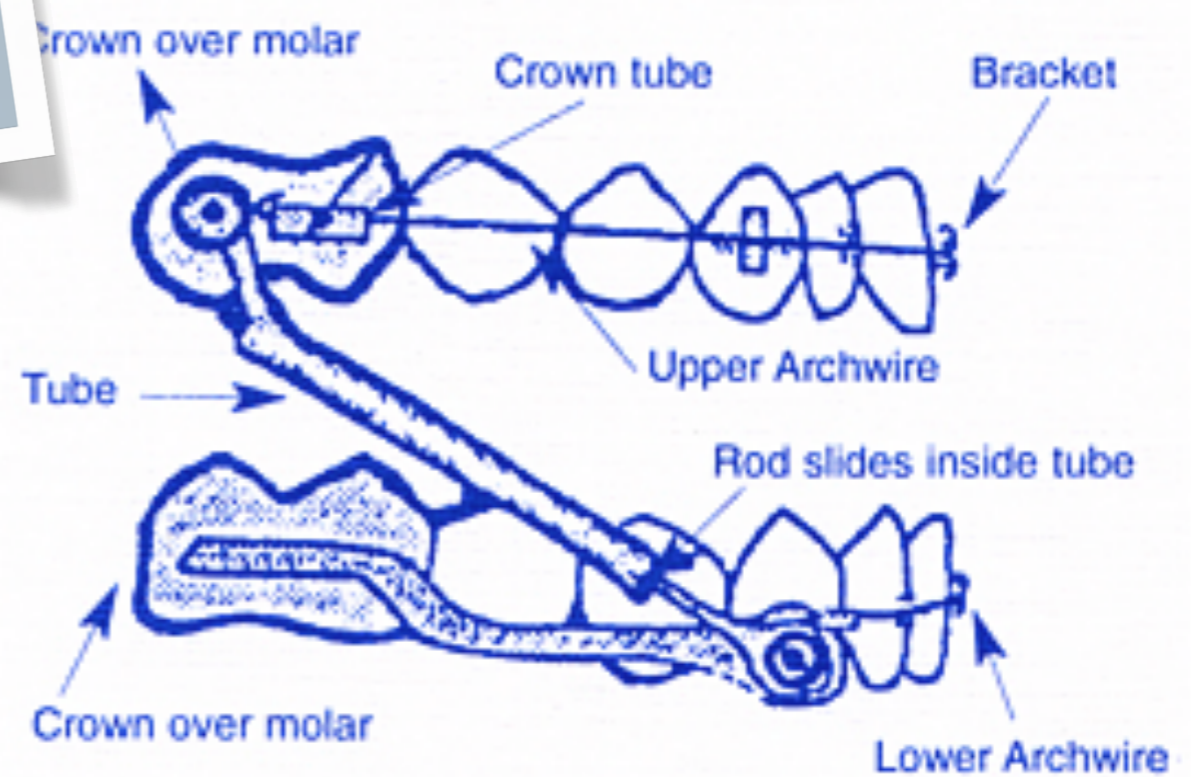
System	mild Class II	severe to moderate Class II
Conventional	-Extra oral Appliances (Head gear) -TPA, Pendulum	Extra oral Appliances (Head gear) Functional Appliances (Twin block, Herbst)
DAMON	Intermaxillary forces applied en masse. -Fixed Functional Appliances (Bite fixer, Herbst) protrusive movements in one stage at a time. -Cl.II Elastic	Functional Appliances (Twin block, Herbst) protrusive movements 4mm. at a time.



Bite Fixer



Herbst



RETENTION

TREATMENT PLAN FOR STABILITY

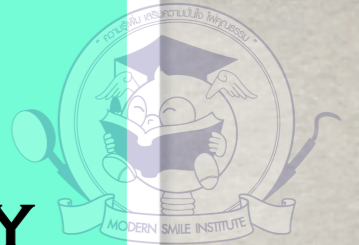


TRADITIONAL SYSTEM

- Use the patient's pretreatment arch form as a guide to arch shape.
- Avoid enlargement of the lower arch unless cross bite or unusual narrowness

RETENTION

TREATMENT PLAN FOR STABILITY



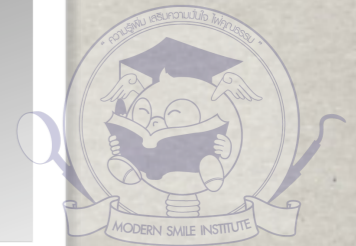
Damon's
system

Principle #4

DAMON SYSTEM

- The arch form reshapes itself to accommodate the teeth; the body, **not the clinician**, determines where the teeth should be positioned so-called "**Physiologically determined**".
- Moving teeth by damon's system generates a healthy alveolar bone and periodontium support. the tongue's resting position changes during treatment to occupy a higher location in the palatal vault, creating a new force equilibrium. the relapse, therefore, is not as susceptible to relapse as moving teeth by conventional traumatic force.

THE FACT OF RELAPSE & RETENTION

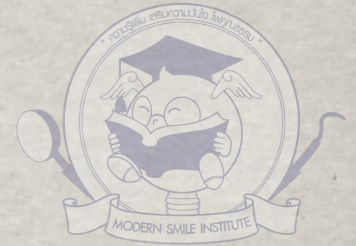


-Over time, decreasing dental arch dimensions appears to be a normal physiologic phenomenon.

-The degree of arch length reduction, constriction, and resultant crowding is variable and unpredictable.

-no absolute treatment or retention rationale that will guarantee long-term stability.

THE FACT OF RETENTION



Damon: beautiful occlusions, facial balance and healthy periodontal tissues maintained with some form of long-term retention

Traditional: traditional occlusions, facial balance and poor periodontal tissues with some form of long-term retention

RETENTION RECOMMENDATION

Bi-maxillary splint



maintain achieved class II correction.



RETENTION RECOMMENDATION

bonded retainers



routinely canine-to-canine in the lower arch and on two or four upper incisors.

Essix



DAMON[®]SYSTEM
More than straight teeth[™]



menu

htc



DAMON Q

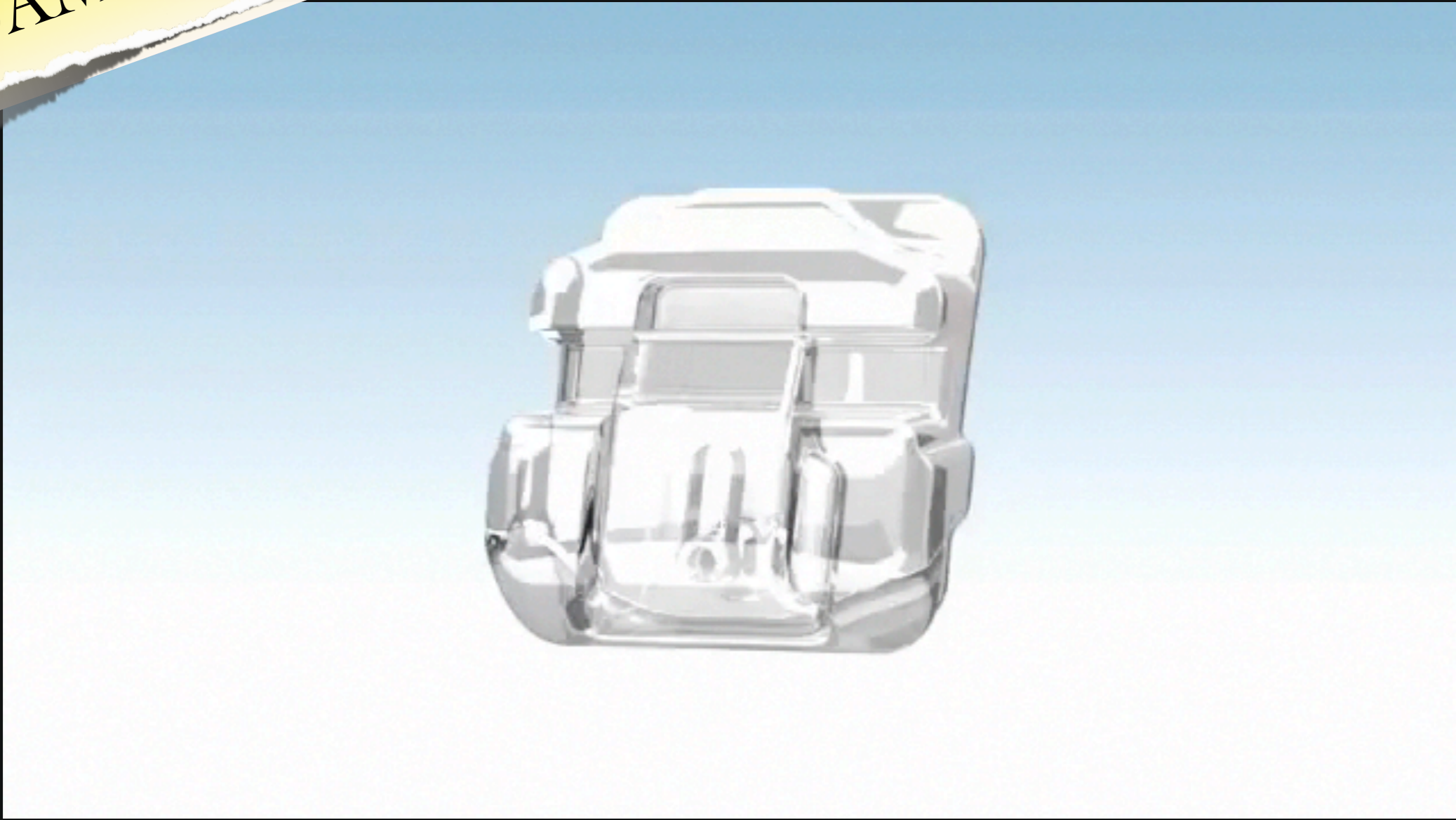


menu



htc

DAMON Q Clear



menu



htc

NOTE:



.....

.....

.....

.....

.....

.....

