



Ethics in Treatment Planning... when  
to restore, refer or RUN!!!

St. Pete '19

Chris W. Campbell, DMD



what do you see here???



How about here?















ASHLEY



















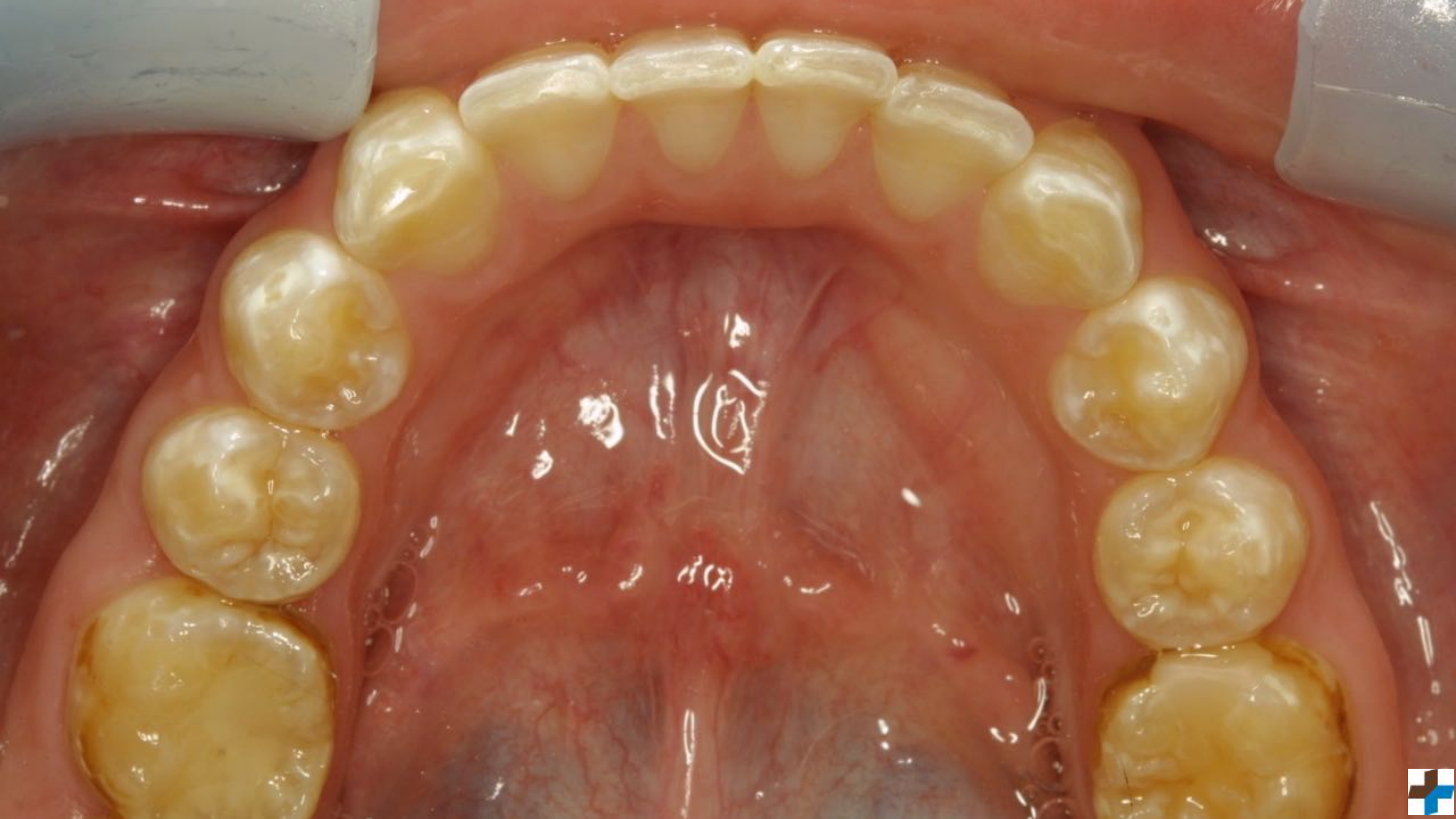


















































































































Mrs. McGee















HOPE































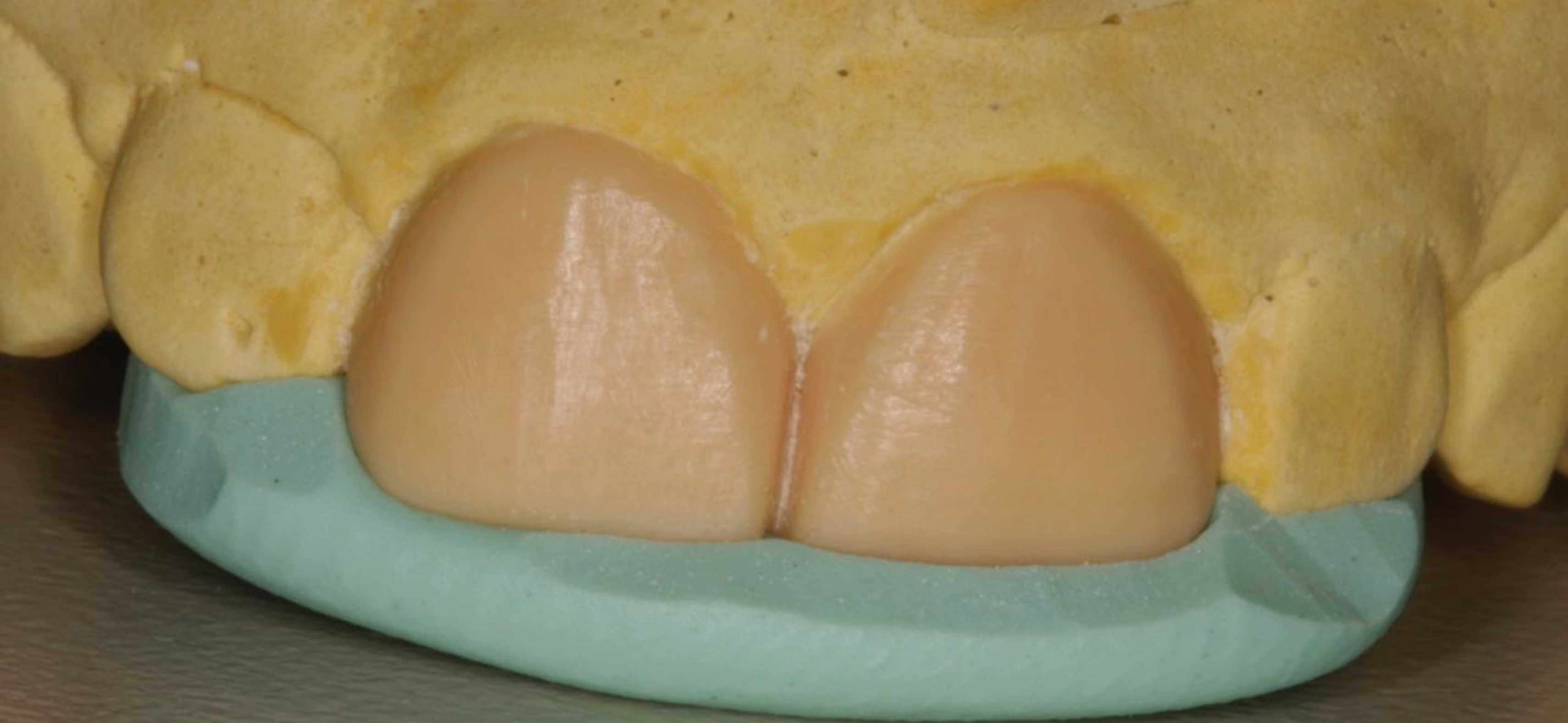








































ALEX



























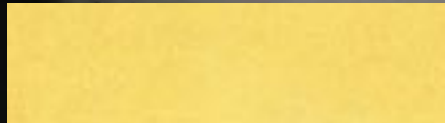






DR CAMPBELL

DR CAMPBELL







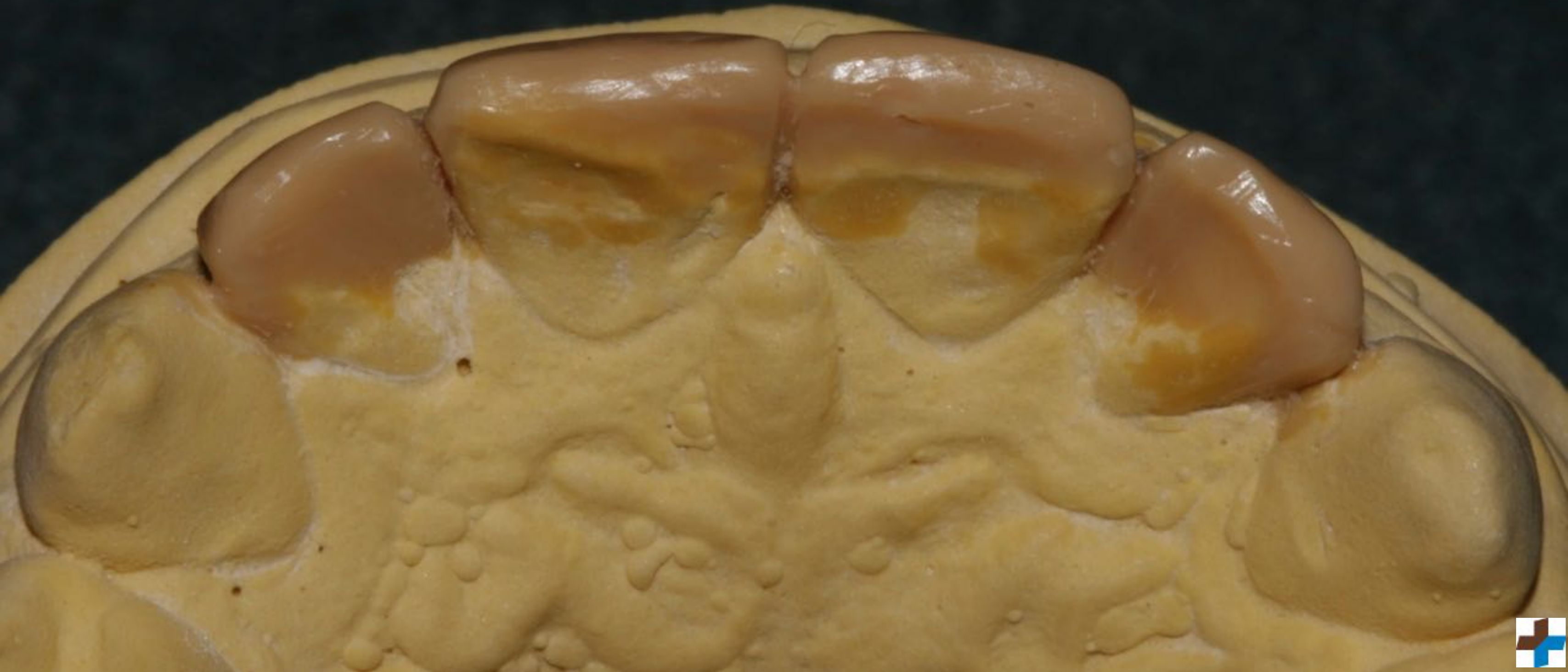




















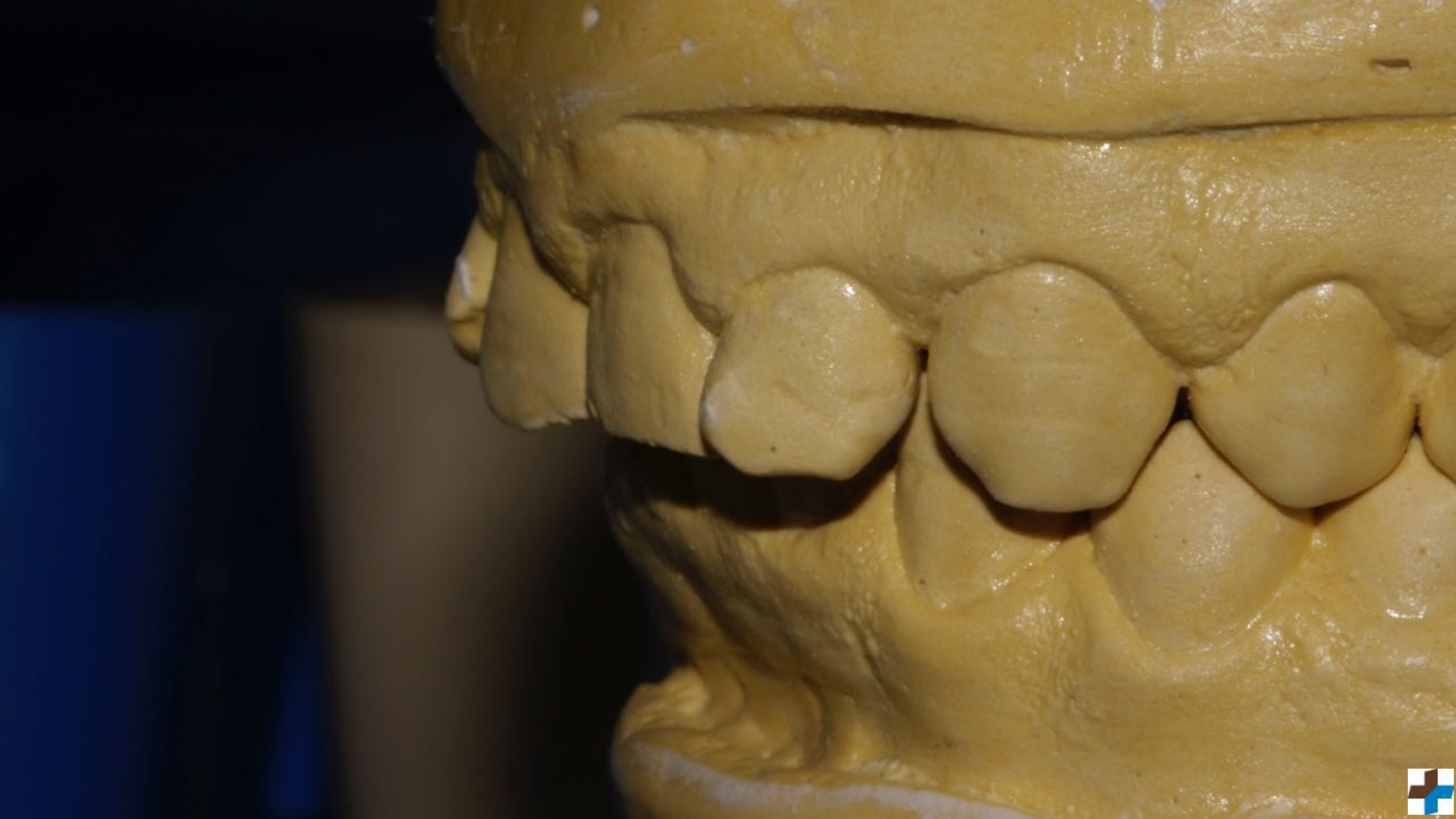








































































COLE























JOURNEY

10.18.2009

*Kingsland Talent Agency*

P. O. BOX 4042  
MONROE, LOUISIANA 71202  
PHONE 337/387-1994



















































































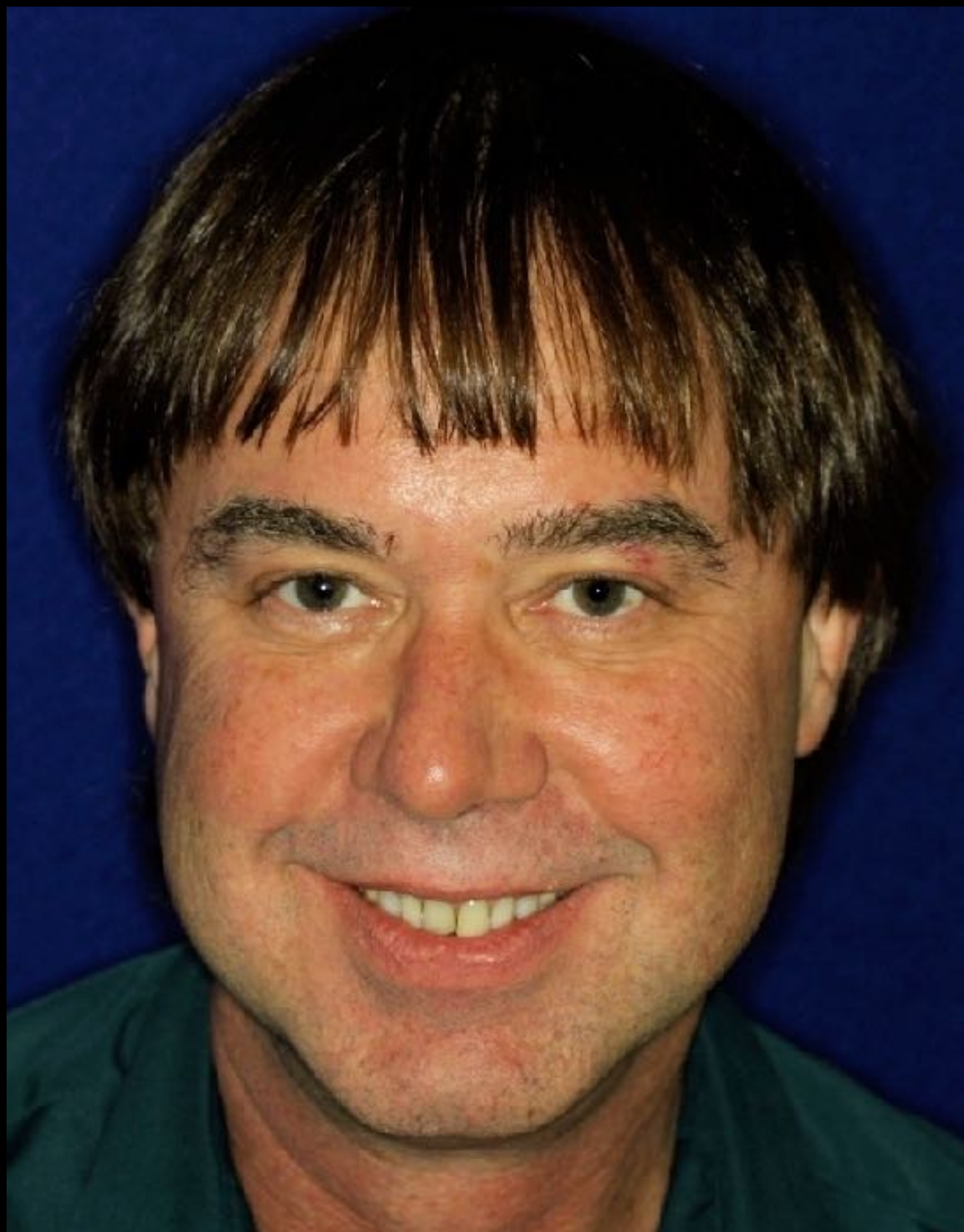




















Beth

7/16/99











consult #1 03/23/2004



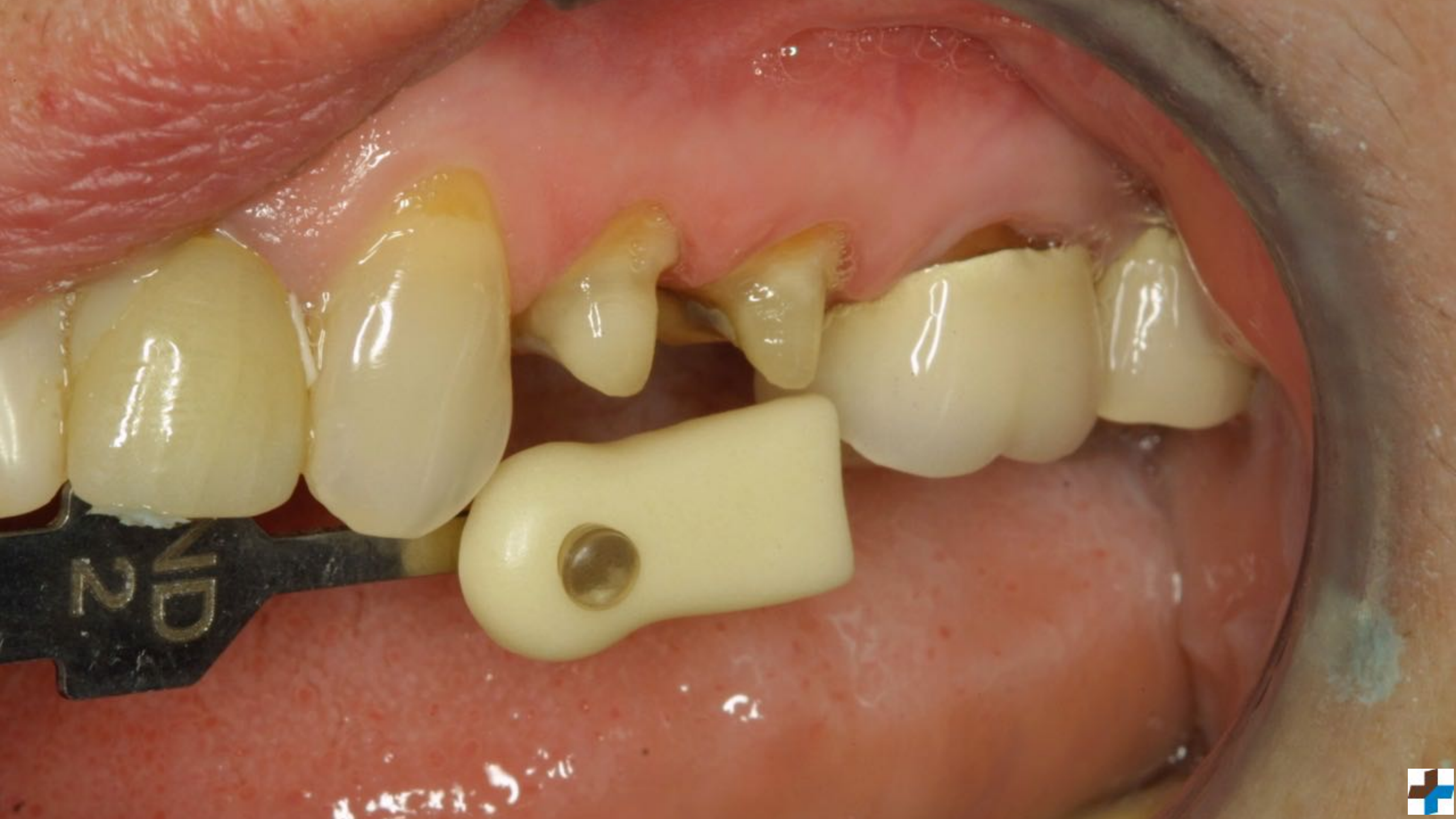




11/26/07









03/08/11 Consult 2

11/1/2011 Consult 3

















gina

































































Paula













































































































My name is Earl...



















































































































































































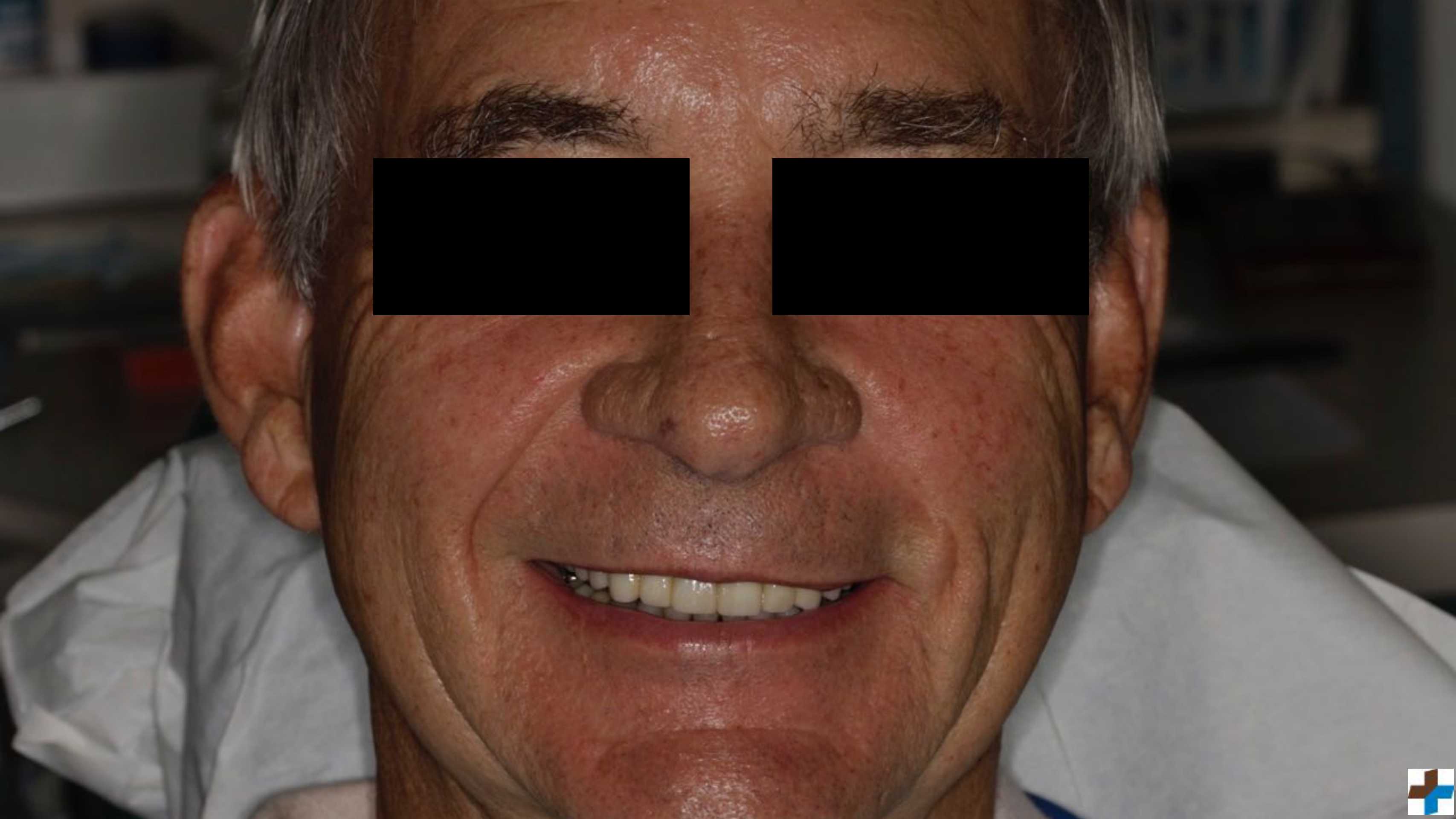




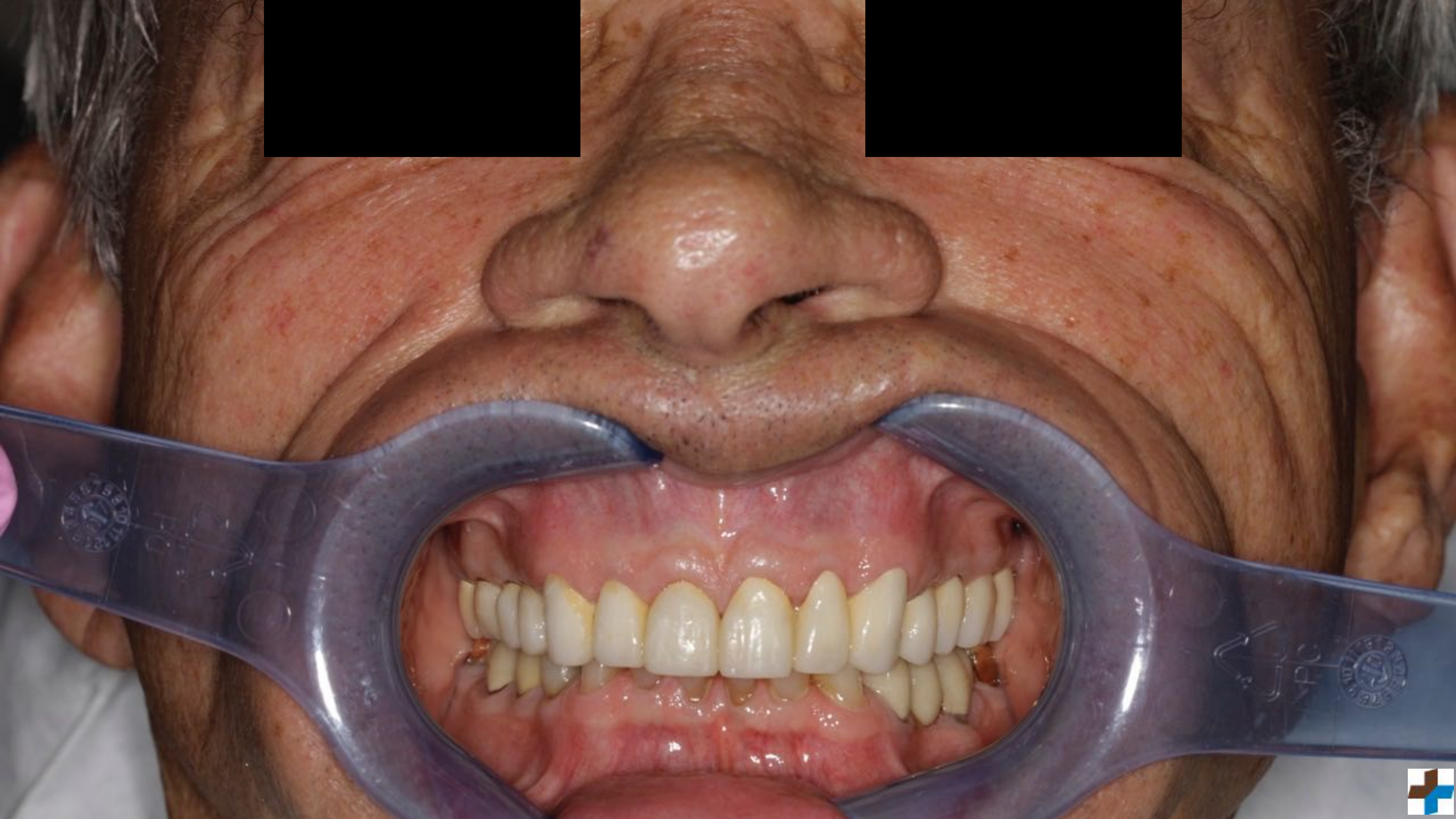
























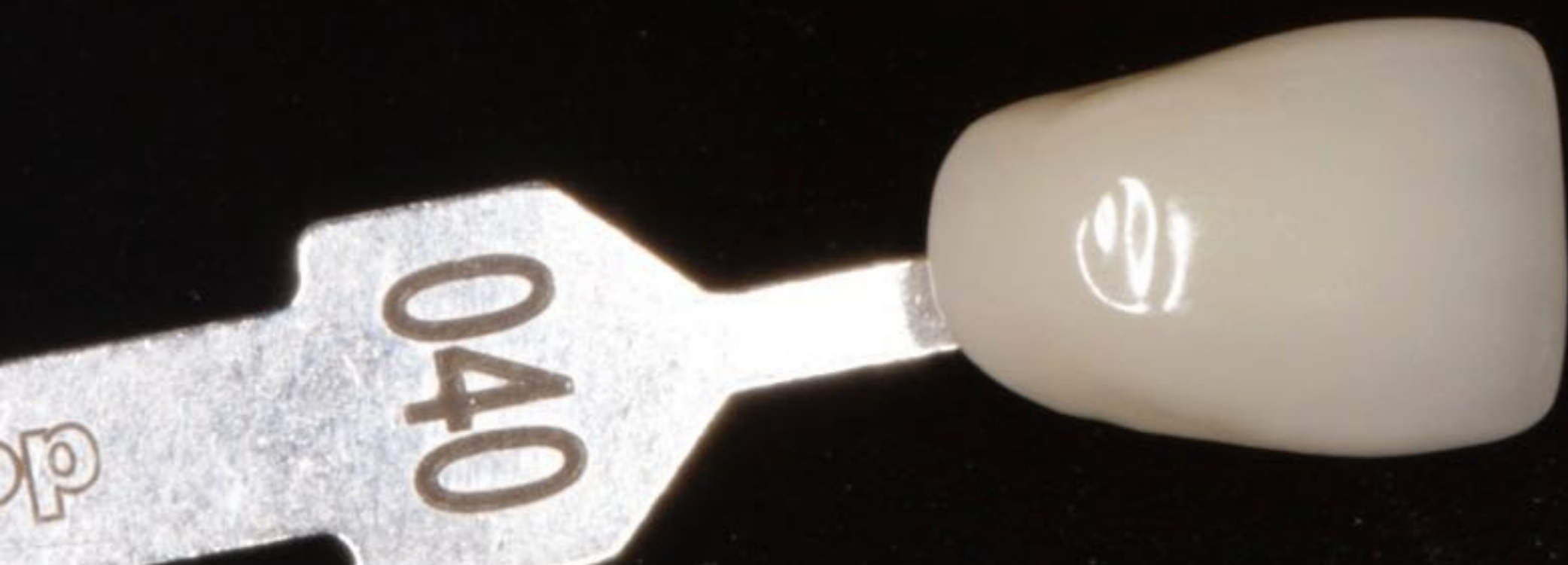












































































dan







































































Click the image to select the tooth color sampling area. Use Shift+mouse wheel to adjust size of the area.







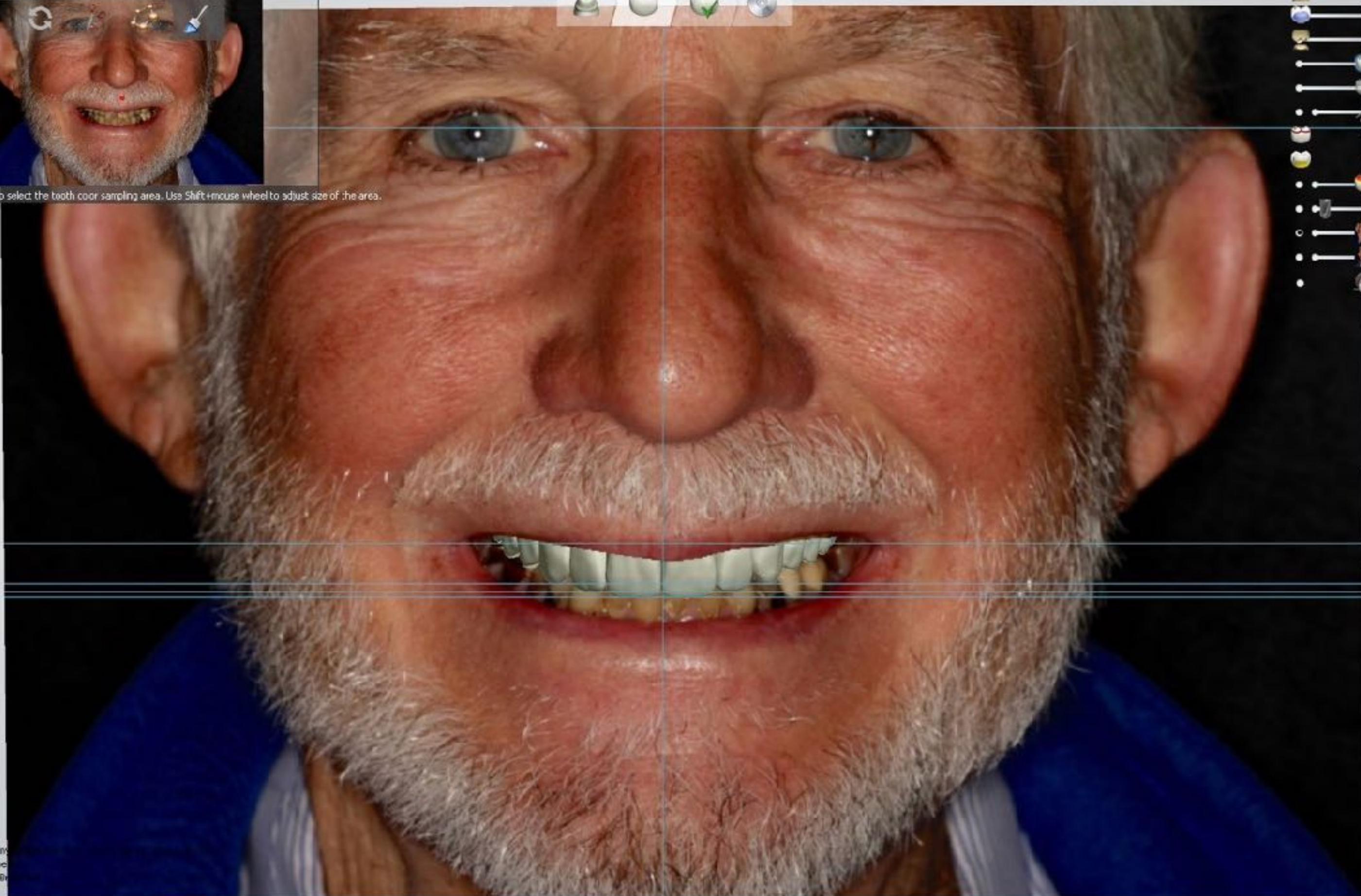
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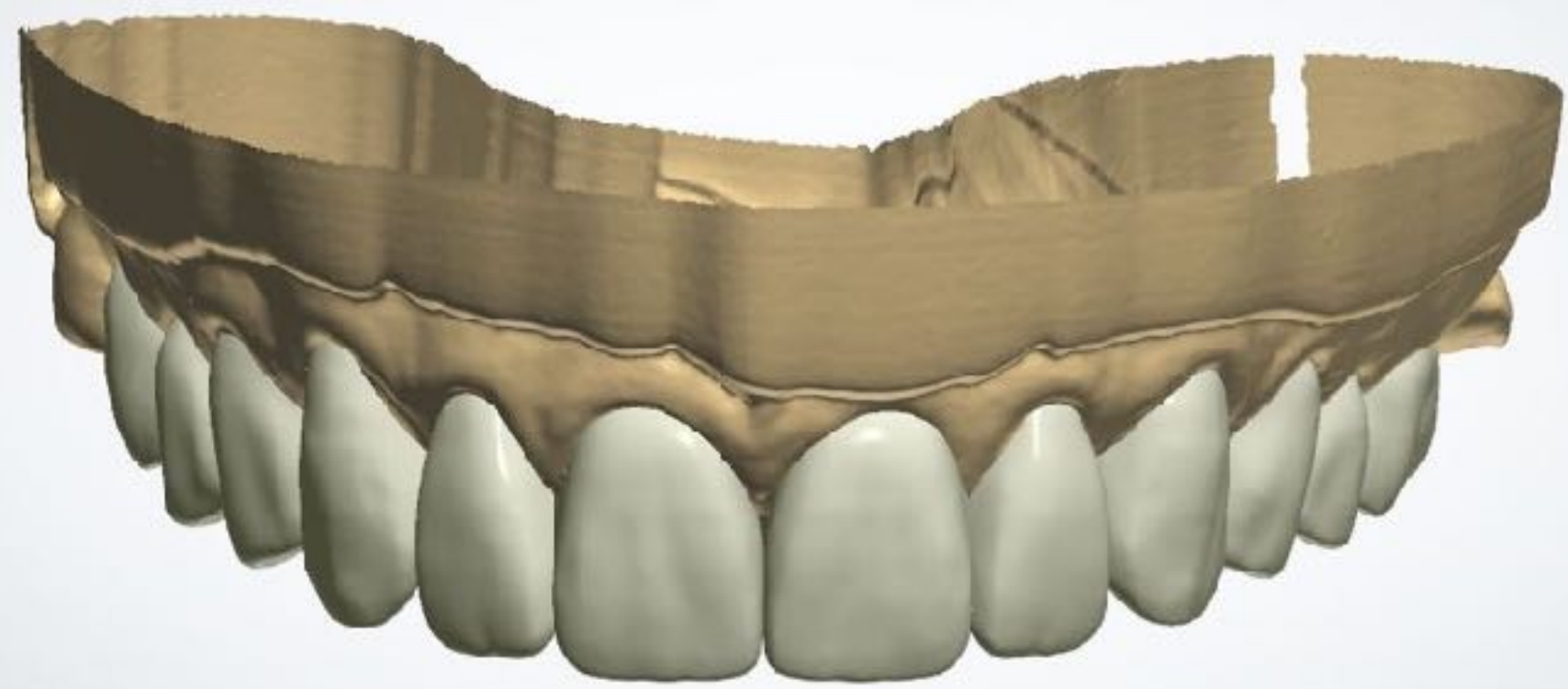
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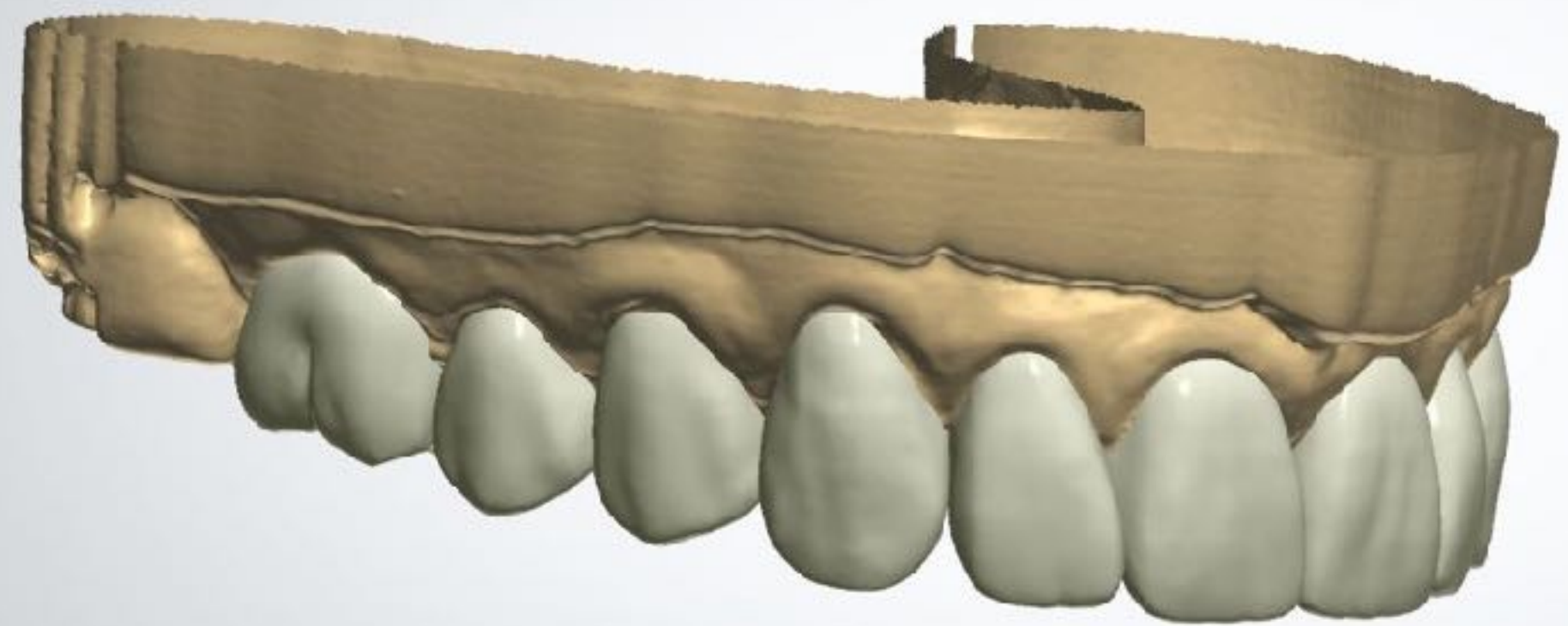




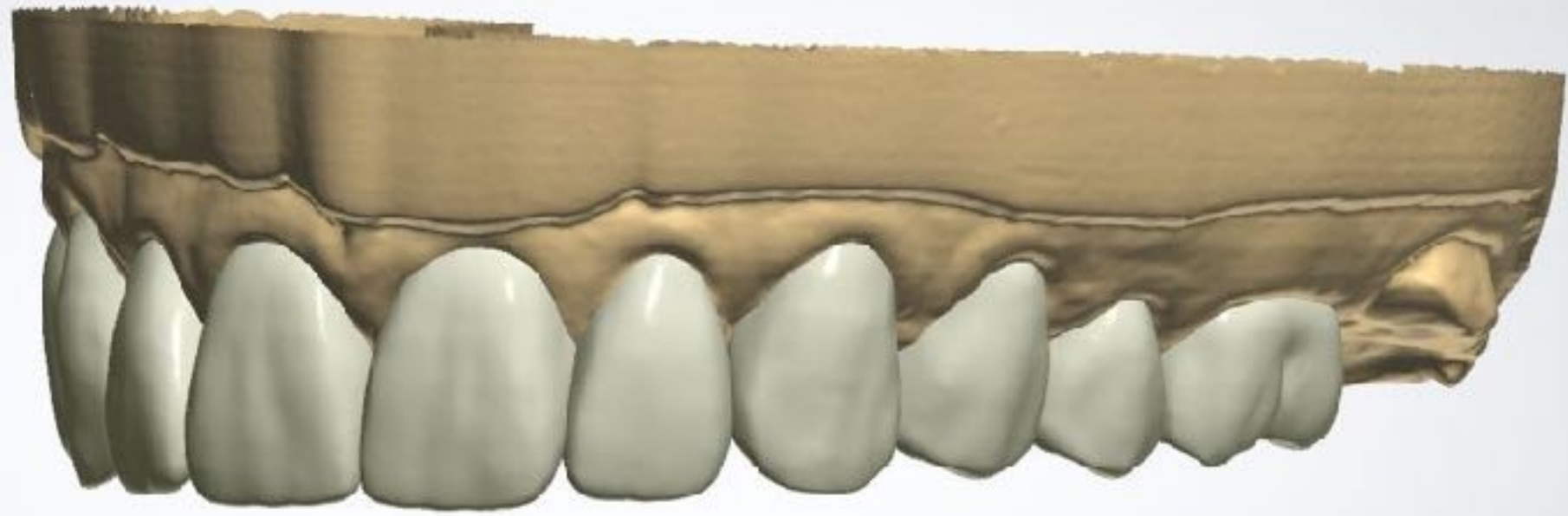
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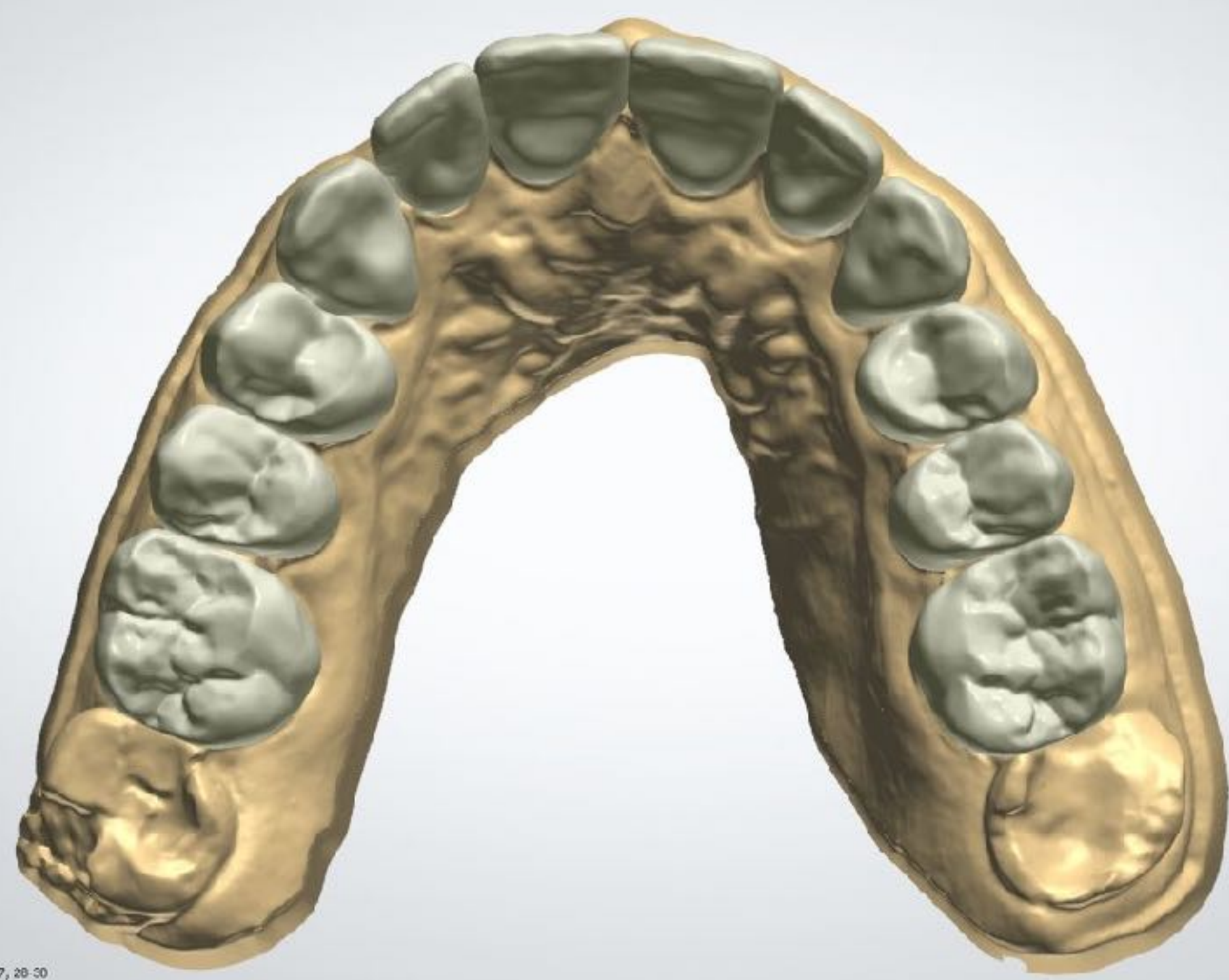










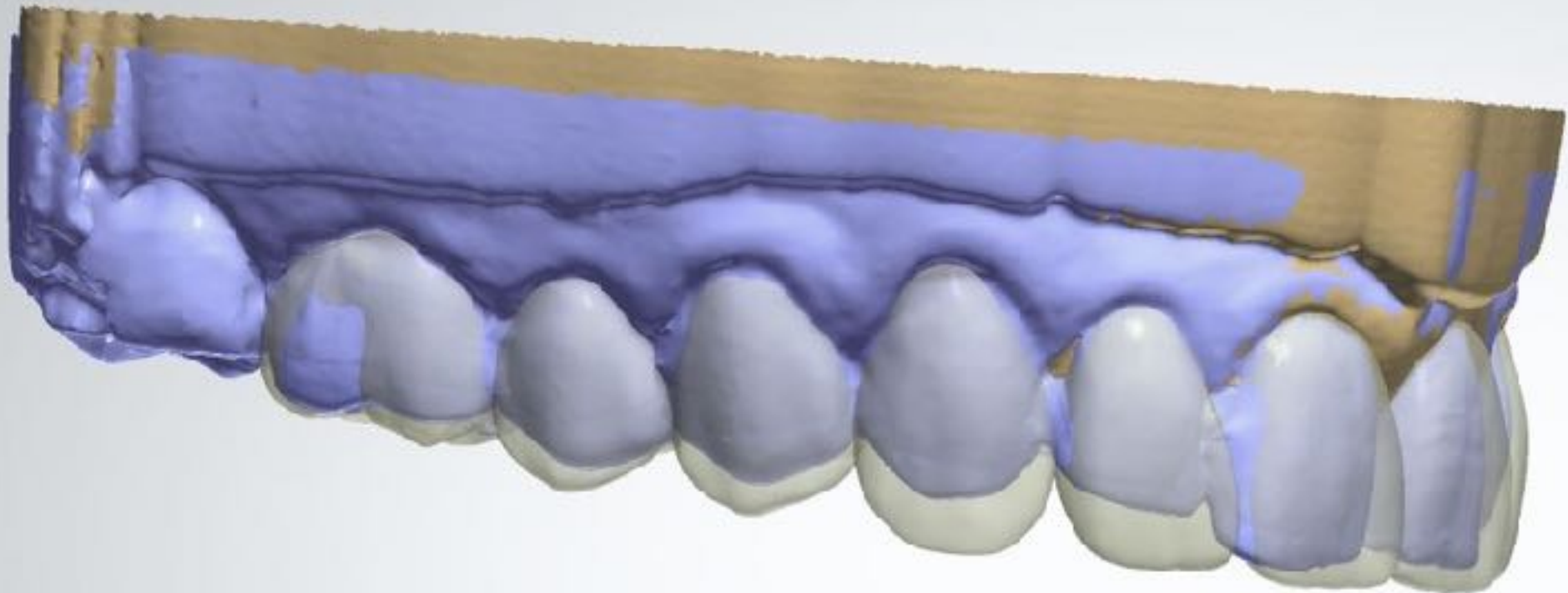


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Clinic: Campbell  
Patient: R Dan Braddock

3shape





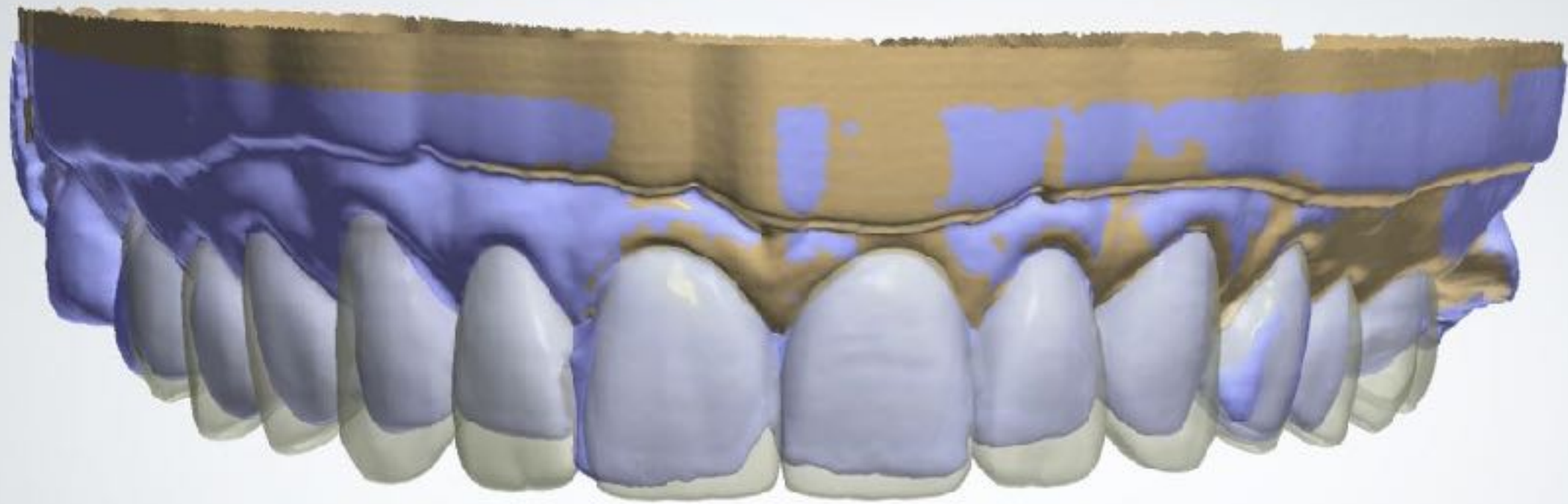


Order: Anatomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: 0 Dan Dreiford

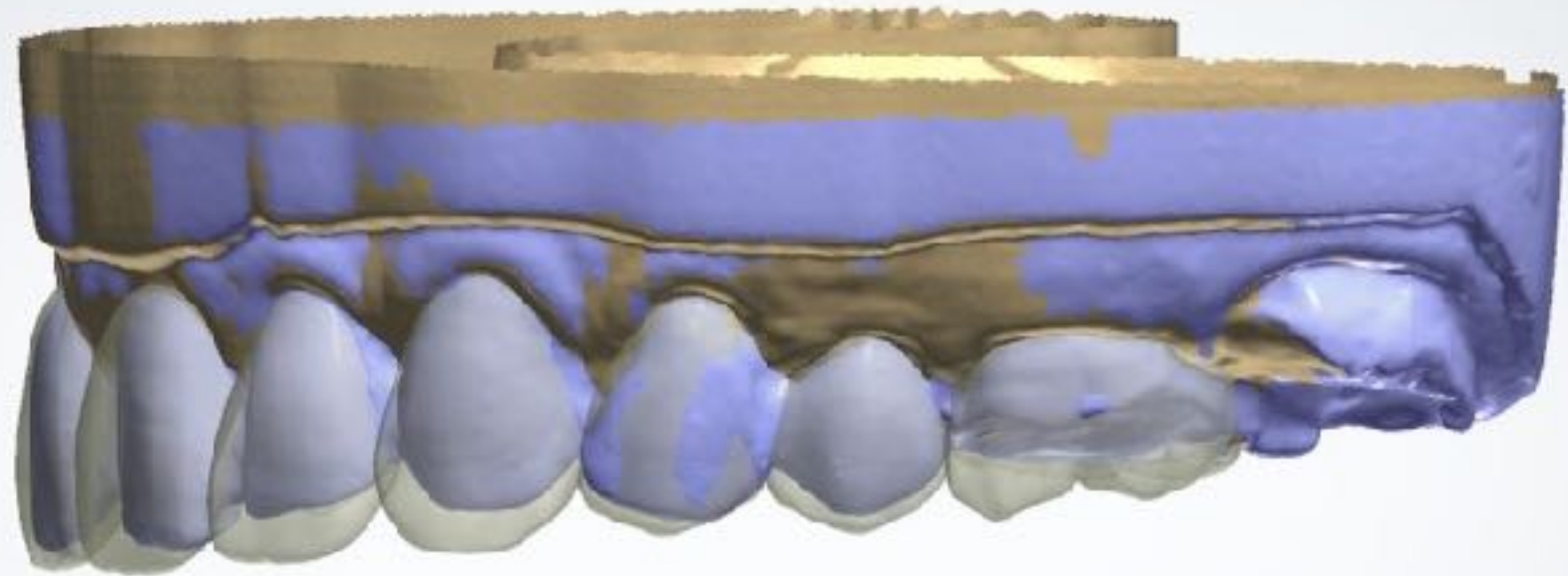
3shape



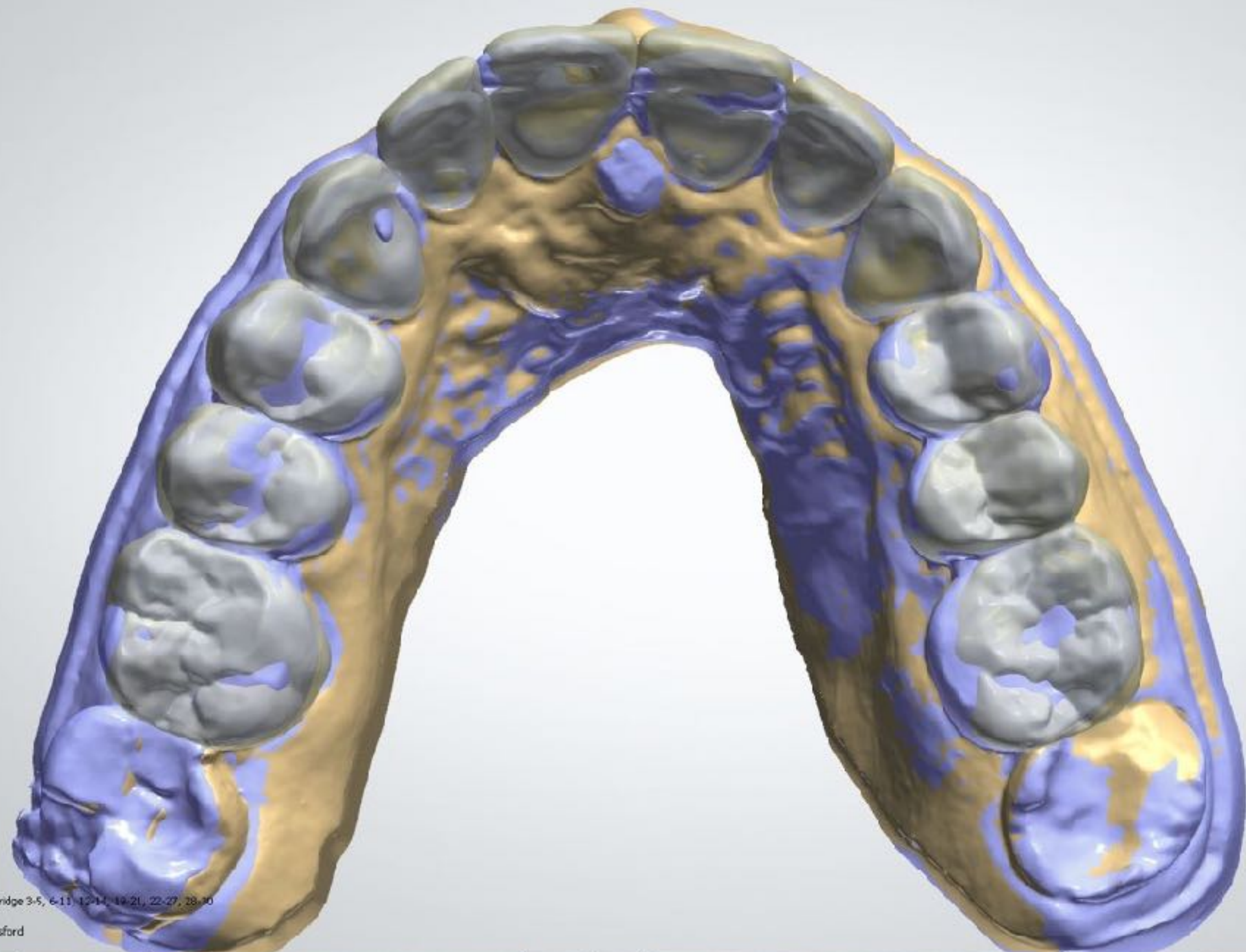










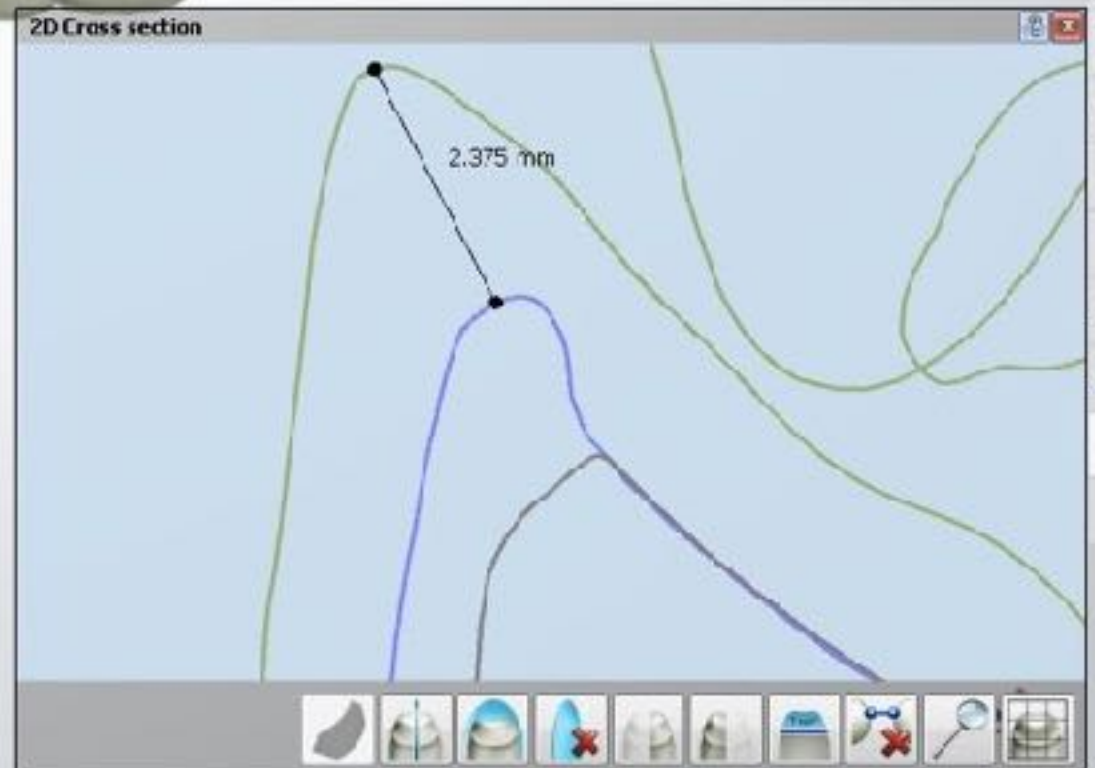
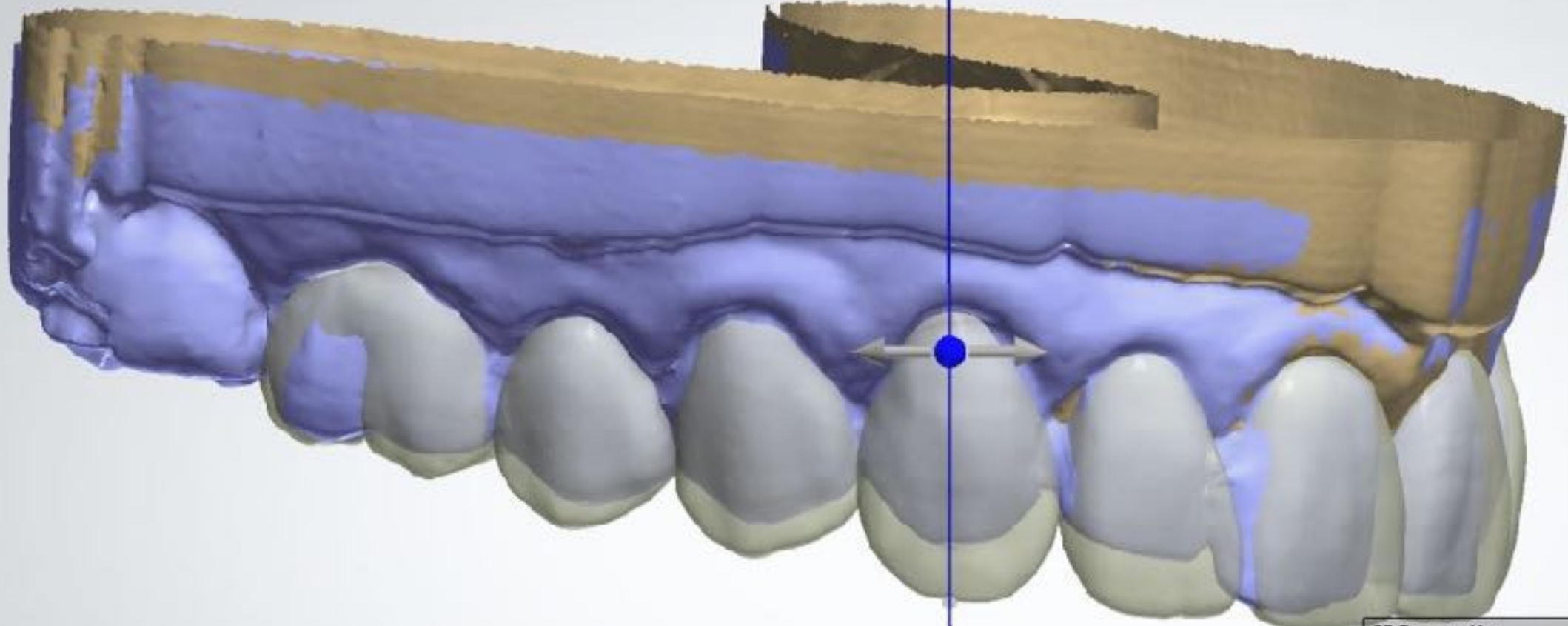


Order: Anatomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: 8 Dan Bralsford

3shape



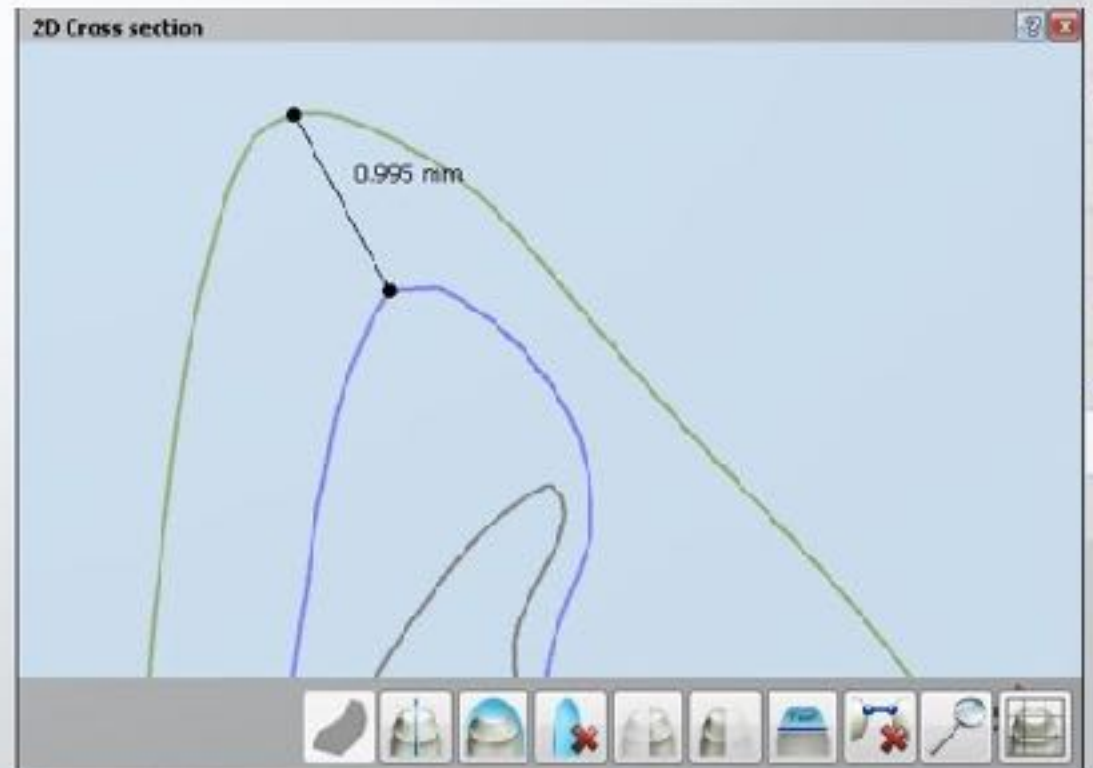
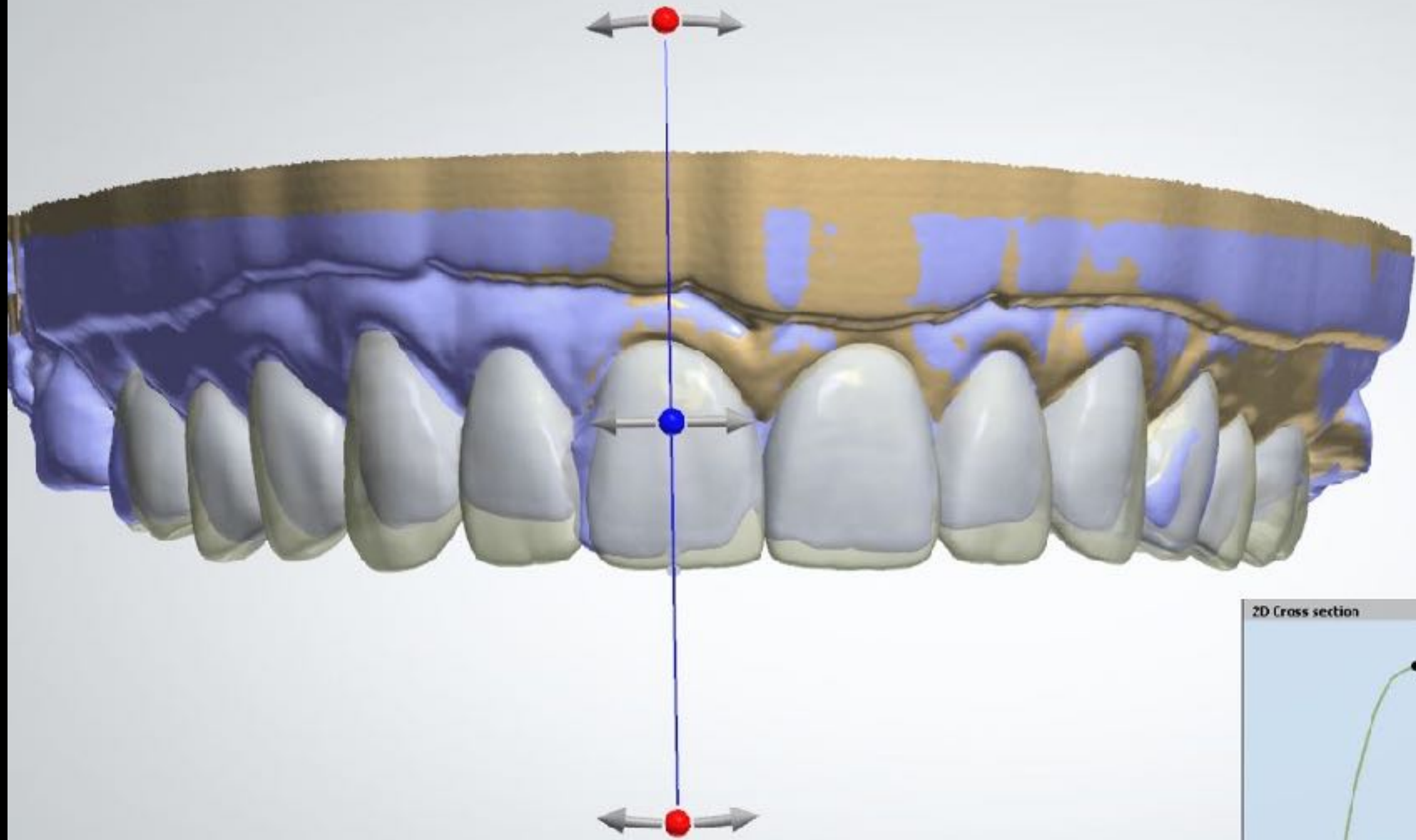




Order: Anatomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: S Dan Brailford



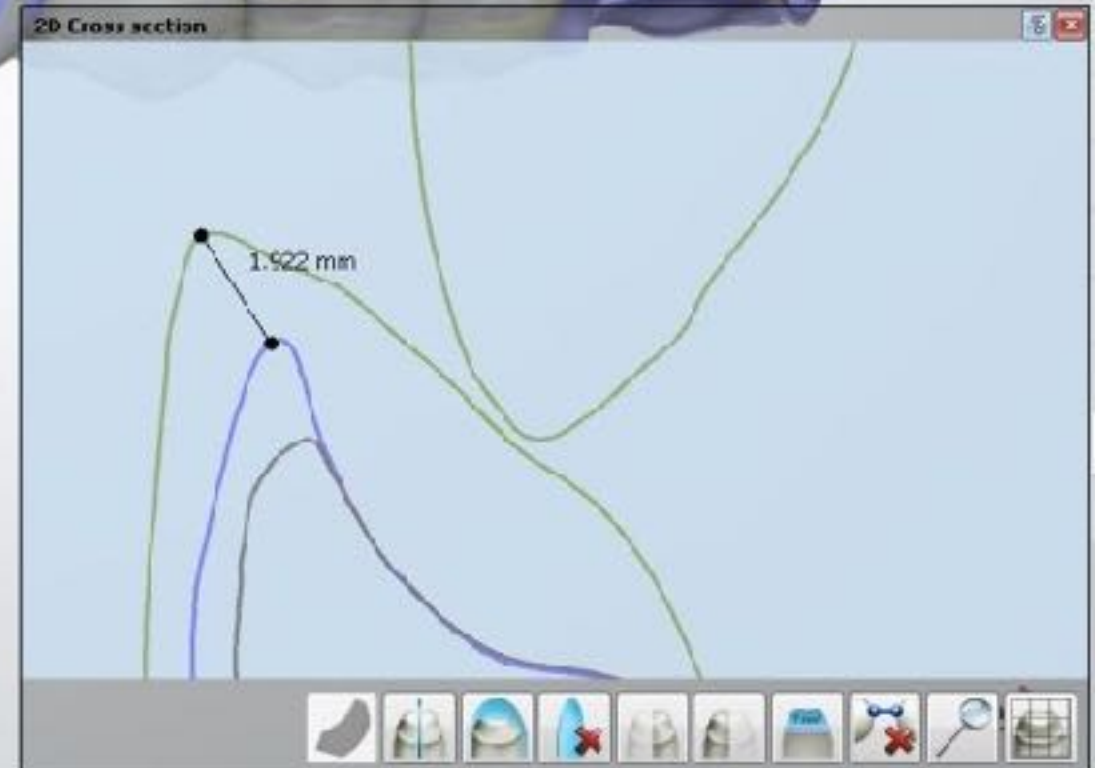
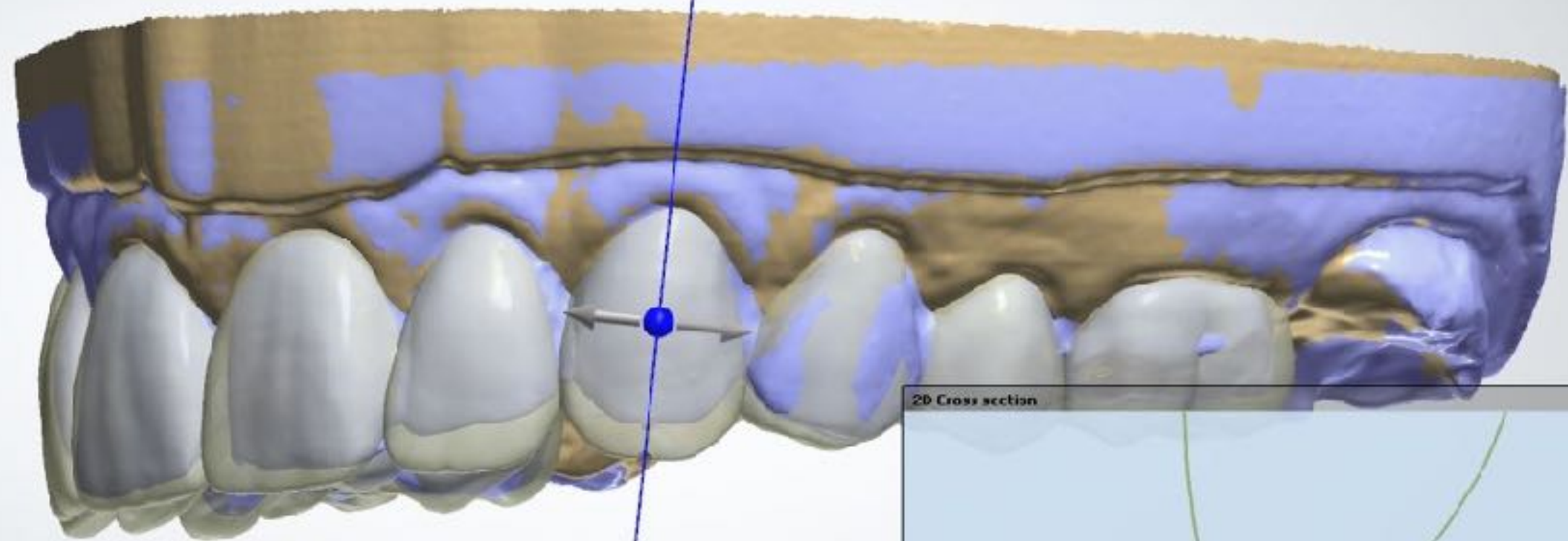




Order: Antony bridge 3-5, 6-11, 12-14, 19-21, 22-27, 20-00  
Clinic: Campbell  
Patient: 8 Dan Bralsford



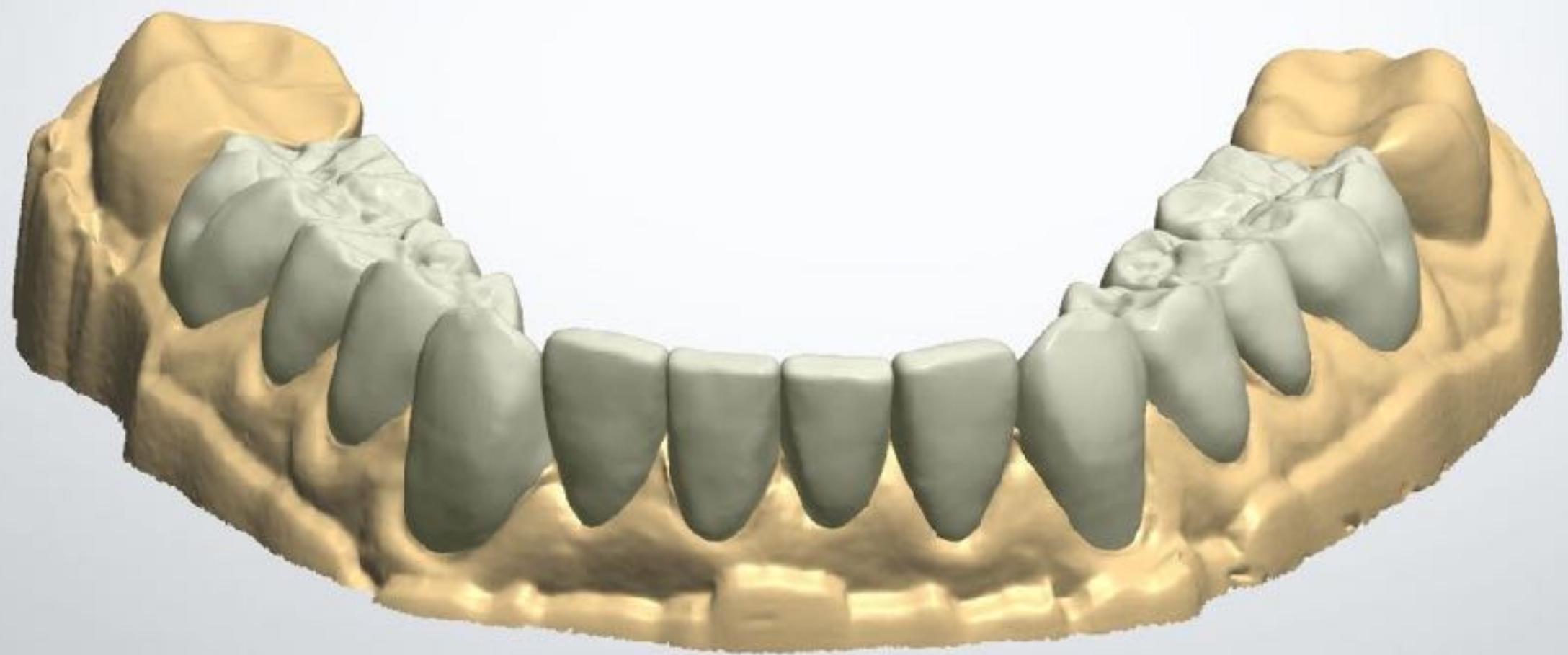




Order: Anatomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: 8 Van Eralsford





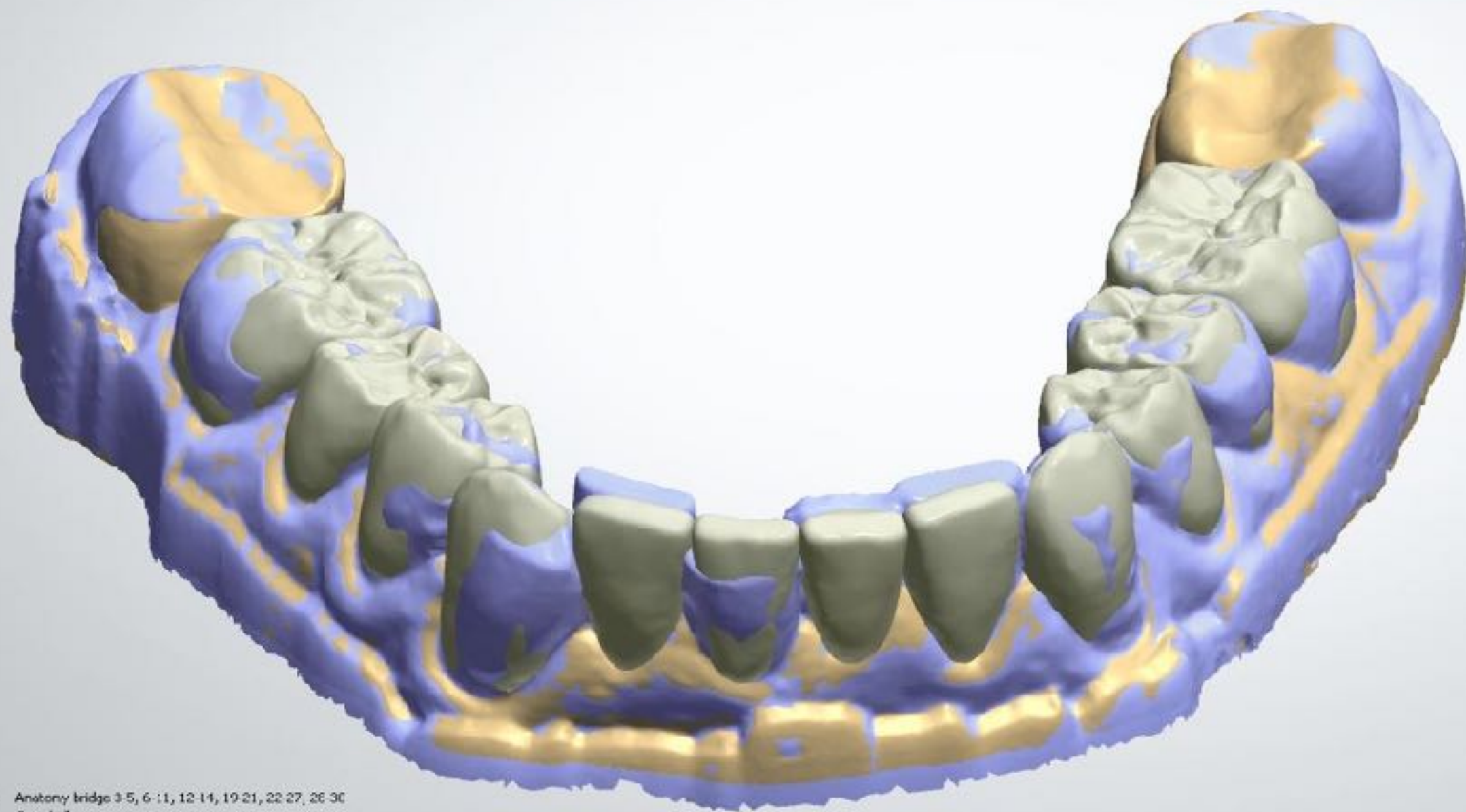
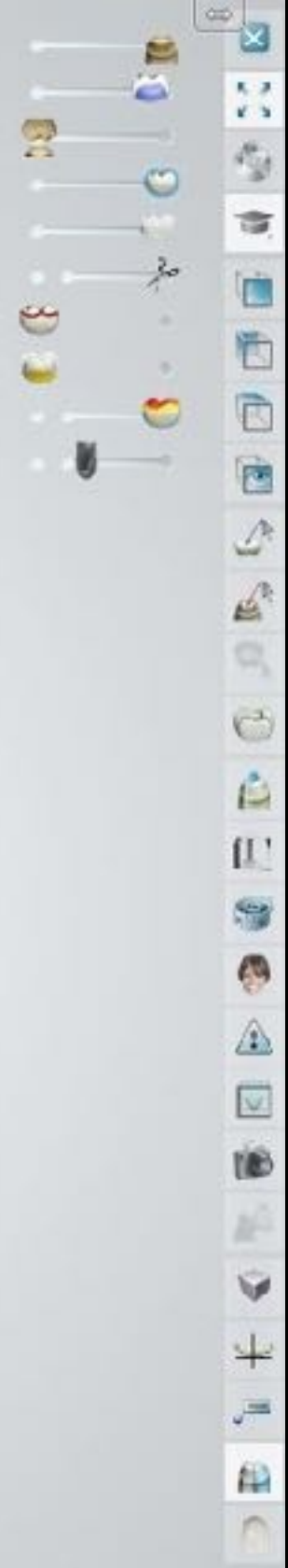


Order: Anstomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: B Can Braleford

3shape







Order: Anatomy bridge 3-5, 6-11, 12-14, 19-21, 22-27, 28-30  
Clinic: Campbell  
Patient: R Dan Bradford

3shape

























































### Anatomy design

Crown 3

### Smile Composer

Smile Library

Sculpt

Multiple teeth tools

Single tooth tools

Smart tools

Connection to margin line

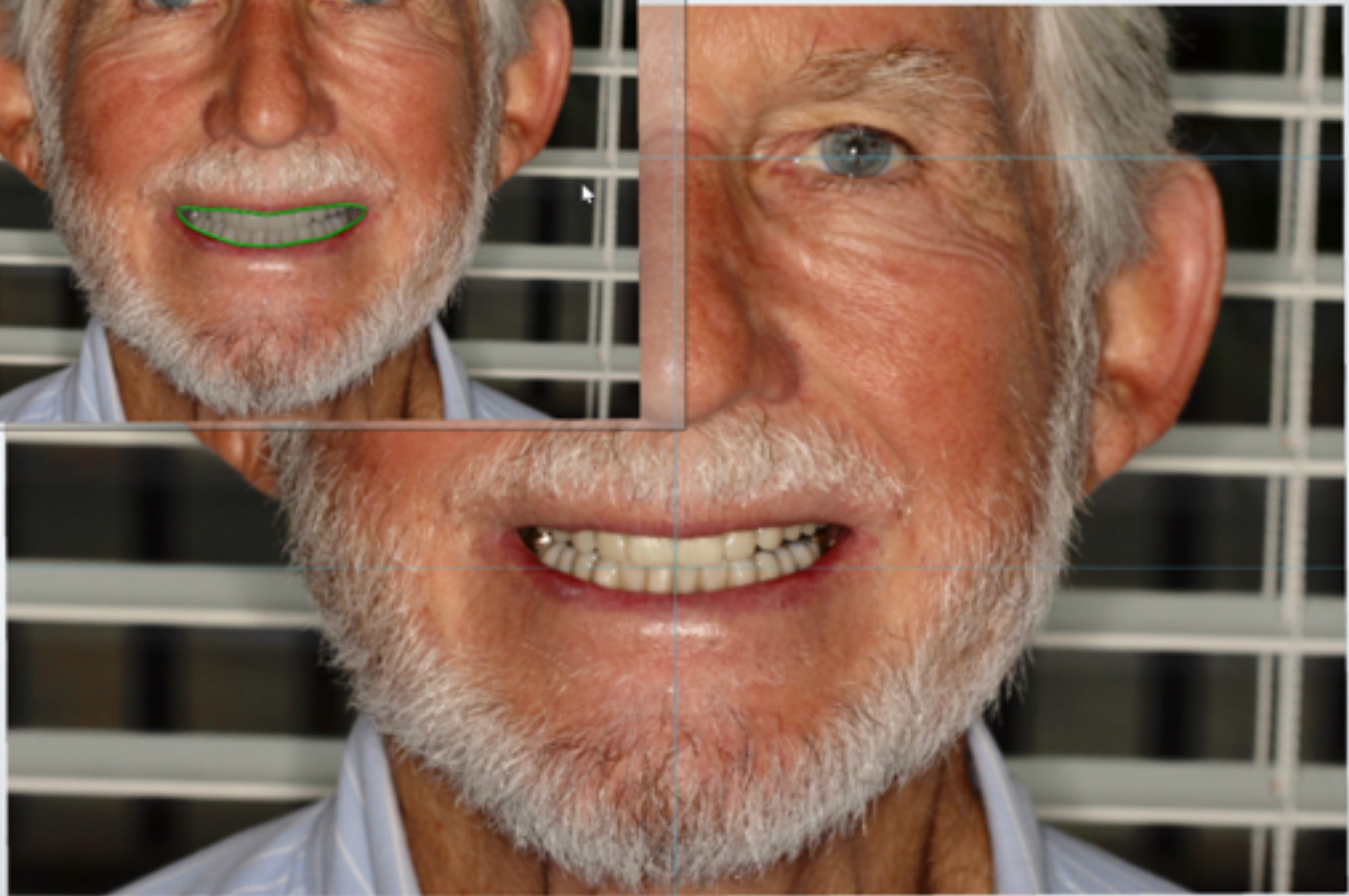
Wax knife

2.16 mm

5.0 μm

0.00 mm

1 2 3 4 5 6 7





### Anatomy design



Smile Composer

### Smile Library



### Sculpt

Multiple teeth tools

Single tooth tools

Smart tools

Connection to margin line

### Wax knife

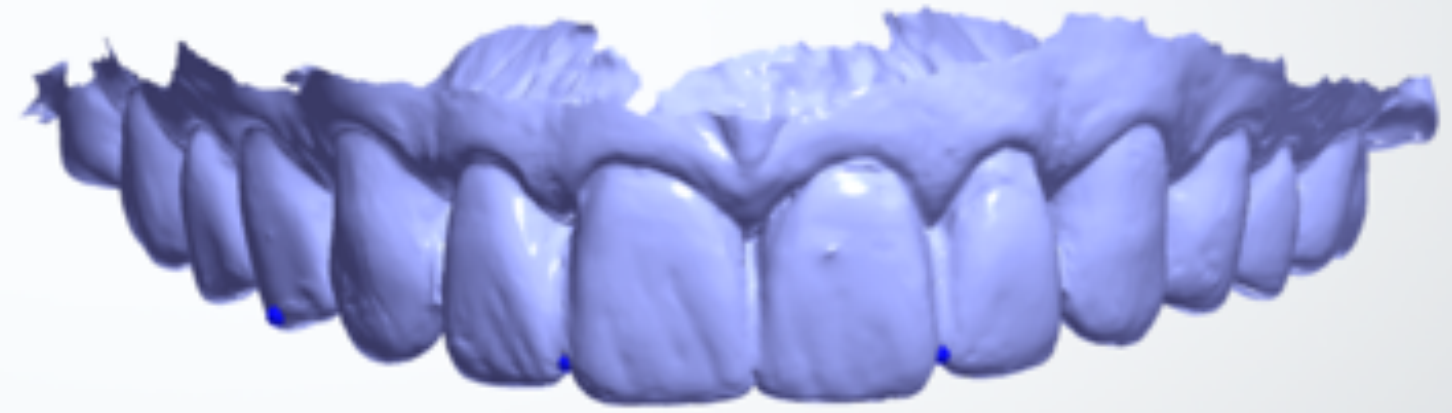
Wax knife settings including a red cross icon, a blue circle icon, and a green drop icon.

2.16 mm

5.0 μm

0.00 mm


Buttons 1 through 7






### Anatomy design

Crown 3



Smile Composer

### Smile Library



### Sculpt

Multiple teeth tools

Single tooth tools

Smart tools

Connection to margin line

### Wax knife

2.16 mm

5.0 μm

0.00 mm

1 2 3 4 5 6 7





### Anatomy design

Crown 3

### Smile Composer

Smile Library

Sculpt

Multiple teeth tools

Single tooth tools

Smart tools

Connection to margin line

Wax knife

2.16 mm

5.0 µm

0.00 mm

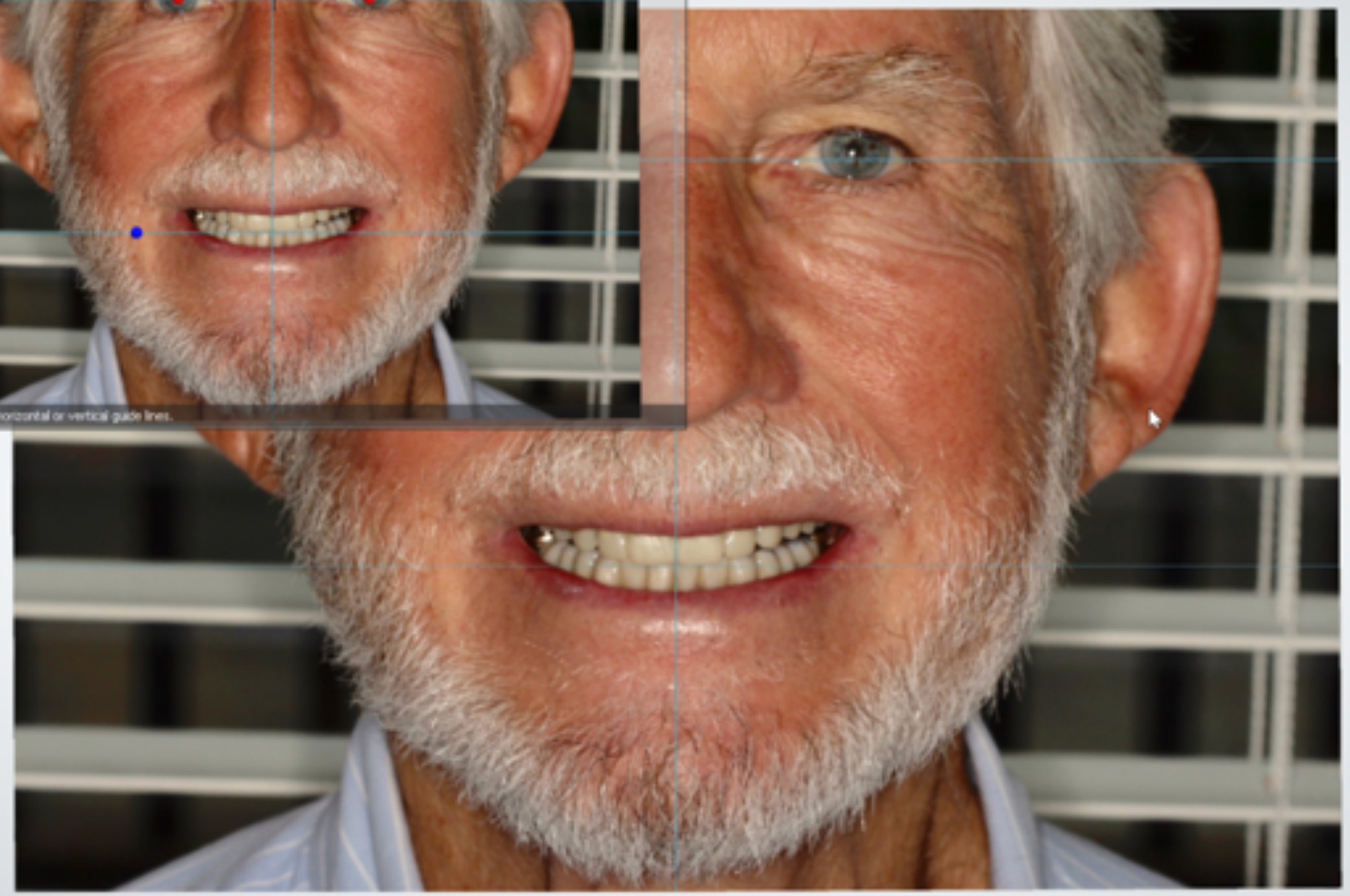
1 2 3 4 5 6 7

Sculpt protected surfaces

Lift anatomy off



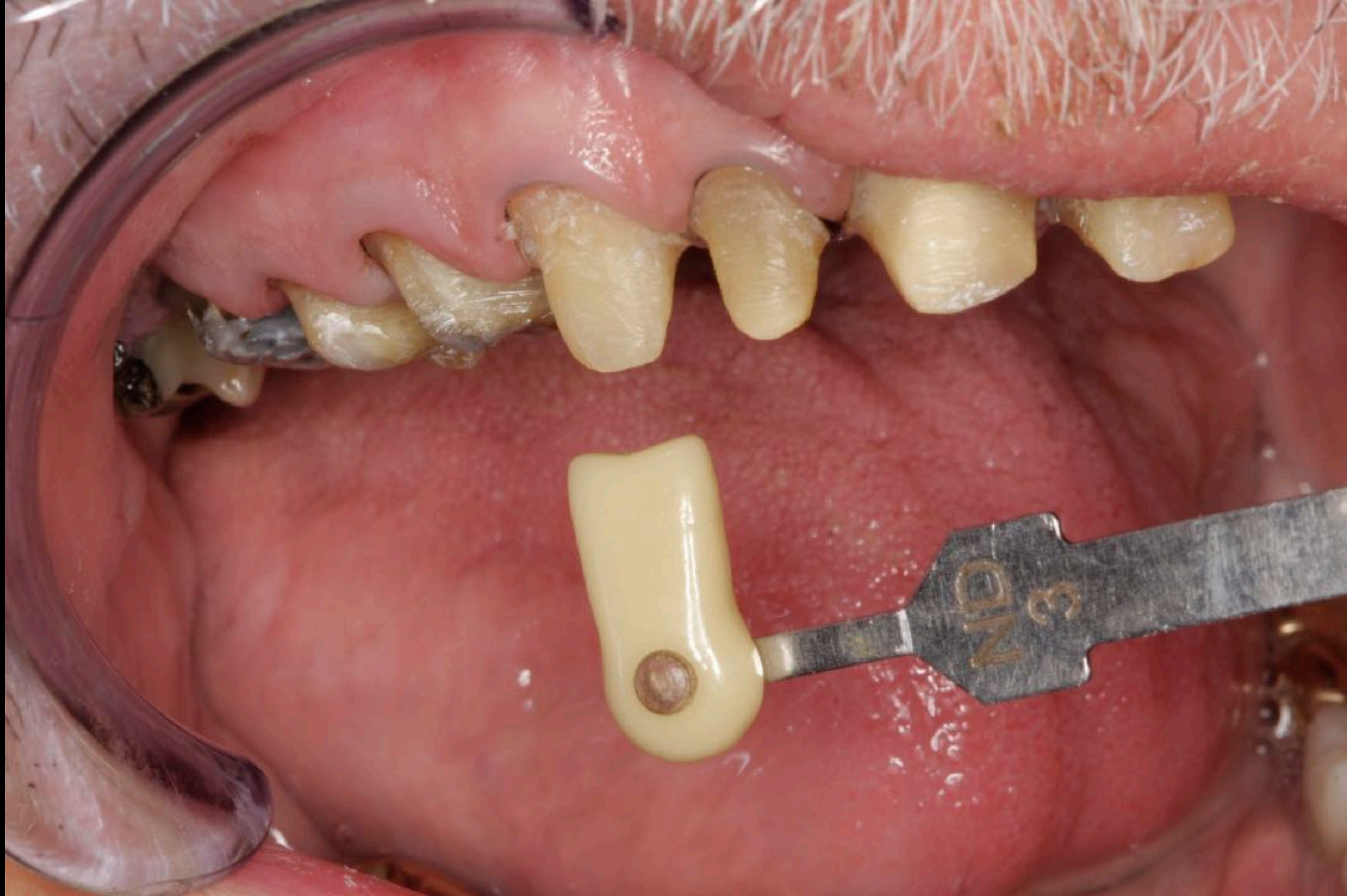
Click the buttons to add horizontal or vertical guide lines.























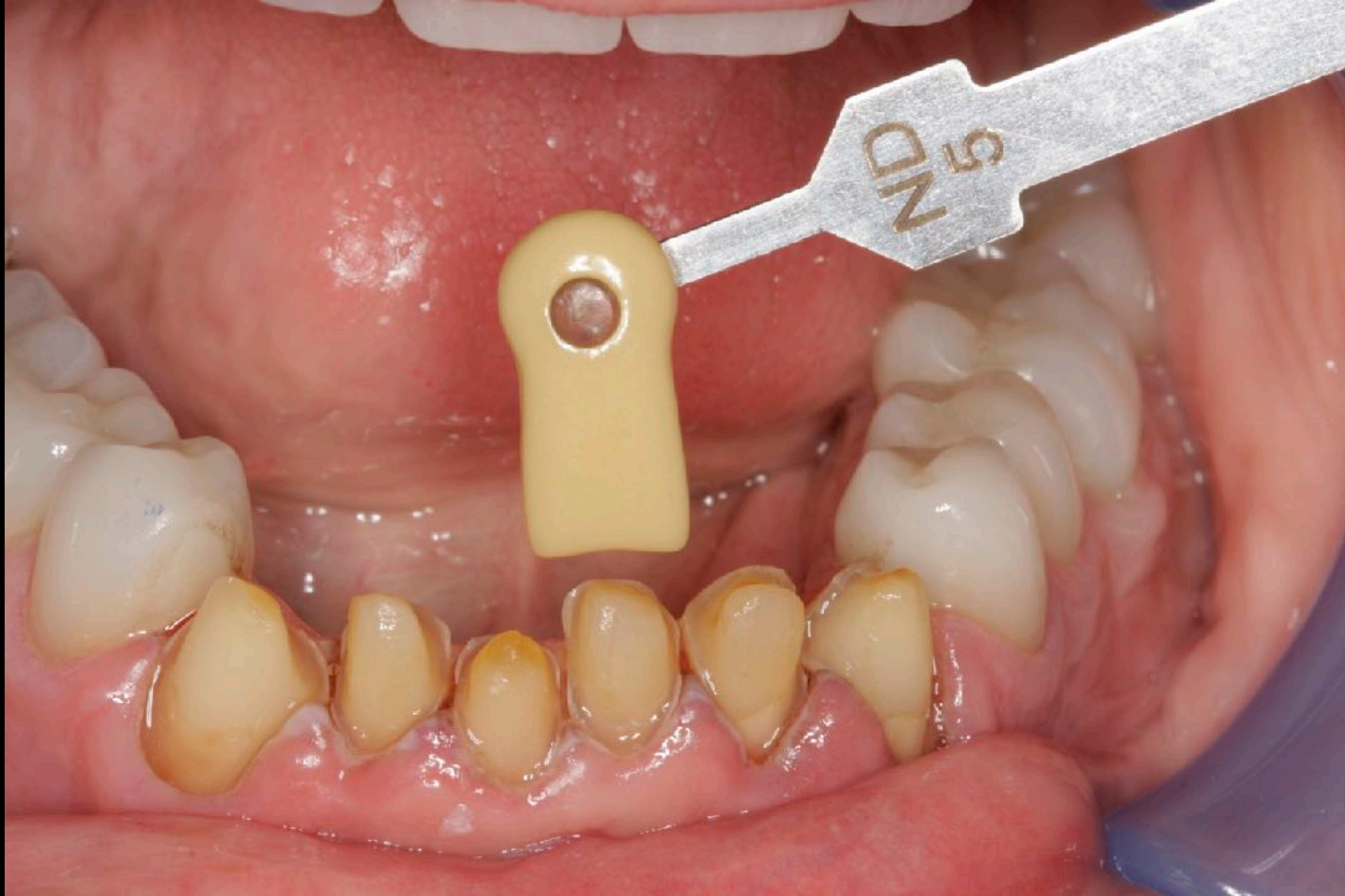








































































































































Ms. Faye





































































Russ







































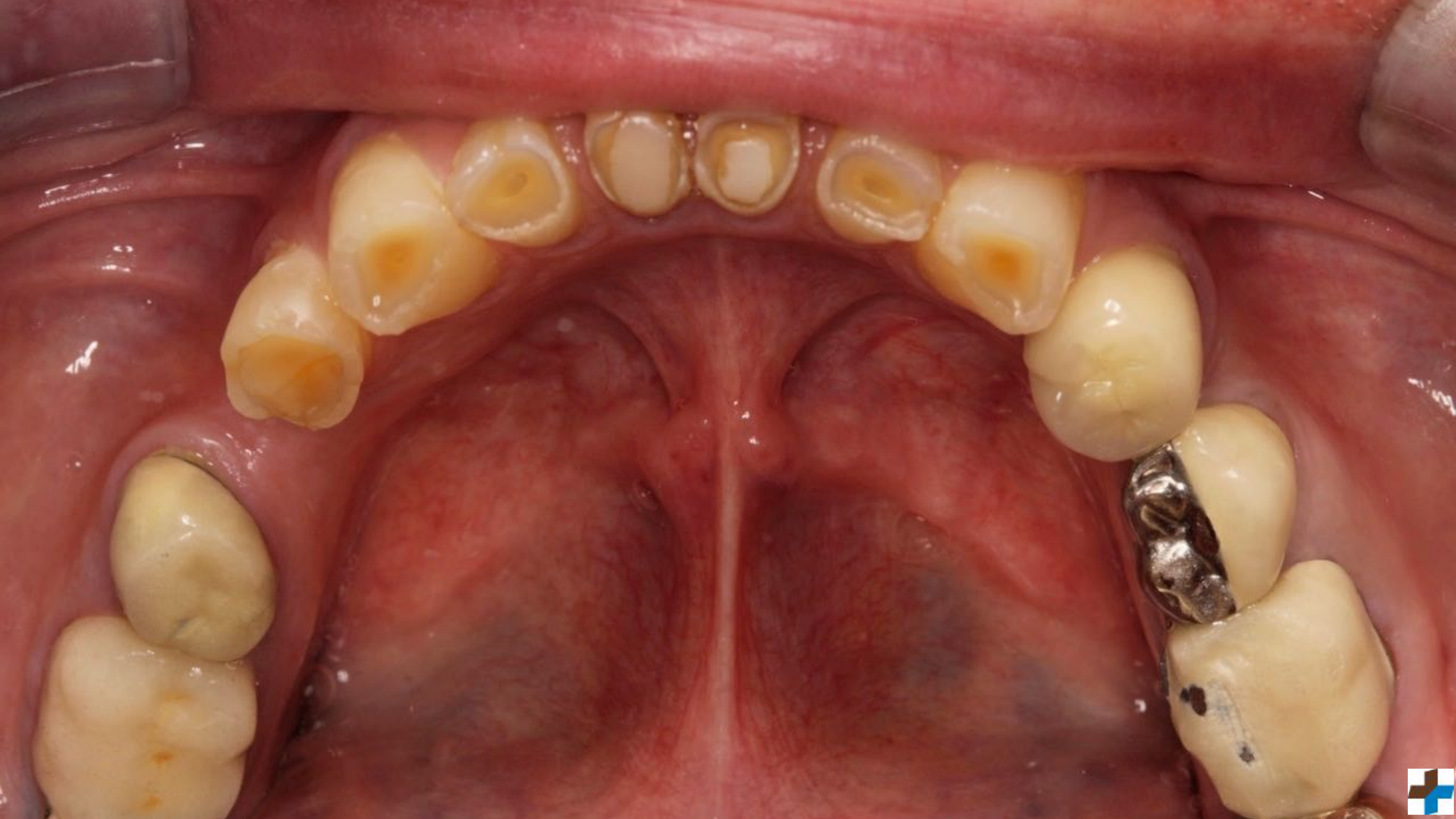






































# Centric Relation for Dummies



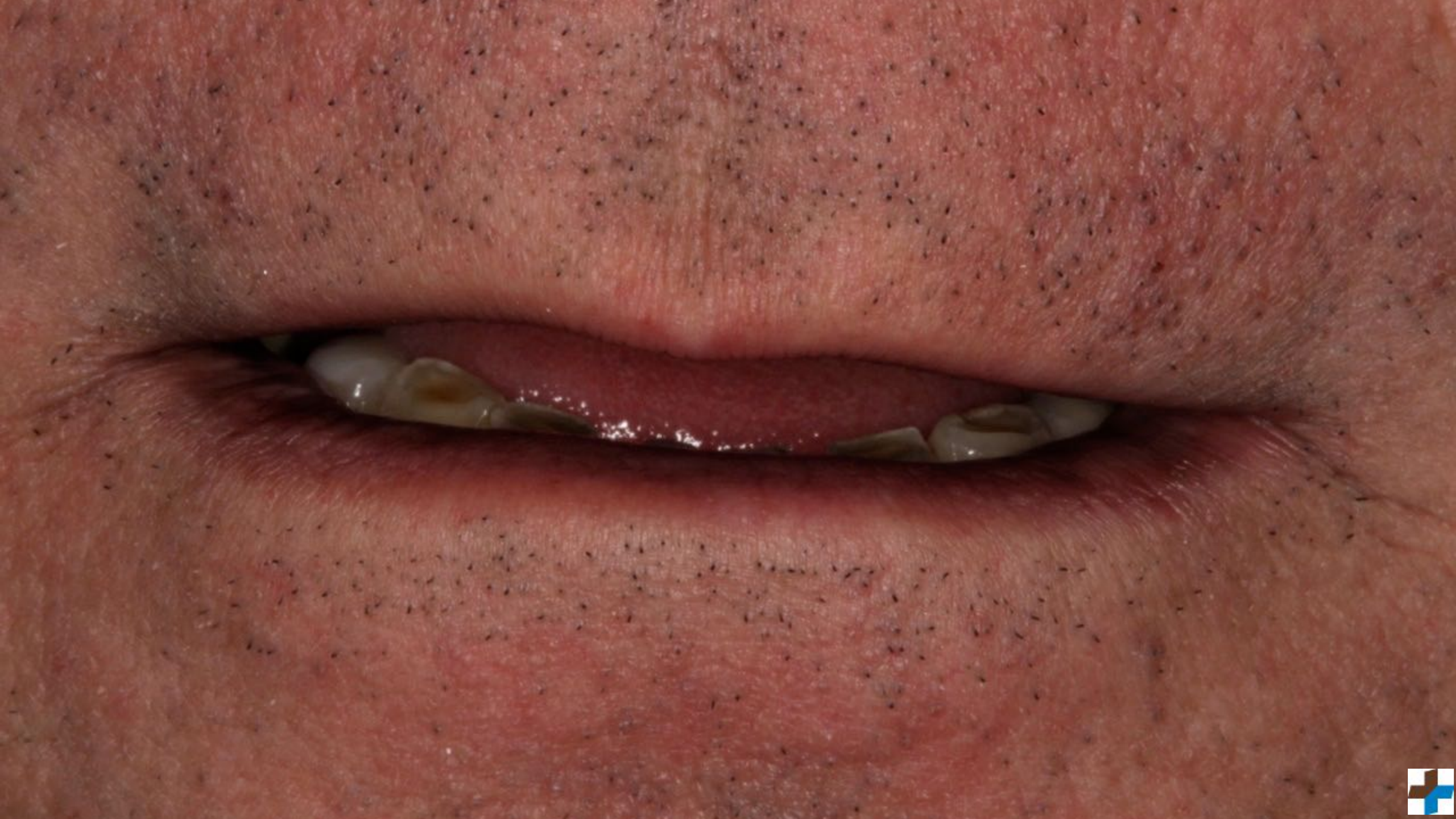
























































































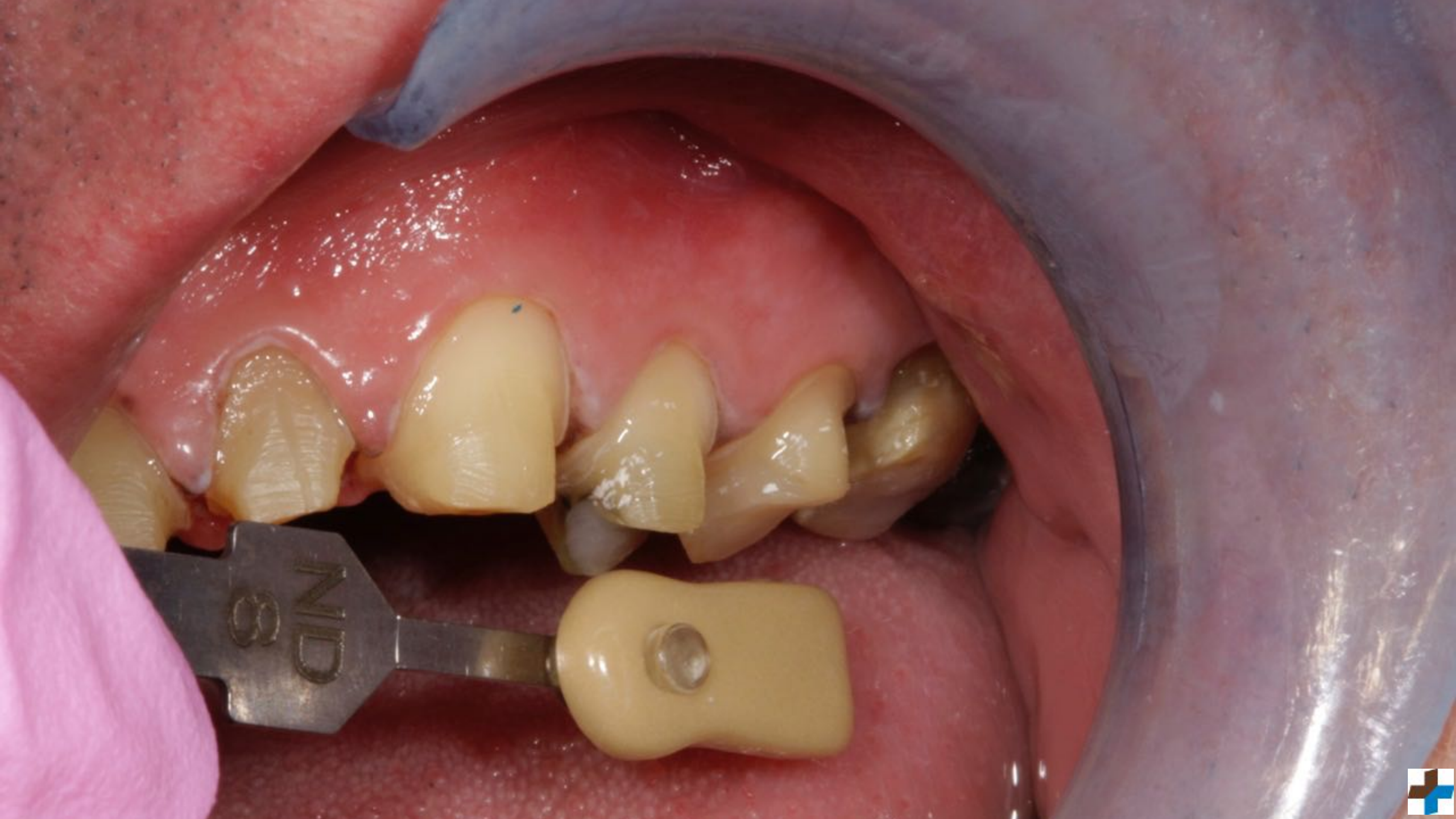
























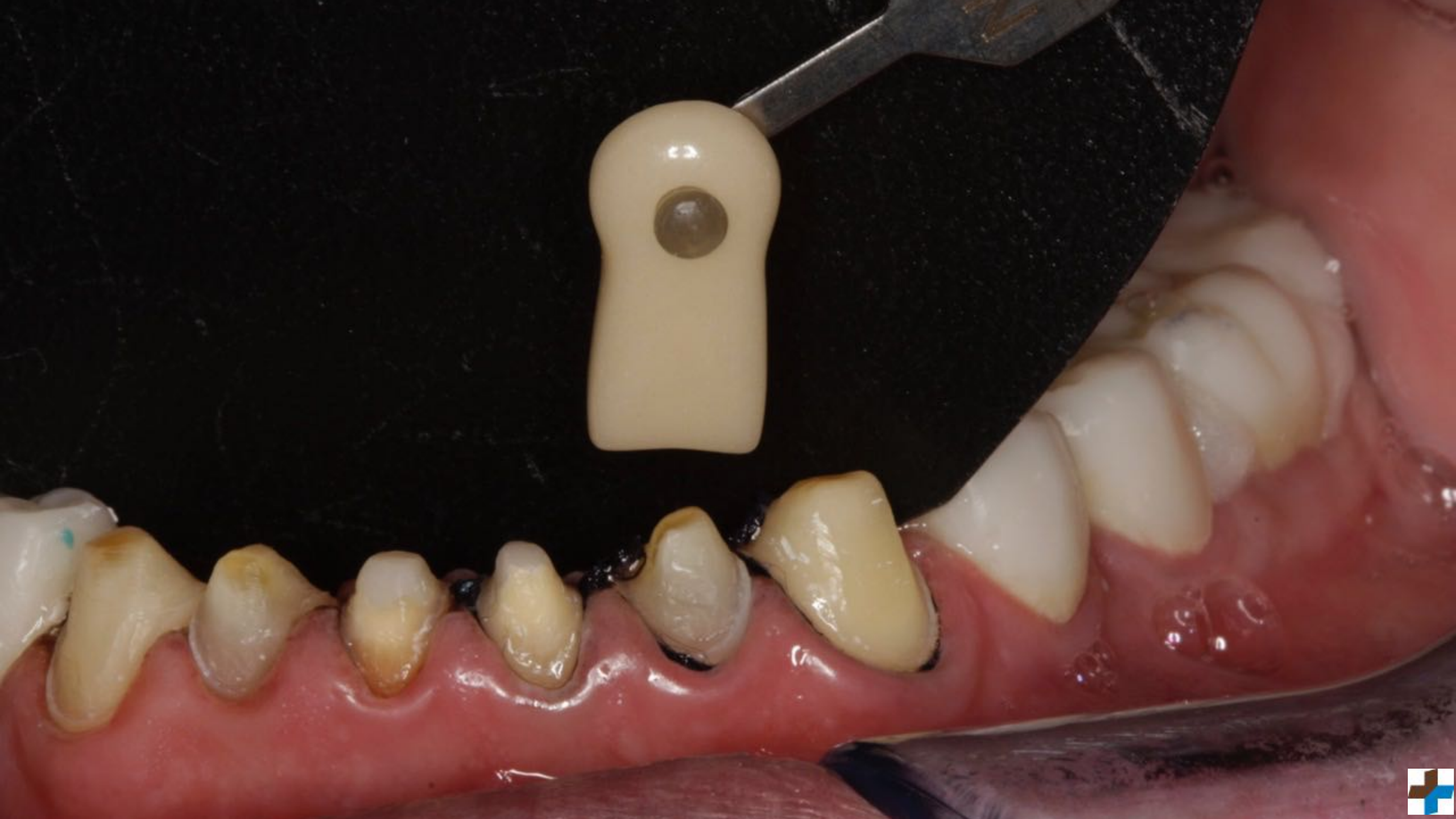








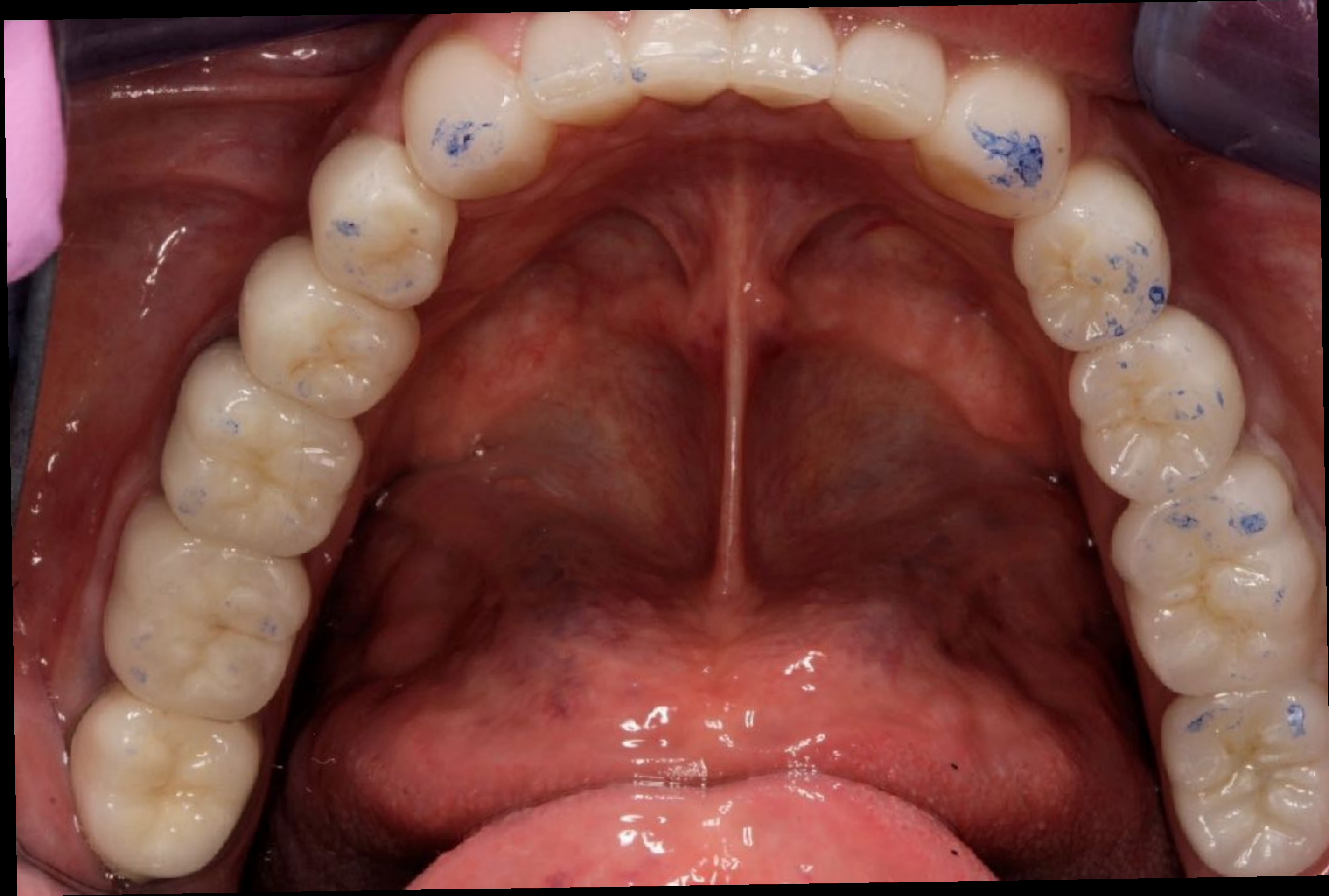




































































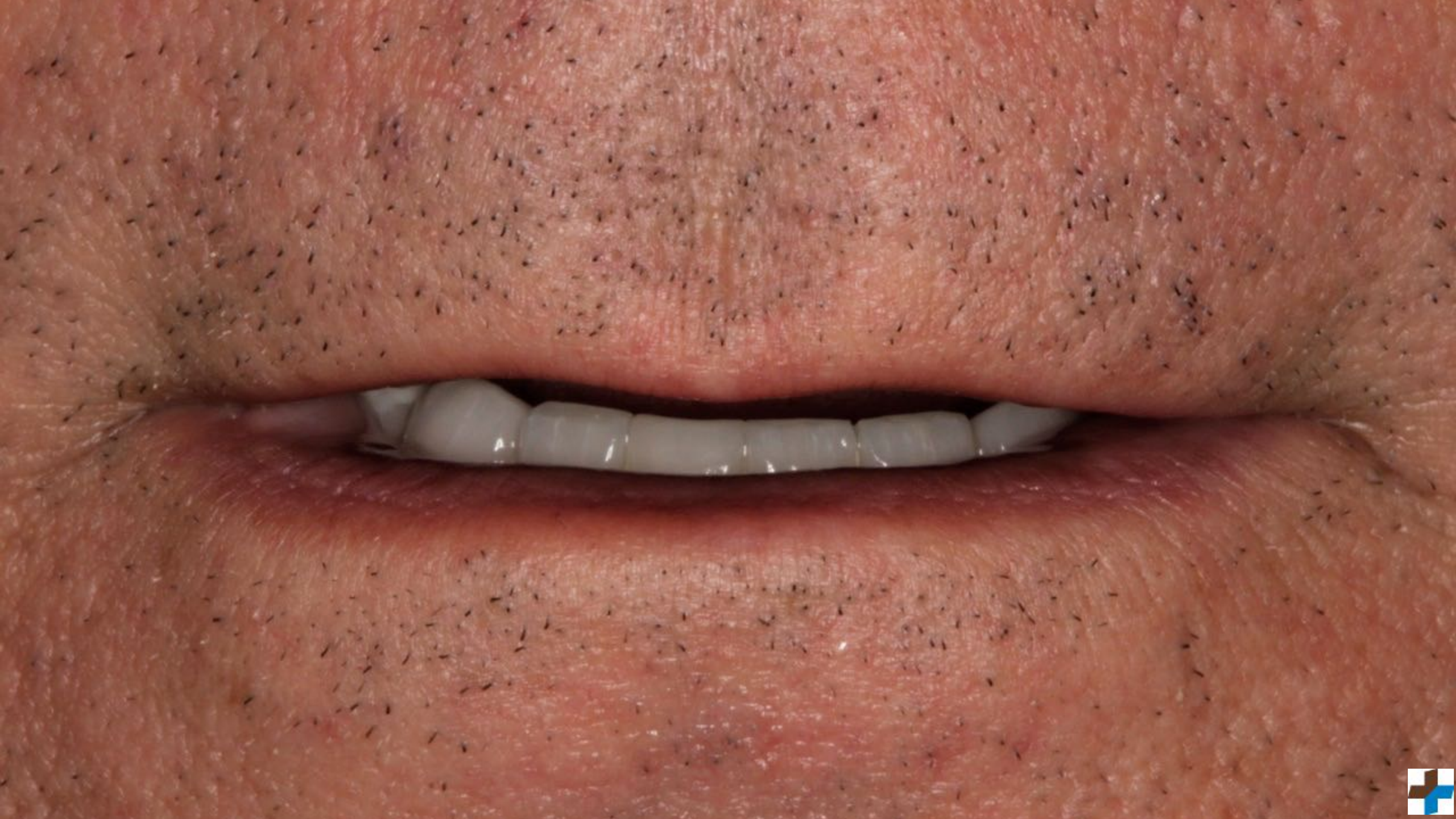
















































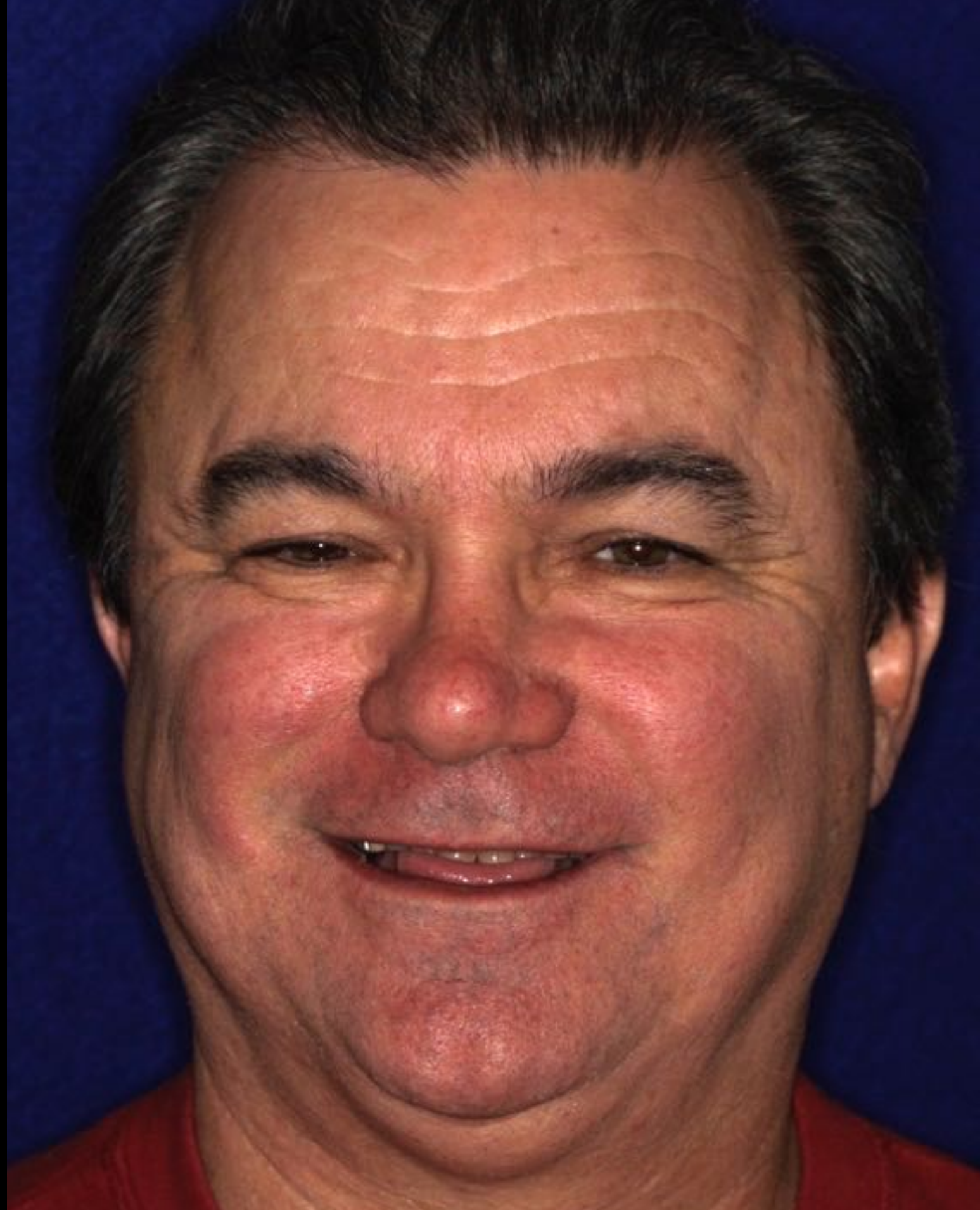














# Simplifying complex restorative cases

Chris W. Campbell, DMD







I love to have fun with what we do.







*What's a  
picture  
really  
worth?*





# Agenda for the next hour-ish

- An BRIEF overview of camera systems
- What to buy and camera settings
- Storing, sending, and presenting images
- A standard photographic series
- Some useful pearls on how to use photography in your practice
- Artistic photography







Oh, I forgot one other bullet on the agenda...



# Camera systems

## 3 basic categories

- Point and shoot (\$500-\$1000)
  - Pentax Optio WG-3 (Dive)
- Point and shoot with ring/manipulated flash (\$1500)
  - Canon G16 (Photomed kit)
- SLR with ring flash (\$1600-\$3500... and up)
  - Canon rebel T5i, Canon 80D, others





# Point and shoot

Pentax Optio WG-3  
purchase online for \$300

OR

from Dine  
for \$695  
w/ “special settings”





# Point and shoot w/ manipulated flash



FYI, these attachment kits are \$699!





# SLR





# Our camera(s)

- Canon 40D
- Canon MR-14EX ring flash and MT-24EX dual point\*
- Canon 100mm f/2.8 USM macro lens





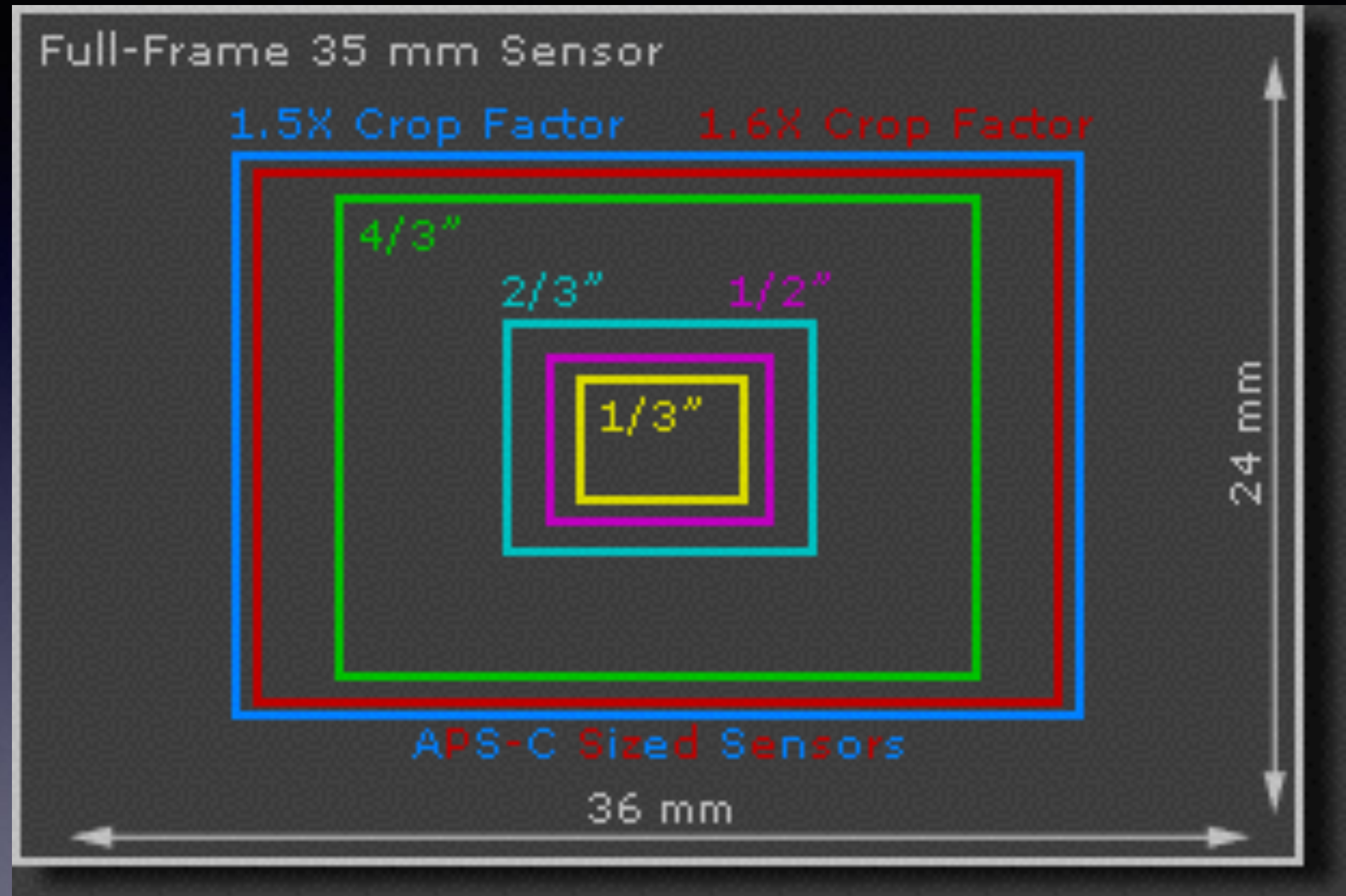


Megapixels???

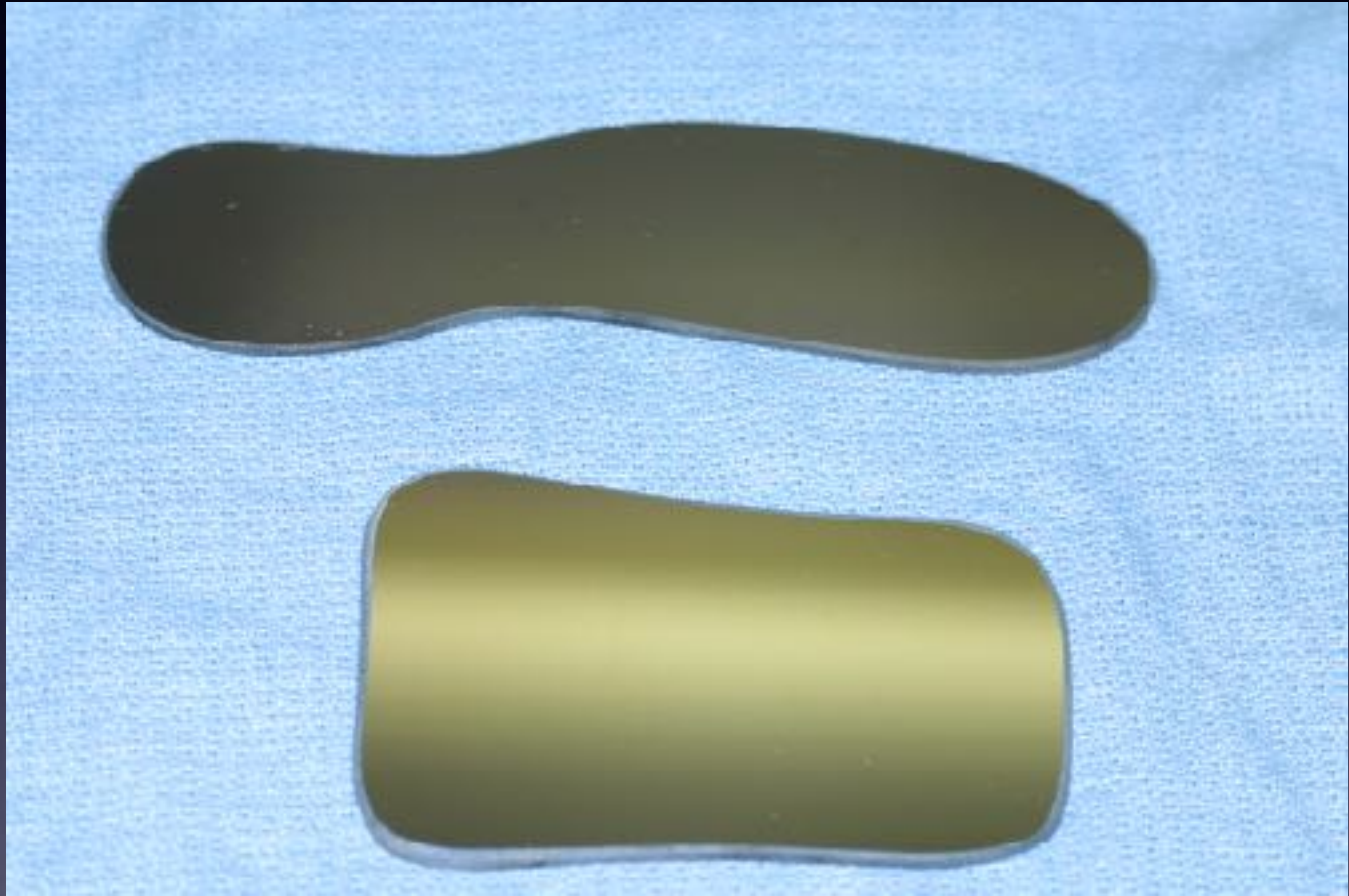
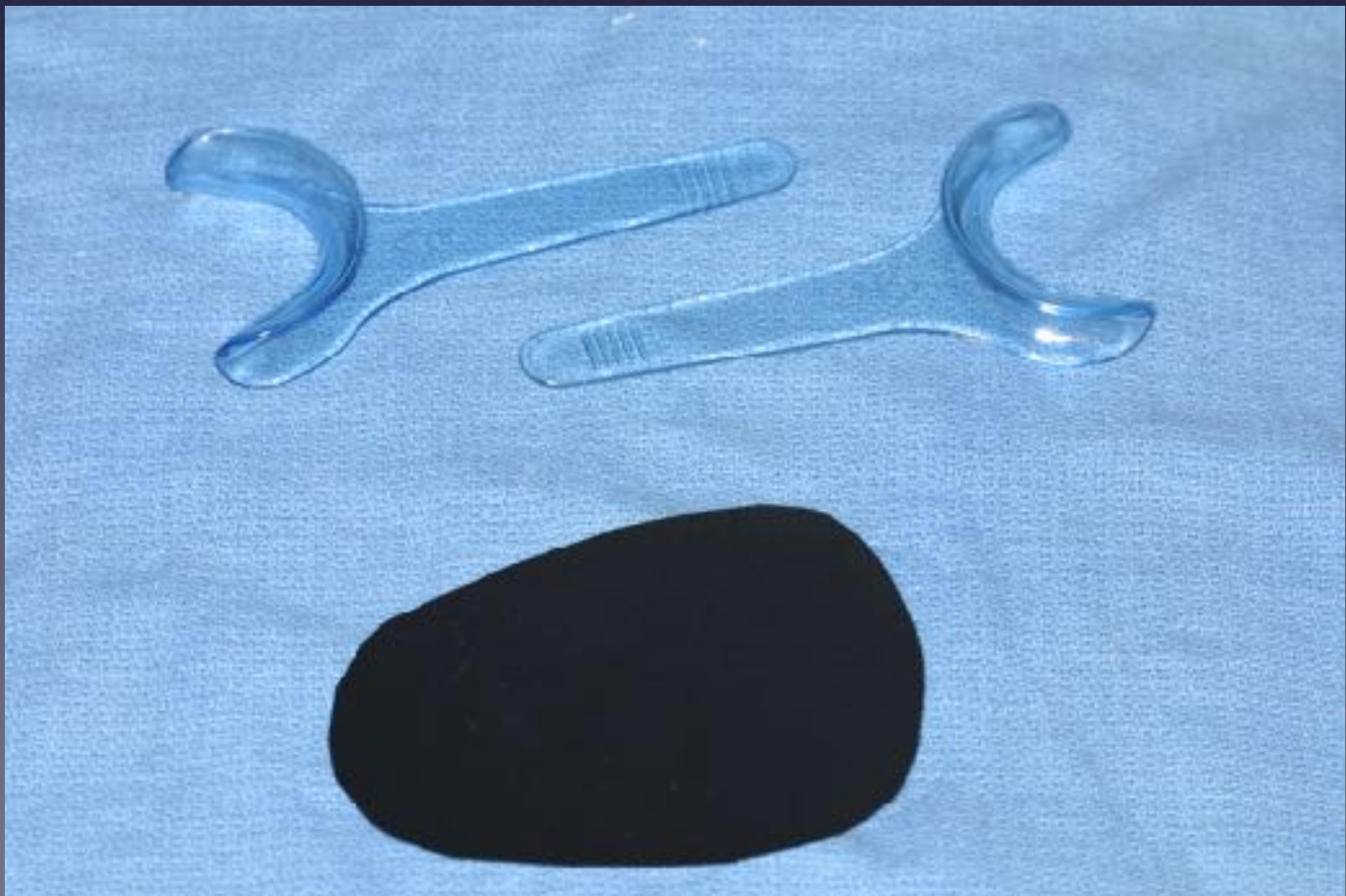




# Sensor size...







Tools  
of  
the  
trade





# Black Background





Metz 15 MS-I  
\$399



canon 270EX II  
\$320 for two... plus the R2 bracket \$279





# If I were buying today!

- Norman Camera [www.normancamera.com](http://www.normancamera.com) (you want any support)
- B&H Photo [www.bhphotovideo.com](http://www.bhphotovideo.com)
- Rebel T6i \$599 (with 18-55 lens), 80D \$999 (body only)
- Canon MR-14EX flash \$549
- Canon 100 mm f/2.8 USM macro lens \$599
- Grand total **\$1747 (\$2147)**





Settings...  
some are just  
better than others





# Dental macro photography



- Macro photography vs. Dental macro photography is all about depth of field
- Do not use “macro” setting on camera (unless photographing x-rays)





# White Balance (5200-5800K)



or



Daylight

Flash





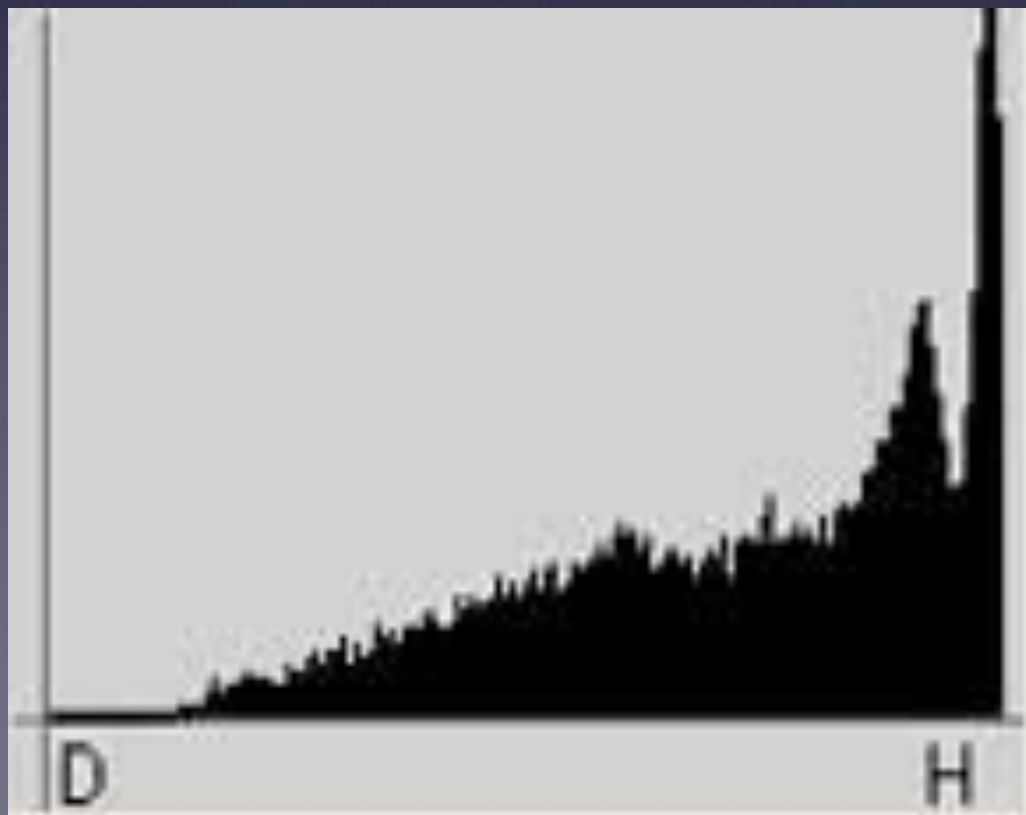
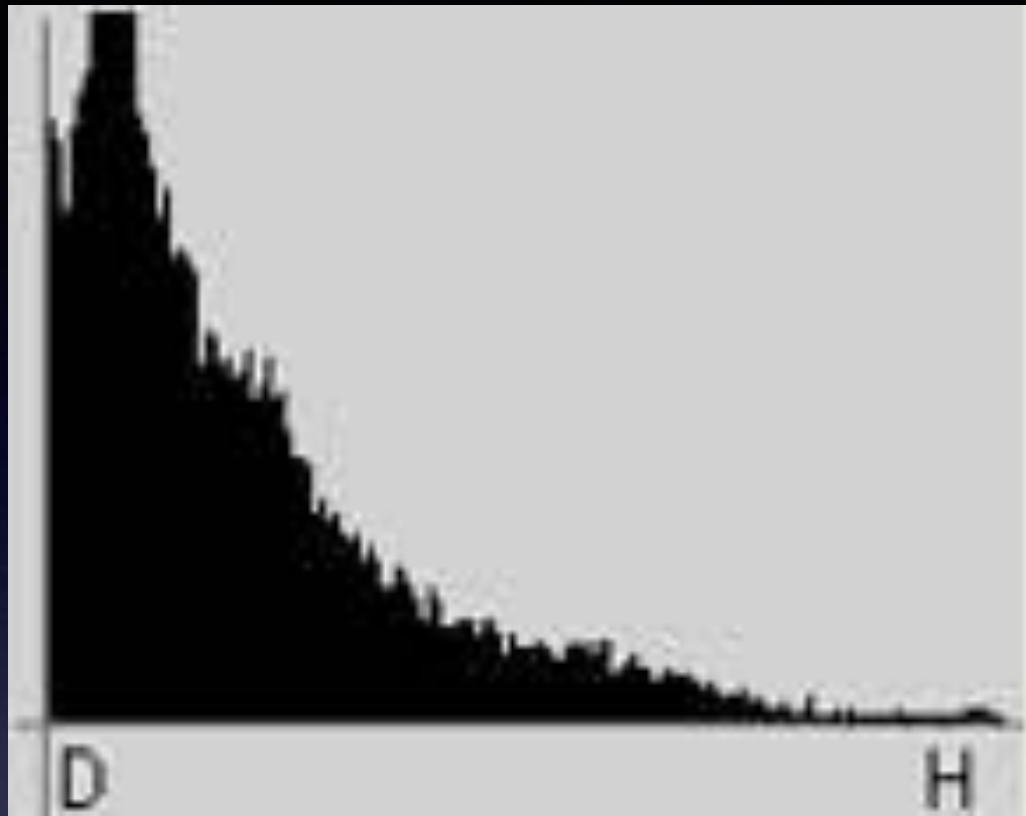
# Flash settings and F-stop (aperture)

- TTL (Through The Lens)
- Manual
- If using TTL, you may only adjust F-stop twice (4-5 if eyes in photo, 25 intra-oral)
- If using manual, more adjustments (4-5 for portraits, 11 eye-chin, 22 smile, 32 1:1)... BUT better consistency for shade





# Histograms





# How I set the Canon

- “Film” speed - ISO 100
- Flash - ETTL for general, M for “critical” shade
- Color space - Adobe RGB
- Picture style - Neutral
- Shutter speed - 125
- WB - “flash”
- F-stop - (5.6 portraits, 11 “eye to chin”, 25-32 intra-oral)





# Sending images

- Digital camera media (i.e. compact flash, SD, XD, memory stick, etc.)
- Prints
- CD
- Flash drive
- Email
- Dropbox, google drive, iCloud, box, etc, etc







# Patient Presentation





- Photos or My Pictures

- **TIME!**

- Use mouse or laser pointer for emphasis
- More flexibility during consult
- Not as slick as PPT/Keynote



# Two basic options

- PowerPoint/Keynote

- Customize to each patient
- Use of arrows, lines, text, etc. for emphasis
- Ability to import other media (e.g. other similar cases, before and afters)
- Templates available for quicker presentations

- **TIME!**





# Downloading and storing images

- Downloading

- Straight from camera (USB)
- PC card adapter or memory card slot
- Card reader (USB)
- Eye-Fi



- Storage/Organization

- Office software (Macpractice, Eaglesoft, Dentrix, etc.)
- Camera software (bundled with camera)
- Purchased software
- Photos or My Pictures











# Photographic Series





# Lip at rest

- Ask patient to let their lips relax and part slightly or say “Emmma”
- Important to begin to determine incisal edge length
- 3-4 mm is considered “youthful”... but must be taken with a grain of salt





# Smile

- Critical shot for before and after shots
- Make sure it's right, b/c once you start the case... you can't retake it!
- Incisal edges should follow lower lip line (including shape, but not necessarily symmetry)
- Manipulate tooth display, exaggeration if needed... or the reverse!





# High (Fake) Smile

- As high as the patient can stretch
- Helps to determine margin placement on anterior restorations
- Can (and will) change post orthognathic surgery





# Lateral smile



Centered on the lateral, extending to the facial profile of contra-lateral central





# Fully retracted



- Focus on the cuspids, not the centrals to optimize depth of field
- Have assistant pull slightly forward on retractors...not back or sideways





# Black background



- Use non-reflective side of plastic
- Metal contrasters can be difficult to use in narrow arches/small mouths





# Occlusal arch



- Try to avoid getting direct view of teeth in image
- Ideal to get facial surface of centrals and 2nd molars (TOUGH)
- Patient holds retractors, assistant holds mirror and air water syringe





# Occlusal/lingual quadrants



-Bread and Butter shots

-Patient holds retractor  
-assistant holds air syringe  
and mirror

-doctor helps position  
mirror

-frame all posteriors or  
distal of cuspid back  
(personal preference)







# Portrait/profile

- Frame head, not hair
- Long hair pulled behind ear





# Photo shoot demo





Shade tabs





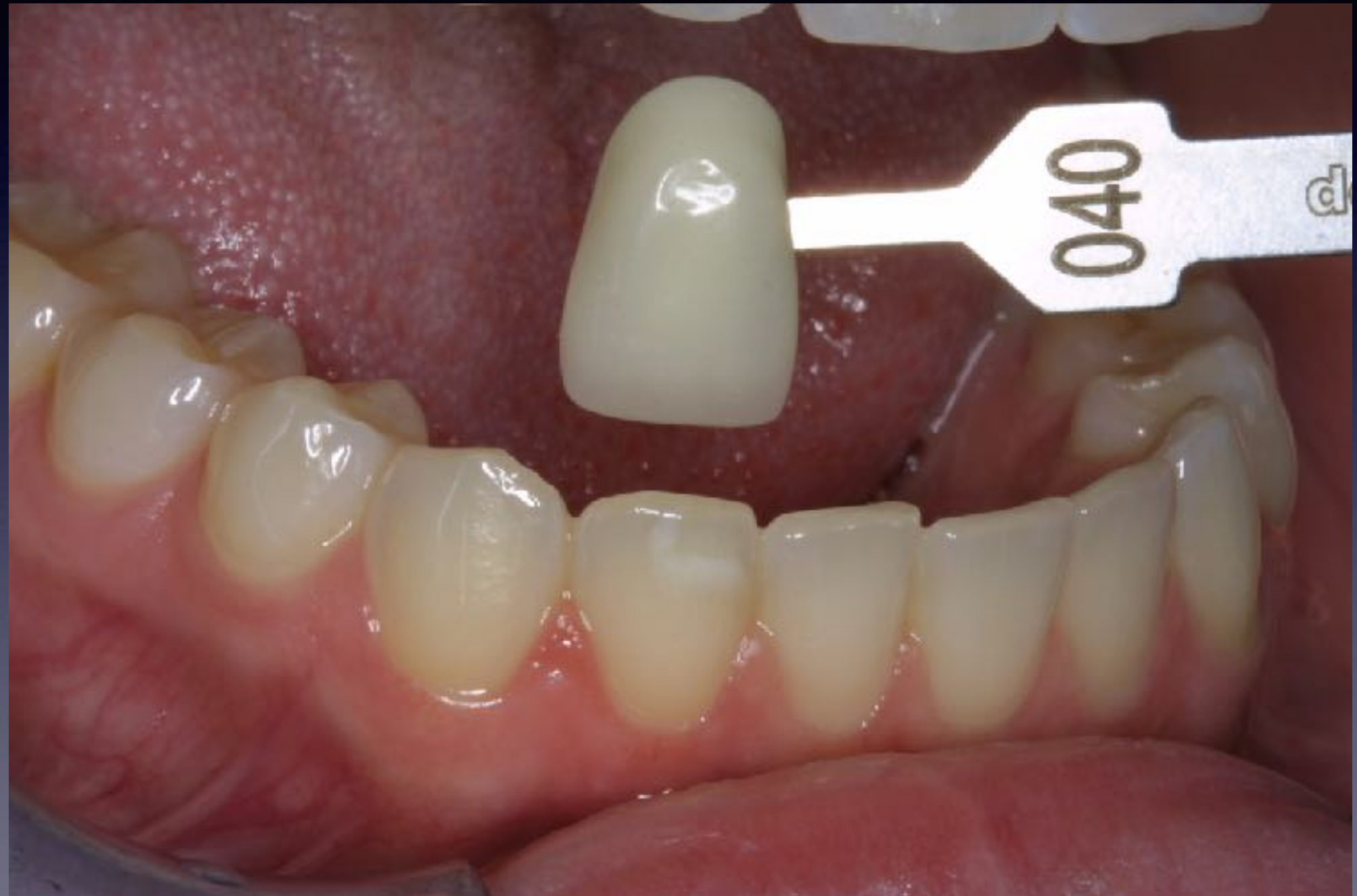


Angle camera slightly downward



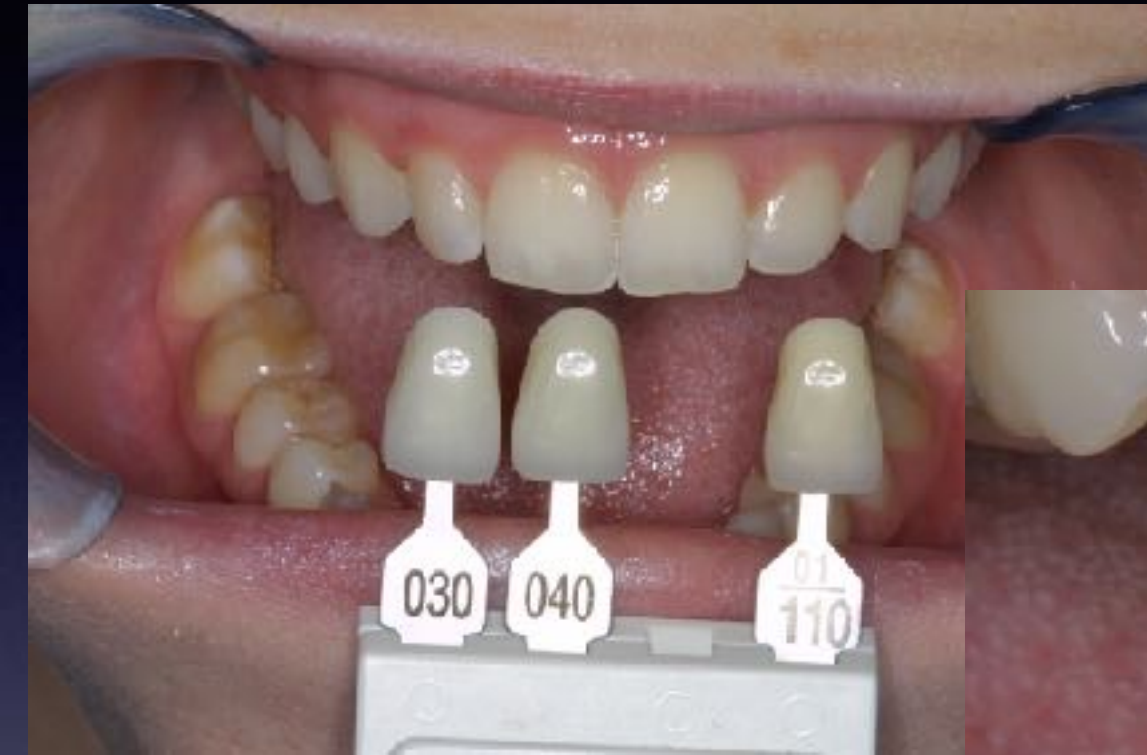


Keep tabs in the same plane as the teeth





# Multiple vs. single tabs







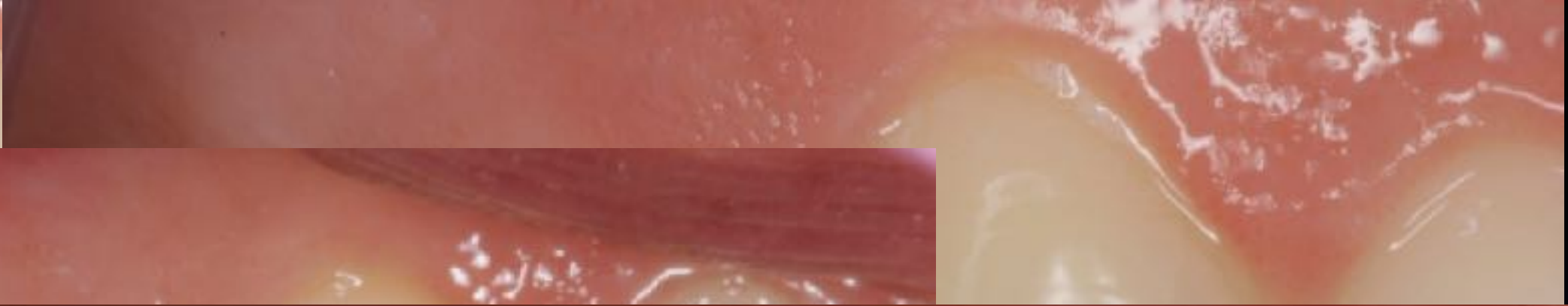








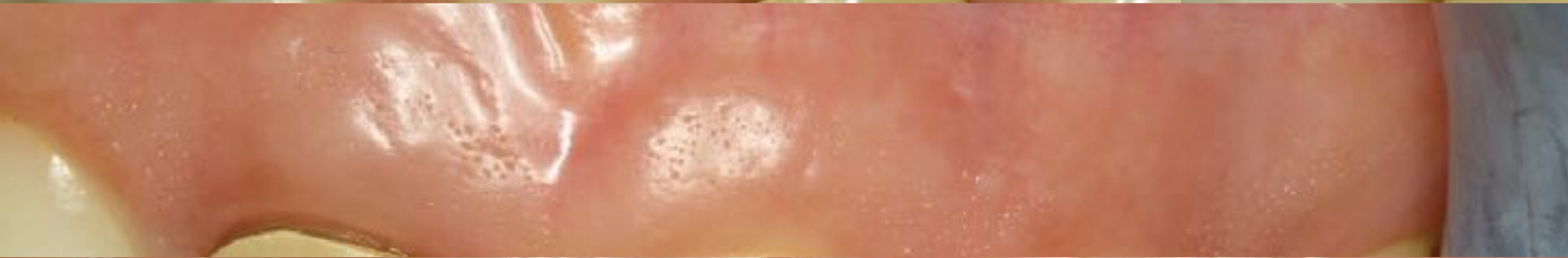






































C.Y.A.













3

. DUNI



























*Artistic  
photography*

















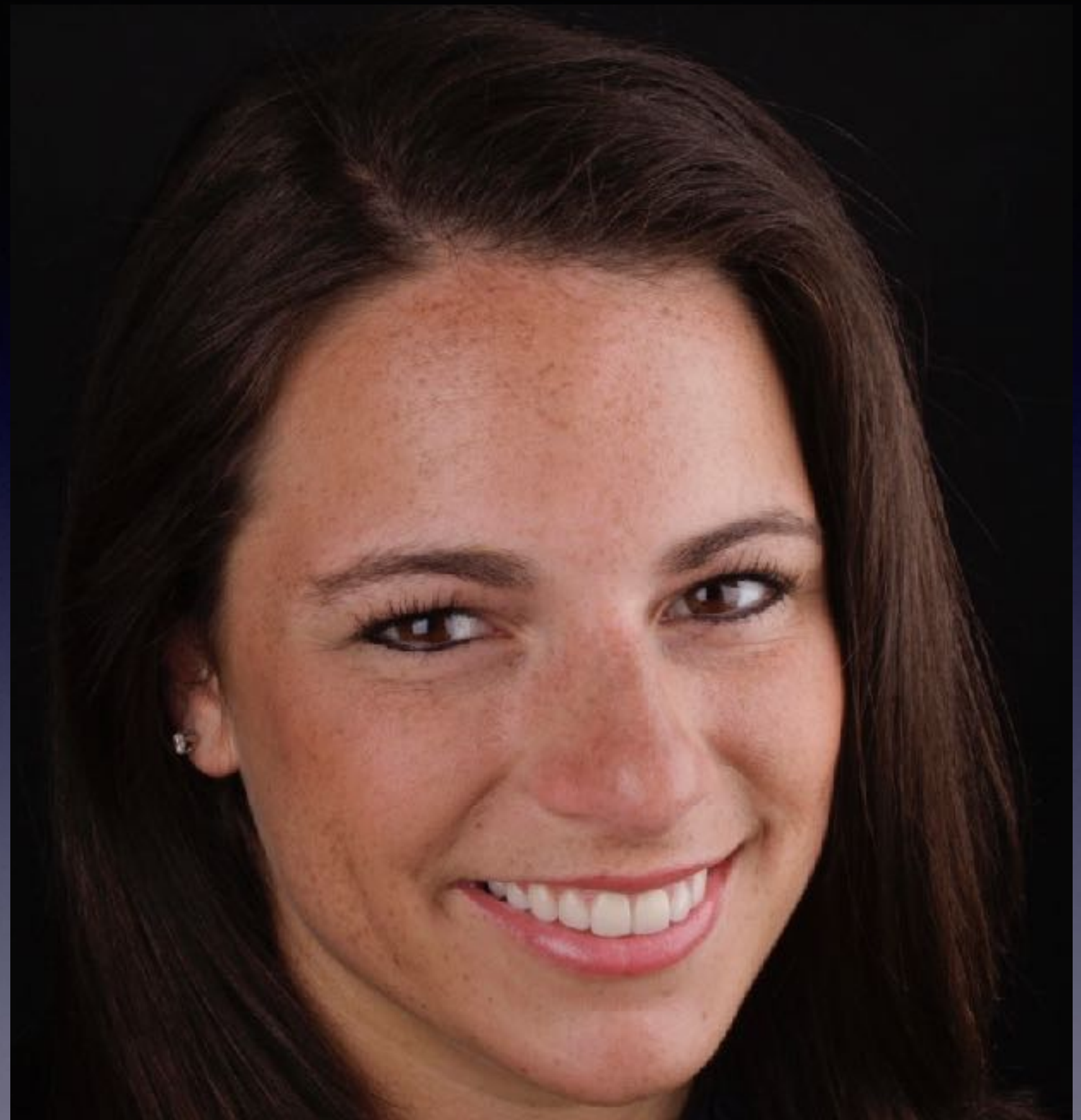














Using e.max with implants







Calibra™ Universal



















Immediate provisional after uncovering









































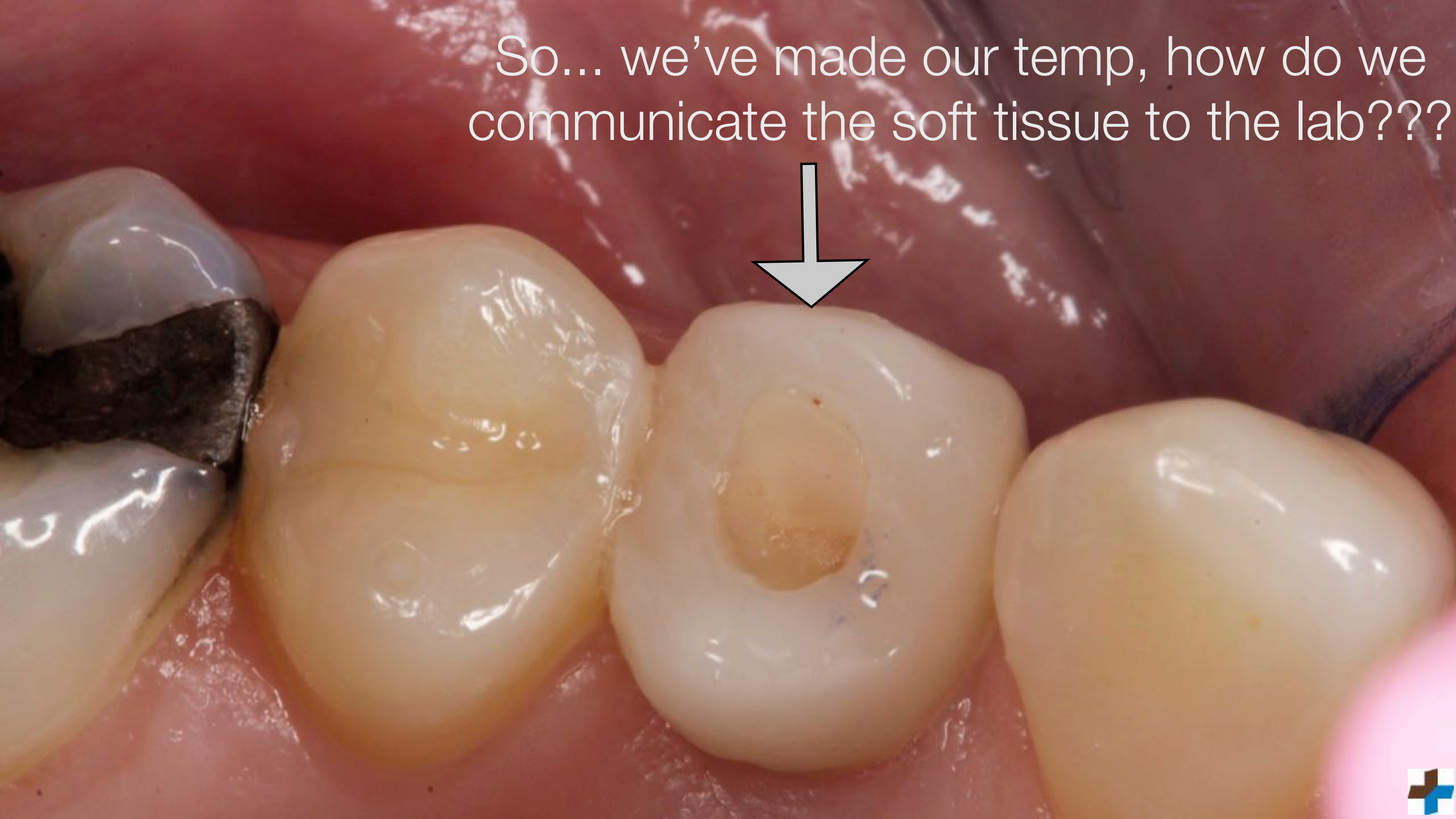








So... we've made our temp, how do we communicate the soft tissue to the lab???







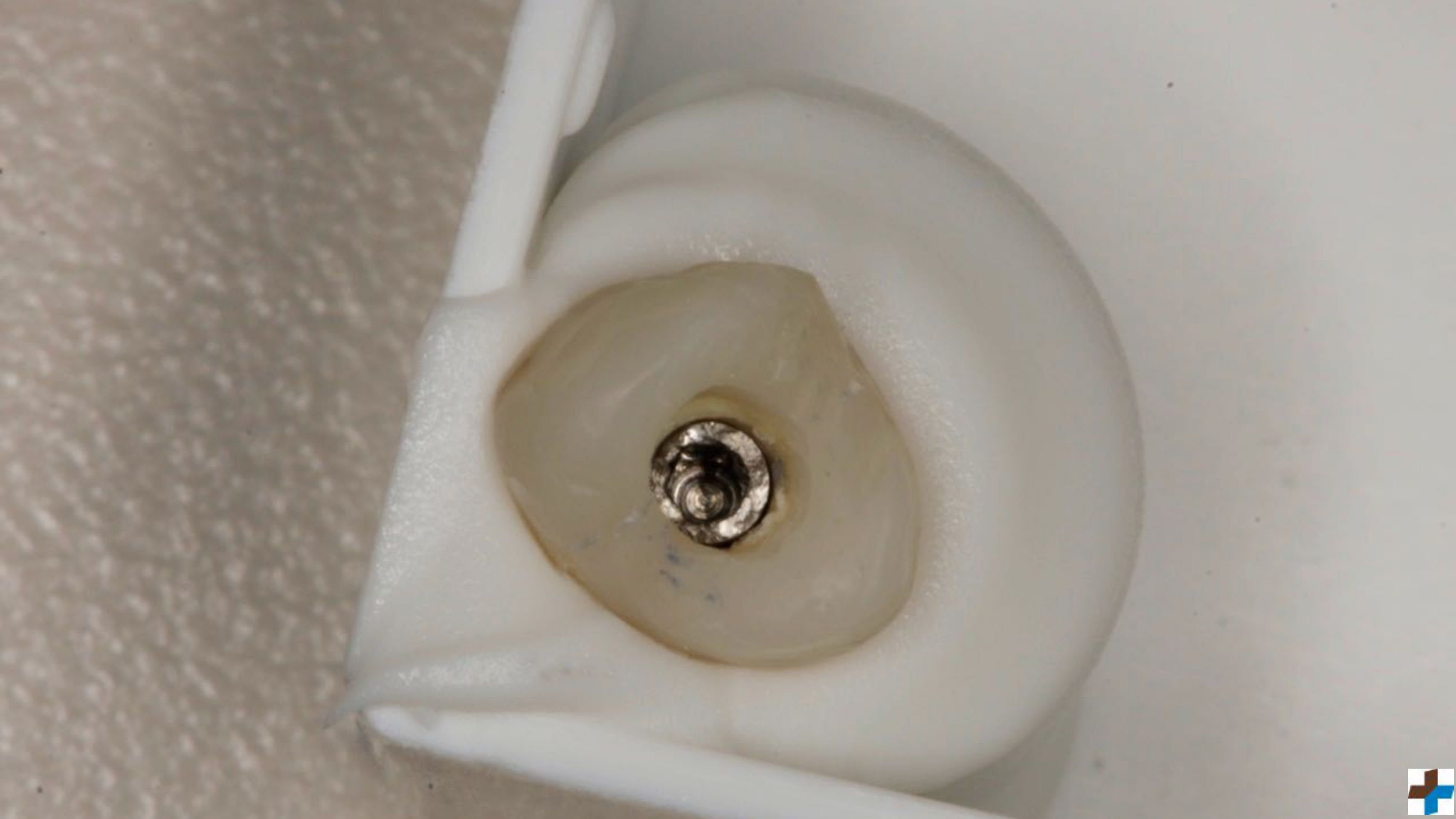




















**LuxaFlow 4.5g**  
*Flowable light cure provisional*



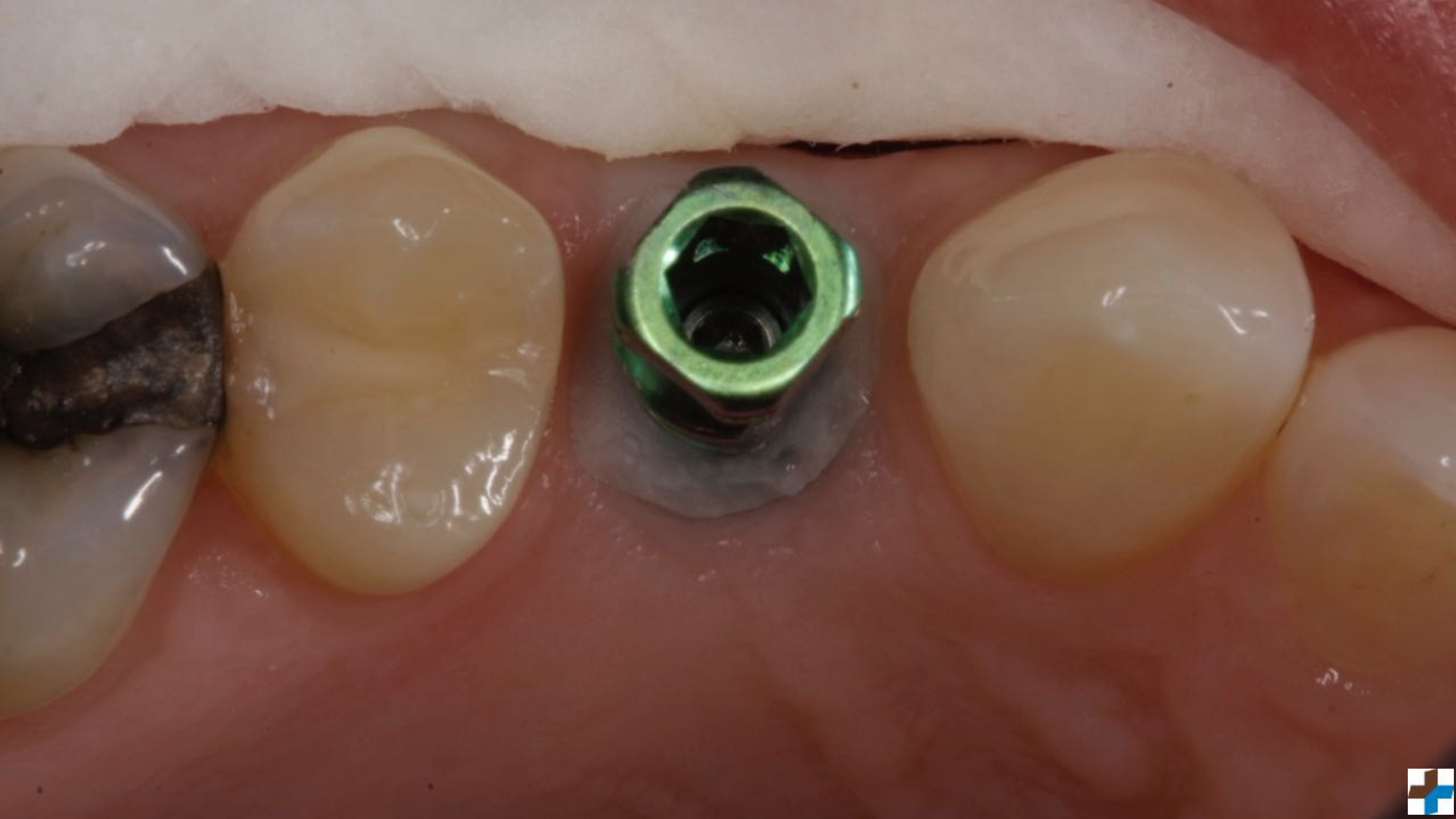












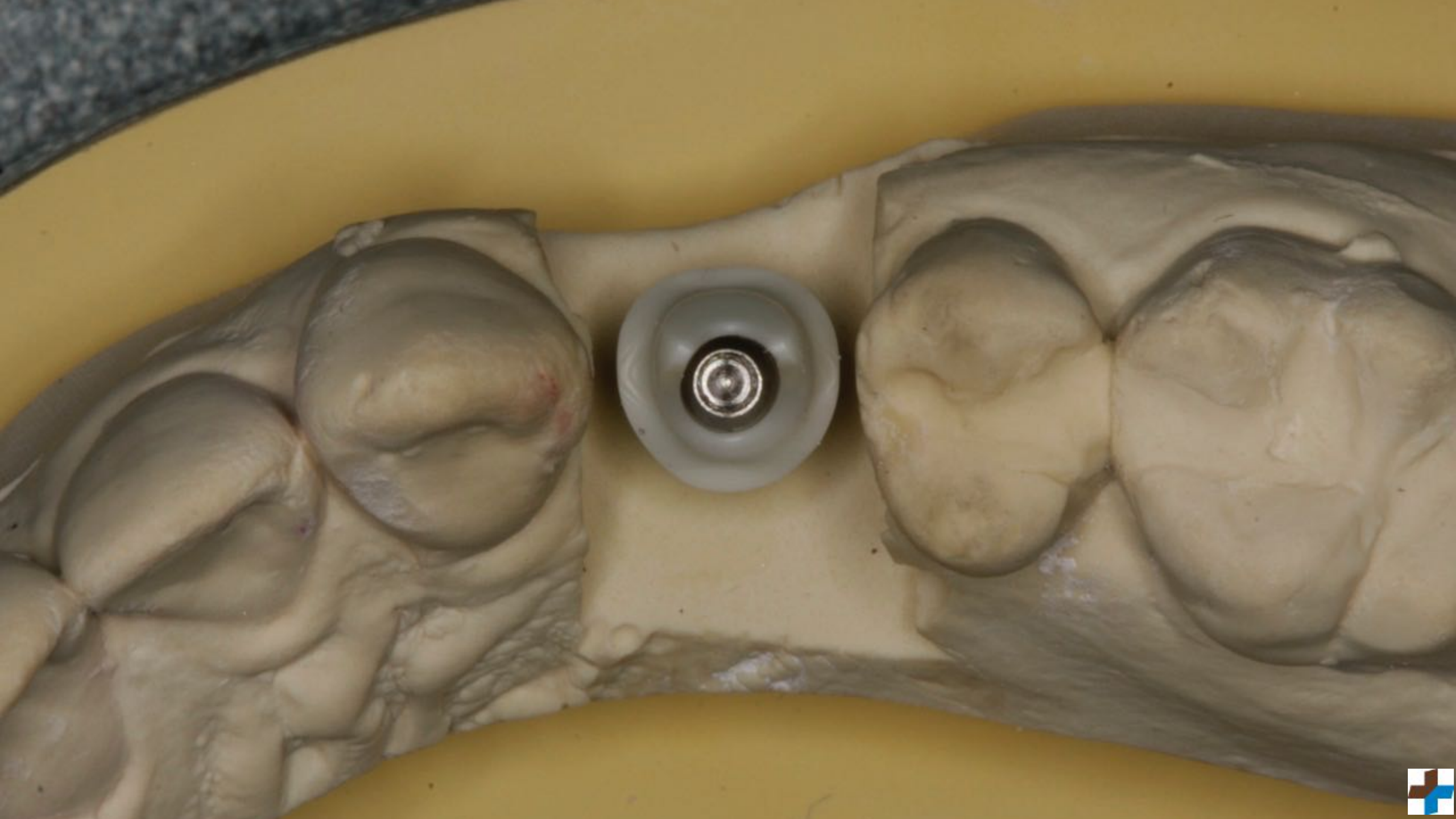


































Tom















































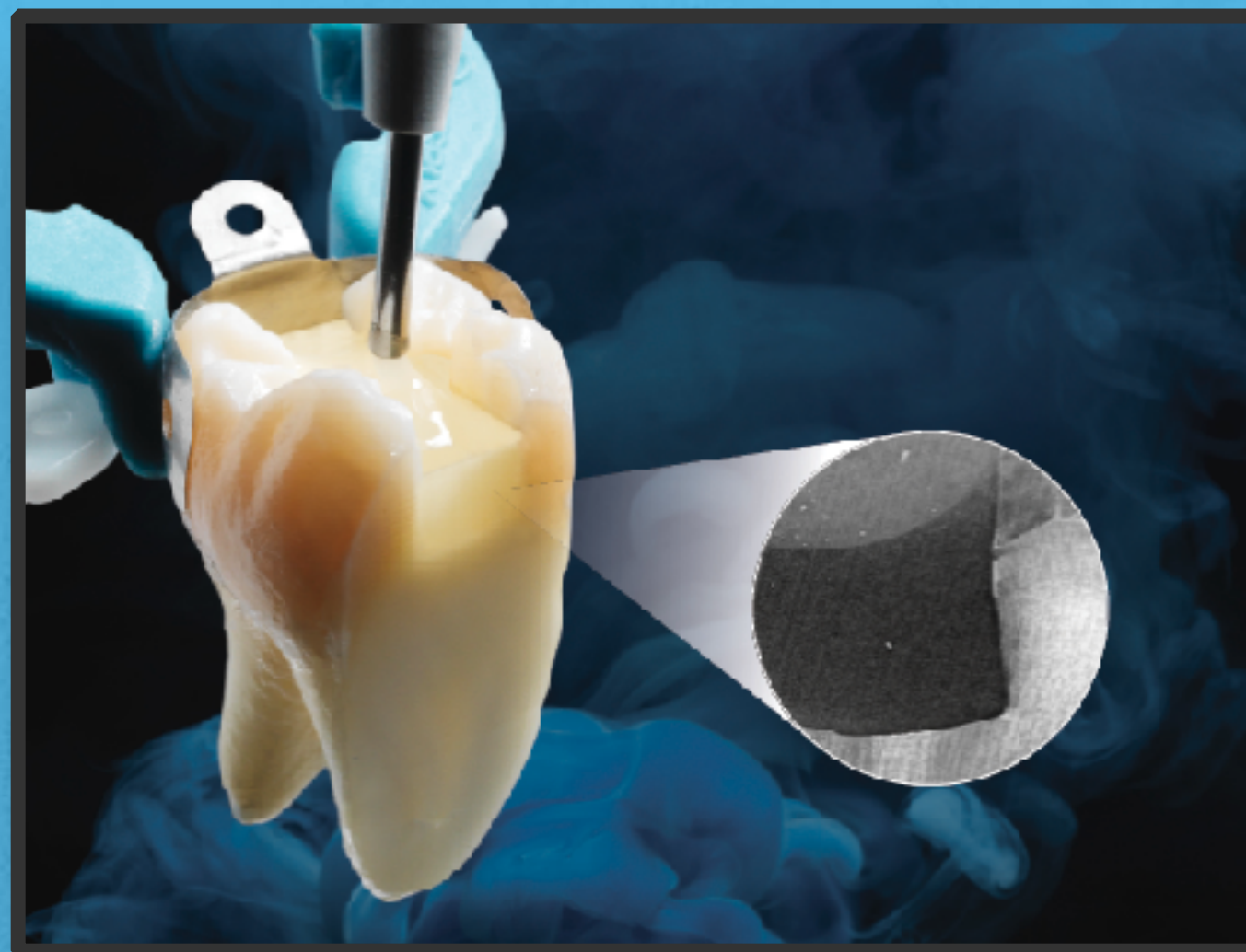


sectional  
matrix





# SureFil SDR flow's role in the Class II procedure









#### References

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2. Francis A, Braxton A, Ahmad W, et al. Cuspal Flexure and Extent of Cure of a Bulk-Fill Flowable Base Composite. *Oper Dent* 2015.
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ENTAL

White label

Red label















**Cilli R, Prakki A, de Araújo PA, et al. Influence of glutaraldehyde priming on bond strength of an experimental adhesive system applied to wet and dry dentine. J Dent. 2009;37:212-218.**

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Jacob

























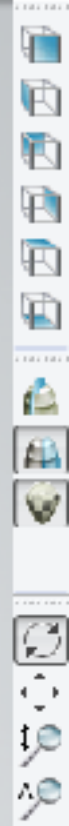
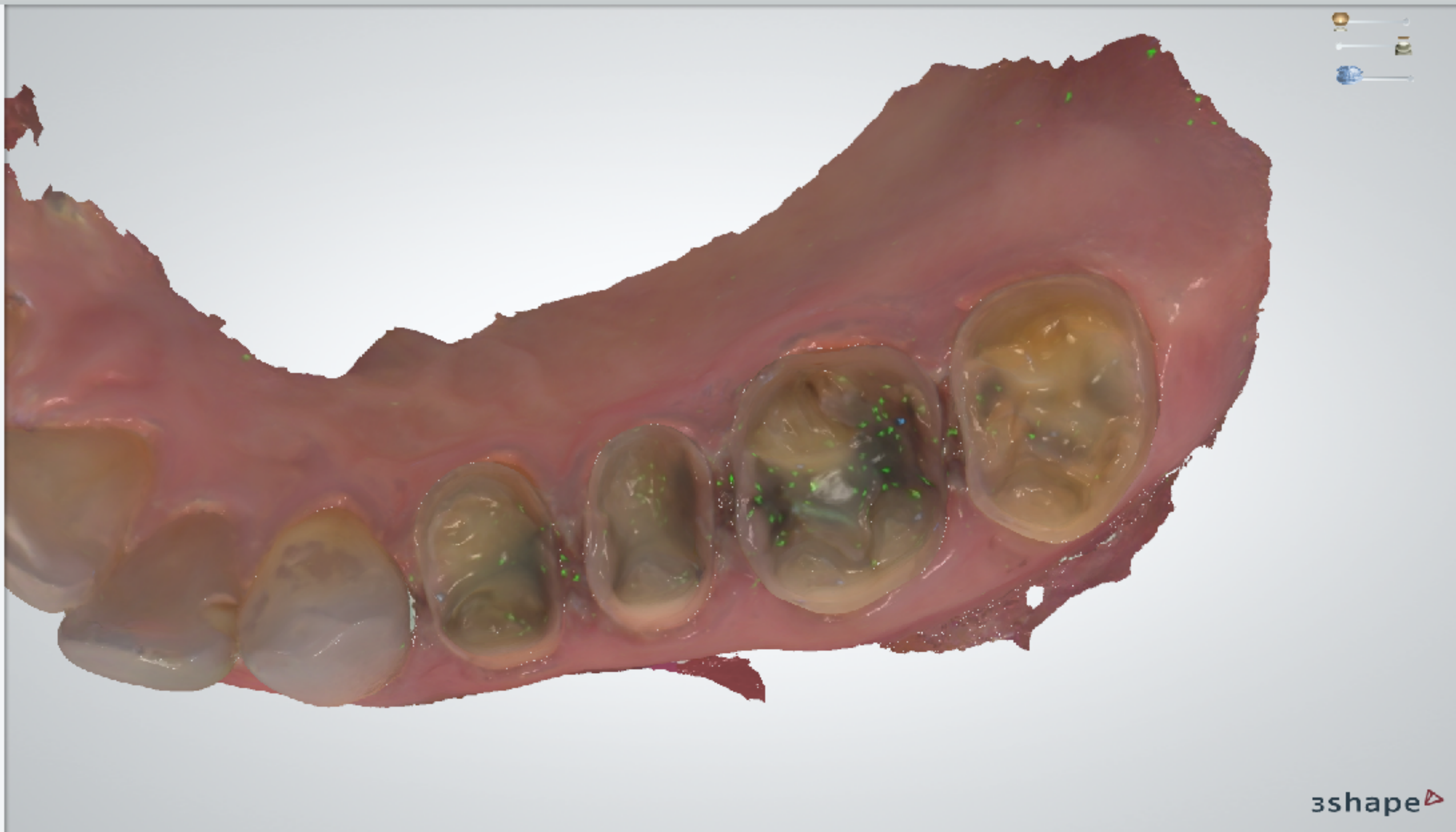
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Back

Next



Align to bite



3shape



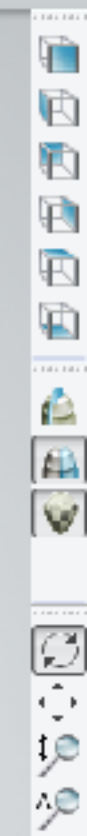
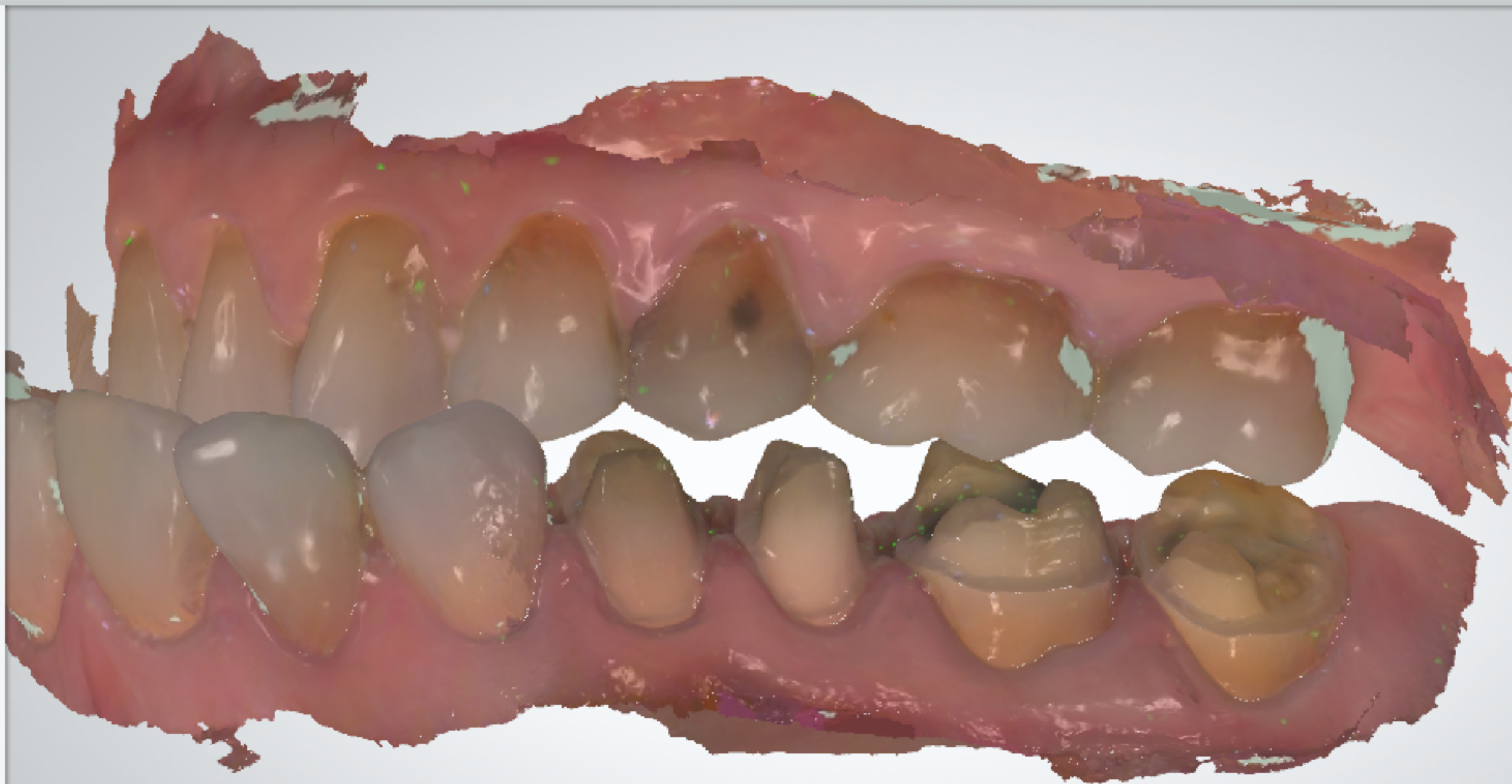
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Back

Next



Align to bite



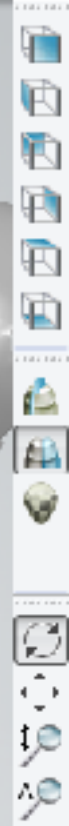
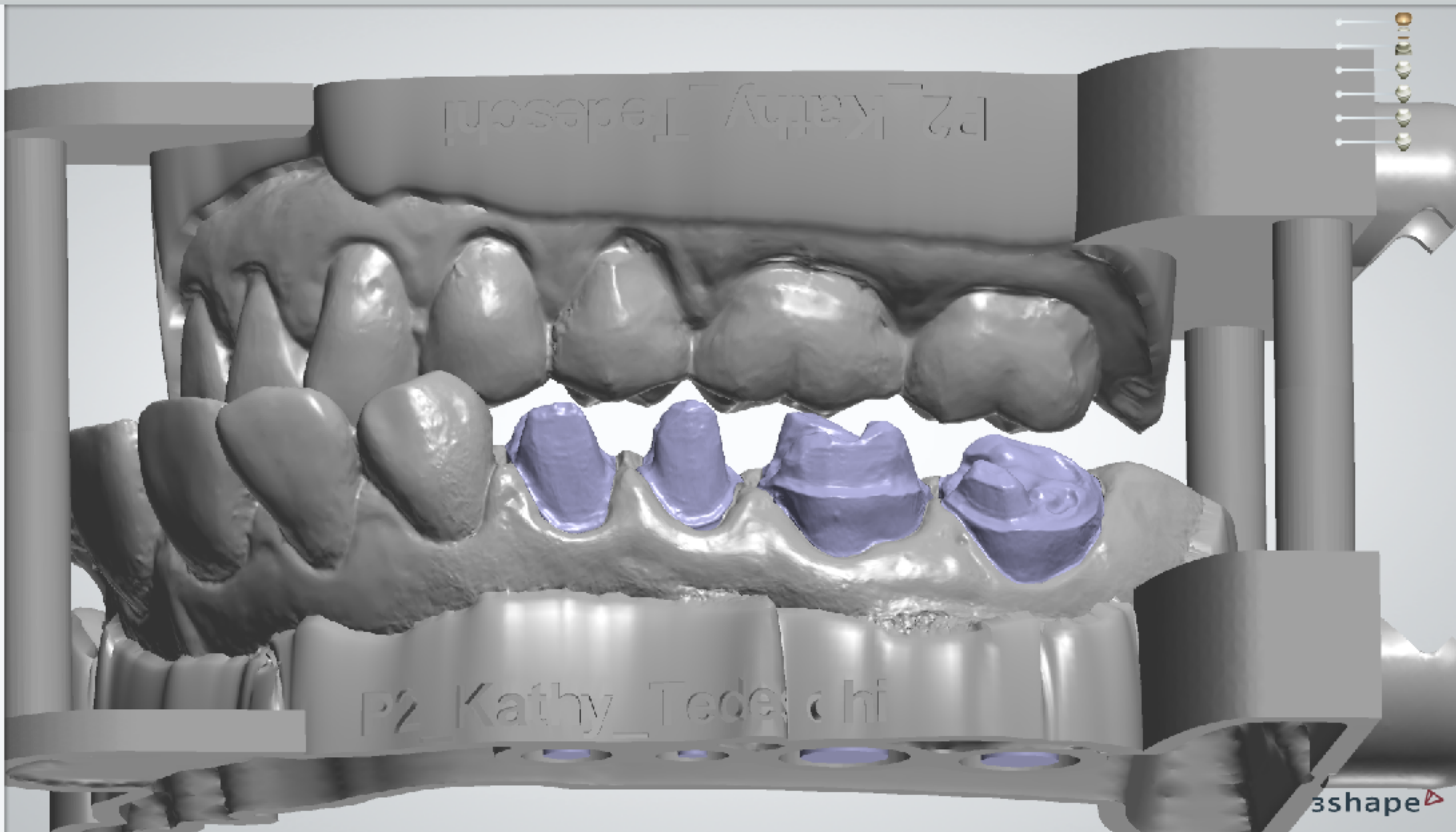
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Jack

Design



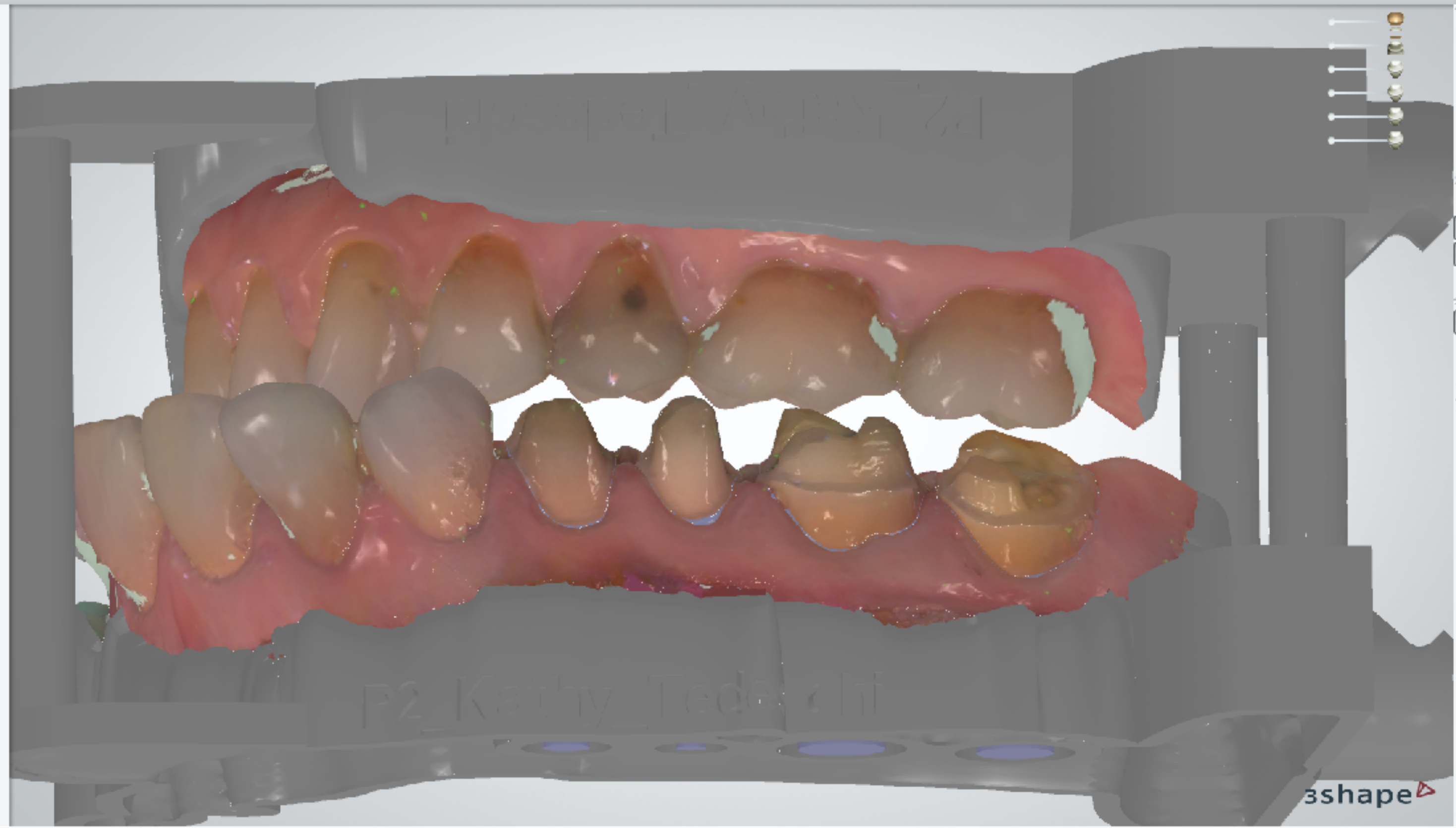
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Jack Design







101

Temp

KATHY

02

10



















### Anatomy design

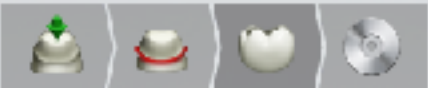
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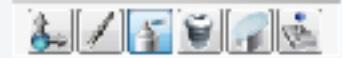
Crown 4 Finish

Smile Composer

Sculpt



#### Sculpt toolkit



#### Wax knife settings

+  -

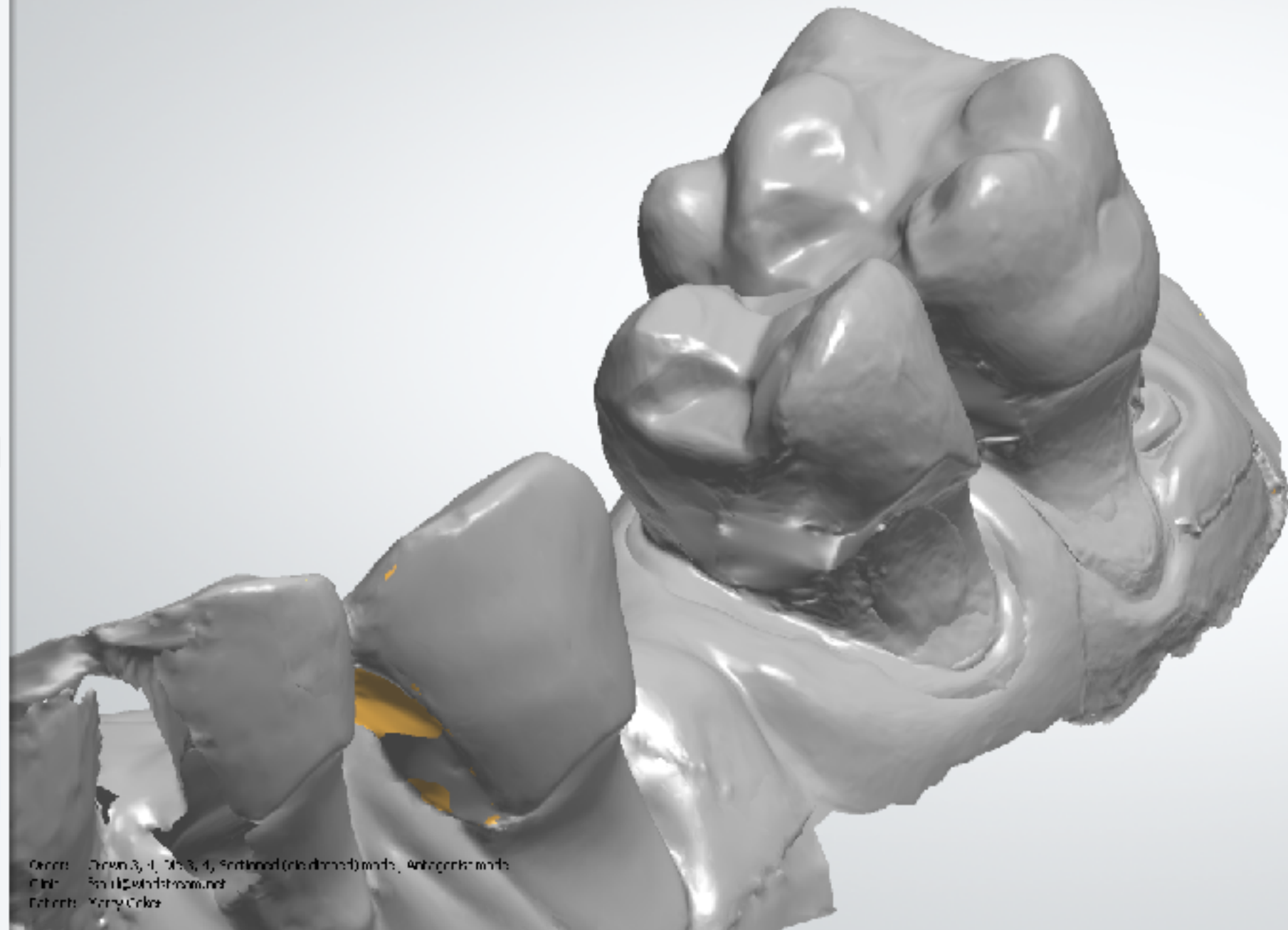
1.00 mm

5.0 um

0.00 mm

1  2  3  4  5  6  7

OK



Object: Crown 3, 4, 7, 8, 4, Sectioned (no dimed) model, Antagonist model  
File: 3shape.dds  
Patient: Marty Coker



### Anatomy design

Back

Next



Crown 4

Finish

Smile Composer

Sculpt

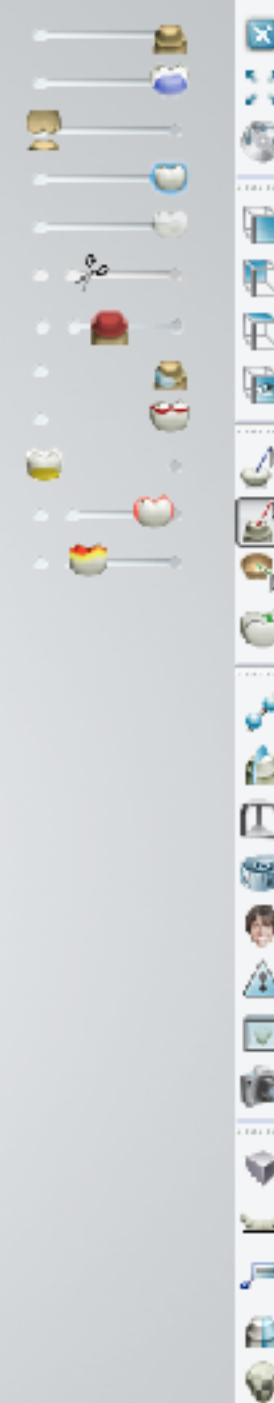
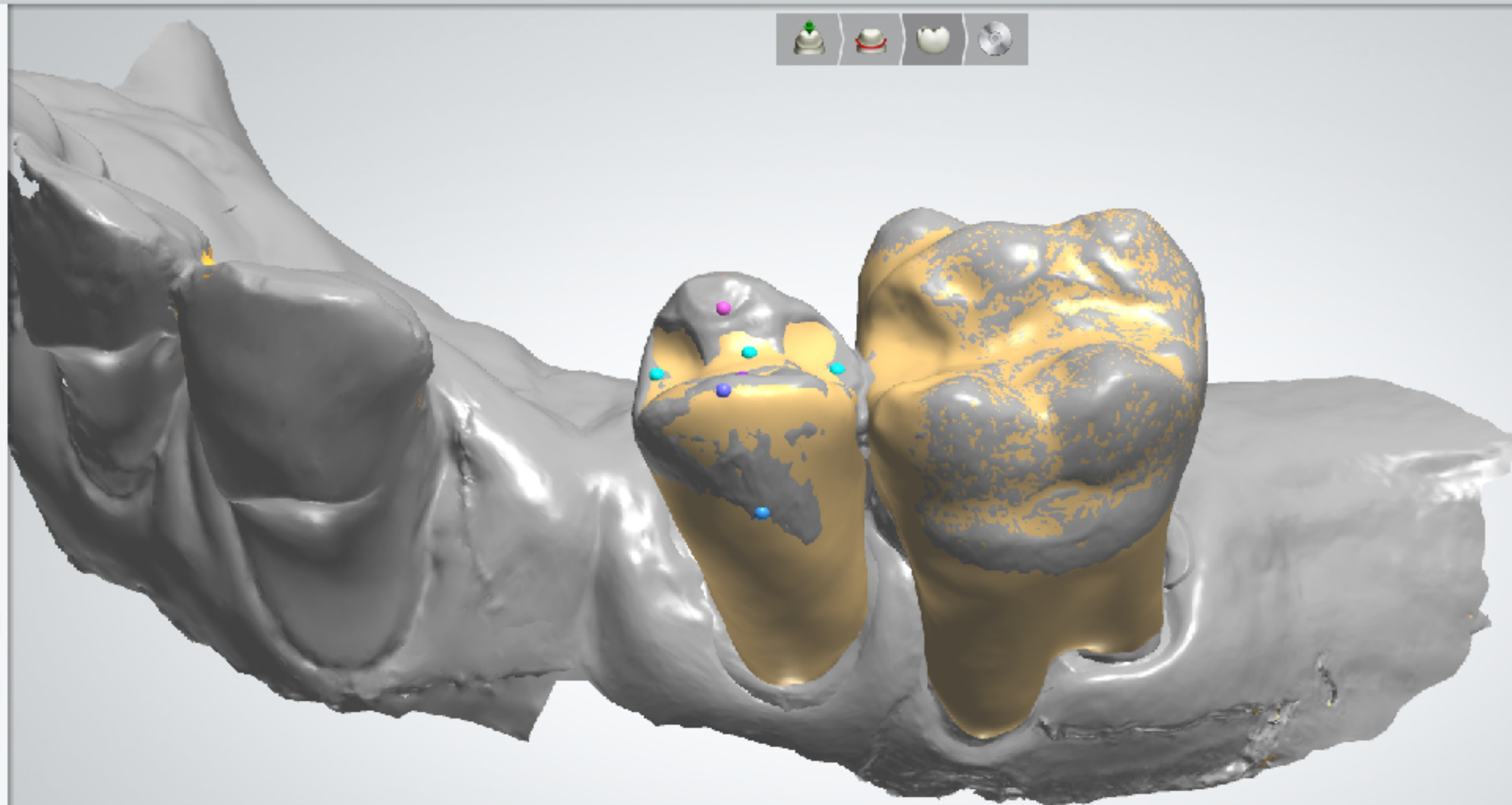
#### Sculpt toolkit



#### Marking settings

1.60 mm

Unlearn all



Genus: Crown 3, 4, 06 3, 4, Sectioned (disdirect) mode, Antagonist mode  
File: 3D 06 03 04 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01  
Patient: Marty Coker

3shape





### Anatomy design

Back

Next

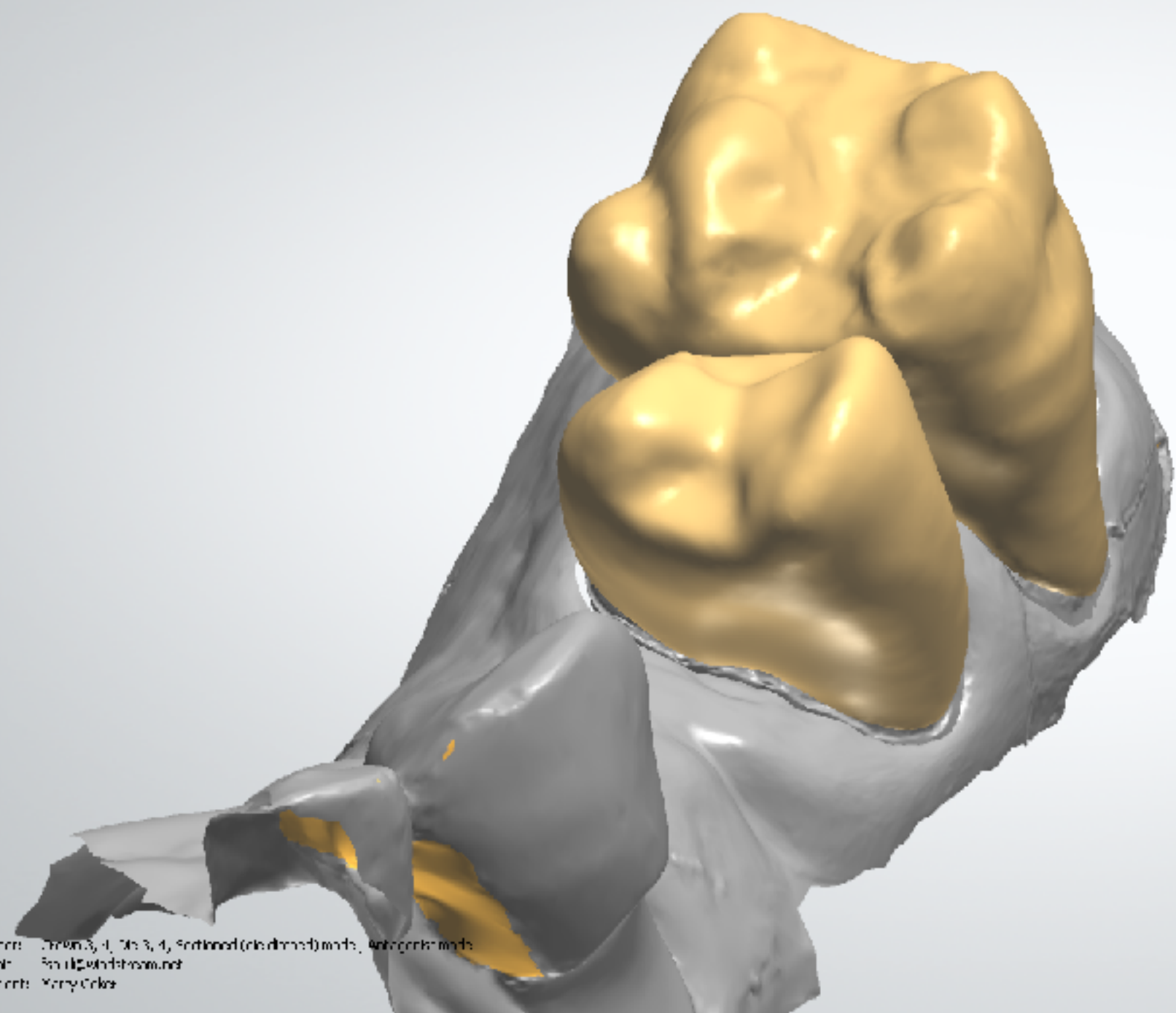
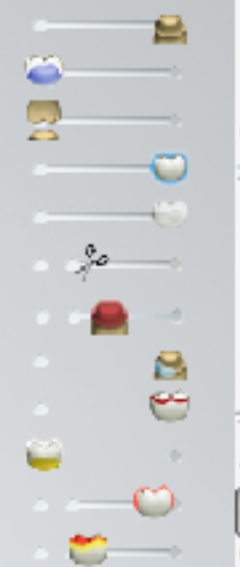


Crown 4

Finish

Smile Composer

Sculpt



#### Sculpt toolkit



#### Wax knife settings

+  -

1.00 mm

5.0 um

0.00 mm

1  2  3  4  5  6  7

Unlearn all



Name: Crown 3, 4, 3, 4, Sectioned (no drilled) wax, Antagonist wax  
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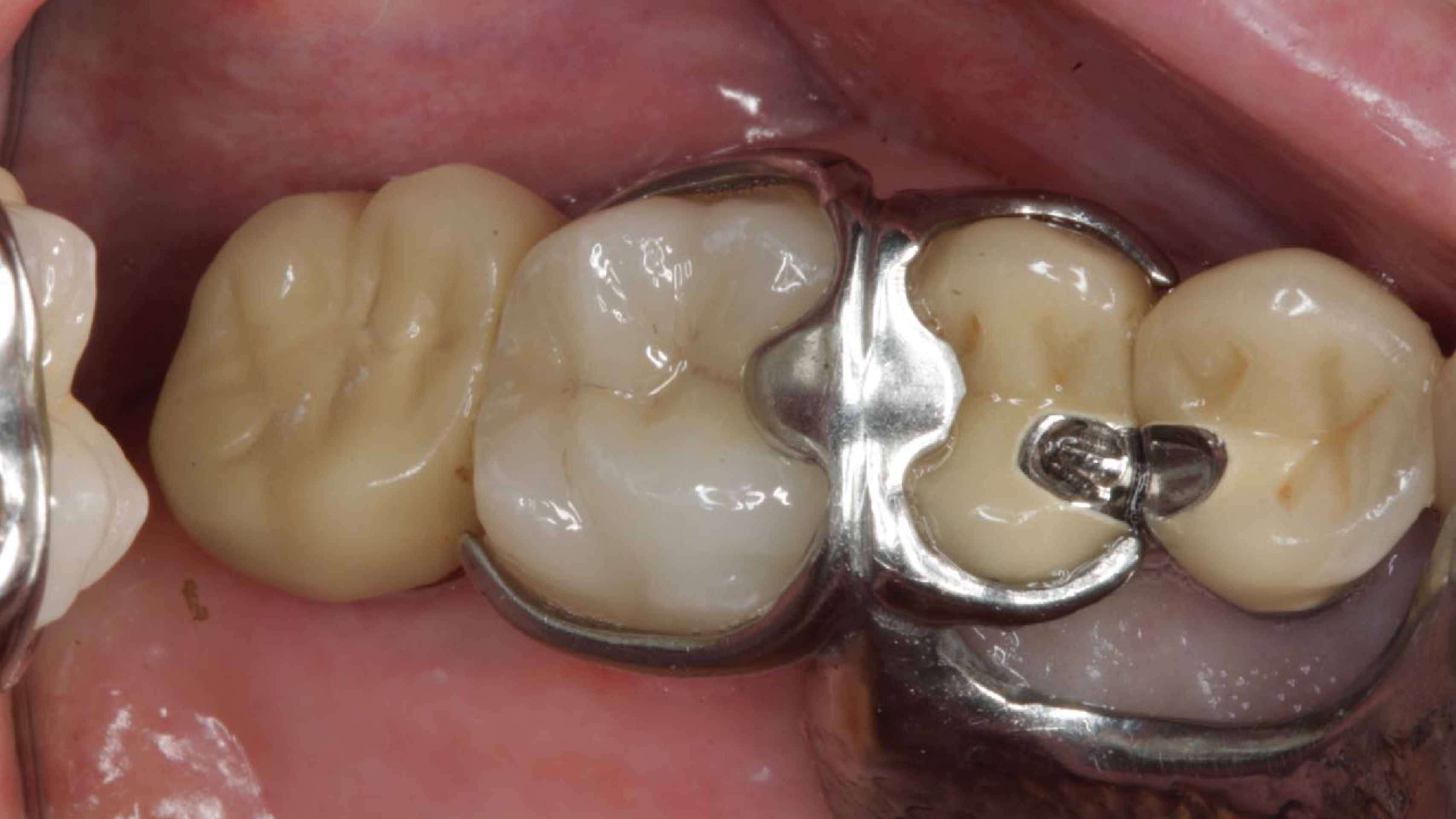
3shape















Markie















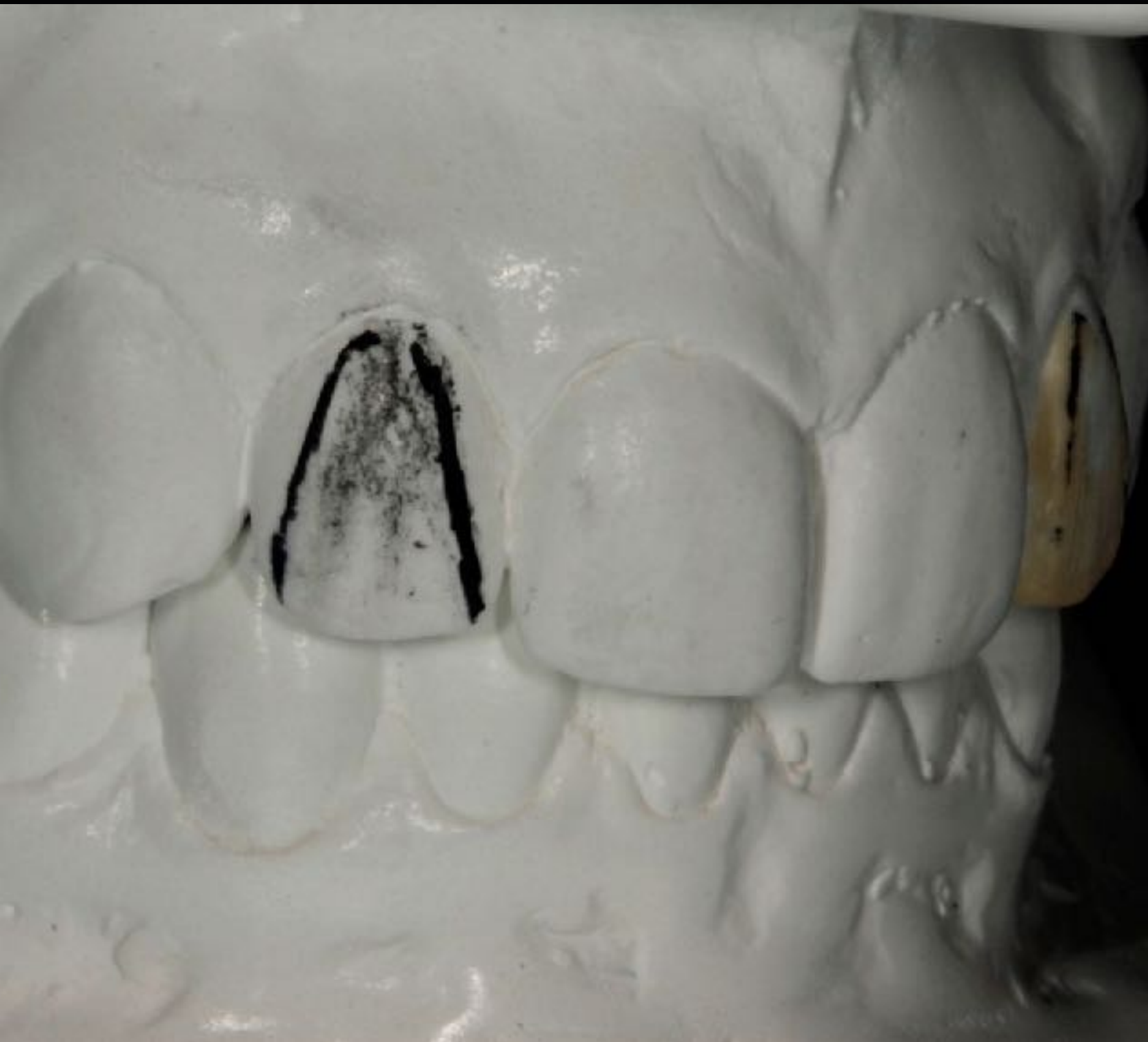




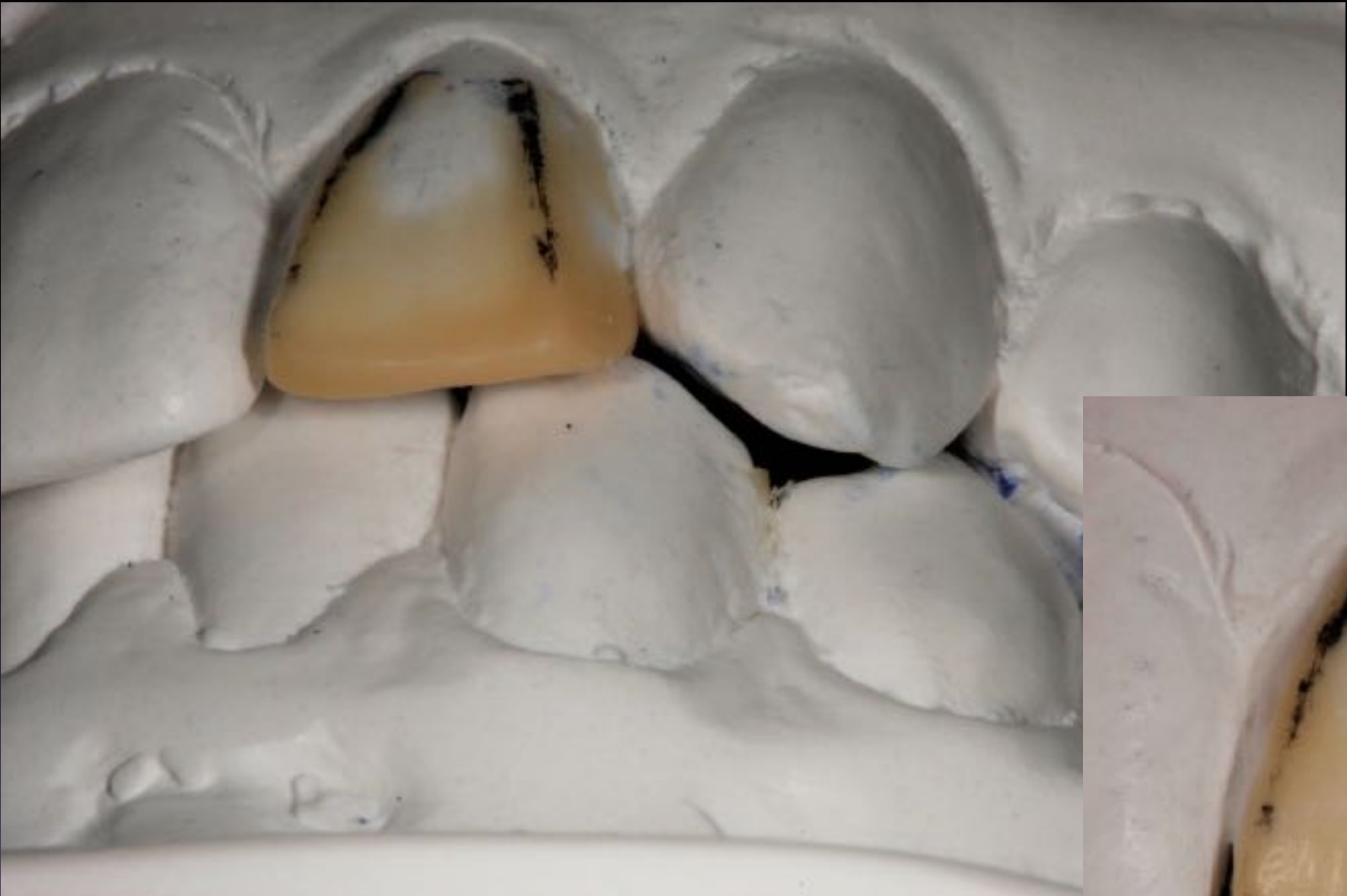


























bunny







Kendall











































jacob































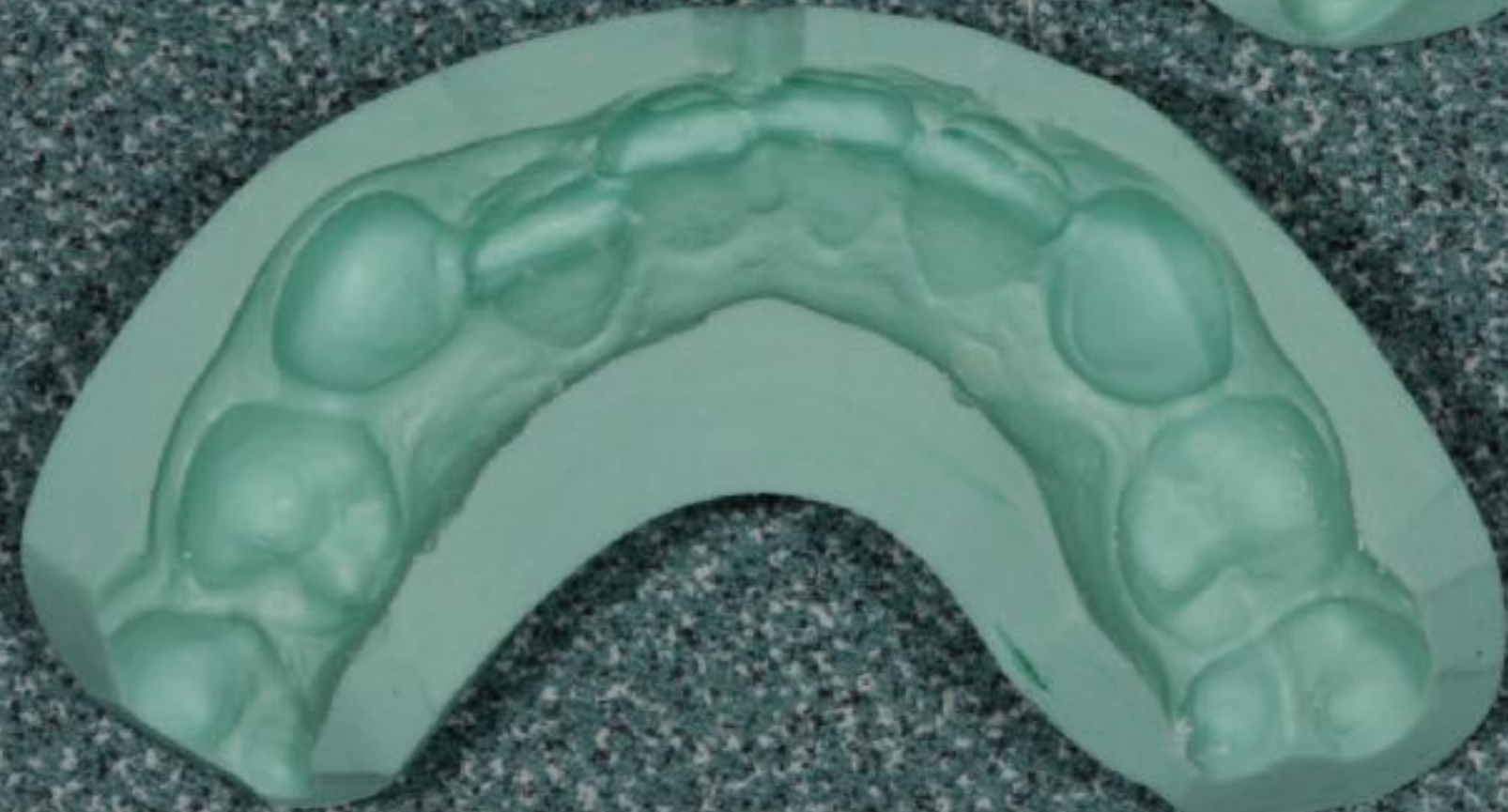


























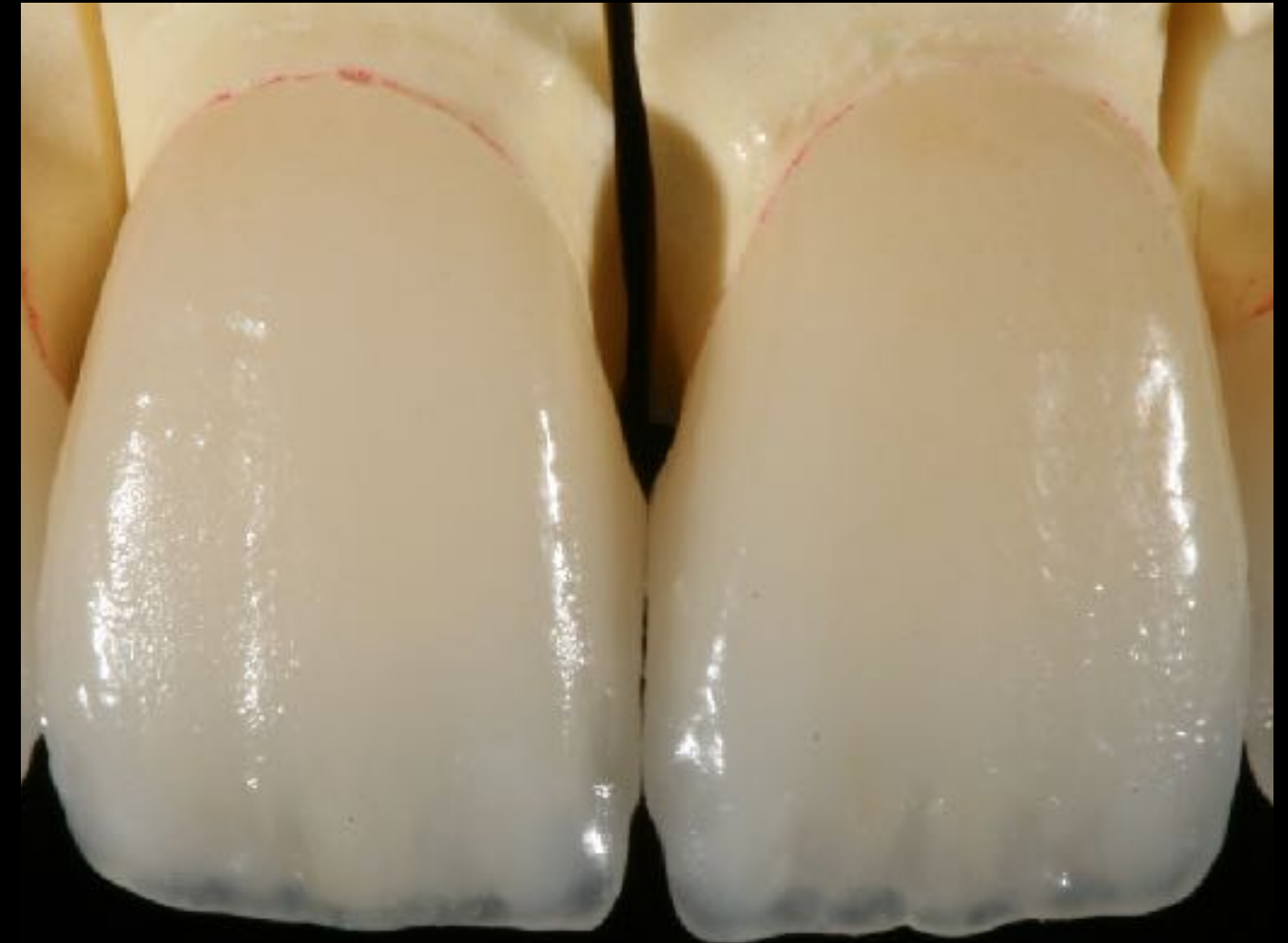
# Ceramics





# Ceramic Options

- Porcelain Fused to Metal
- Aluminous Oxide (e.g. Procera)
- Feldspathic
- Pressed (e.g. empress)
- Zirconia
  - monolithic (e.g. bruxzir) or layered (e.g. lava)
- Lithium Disilicate (e.g. e.max)
  - layered or monolithic



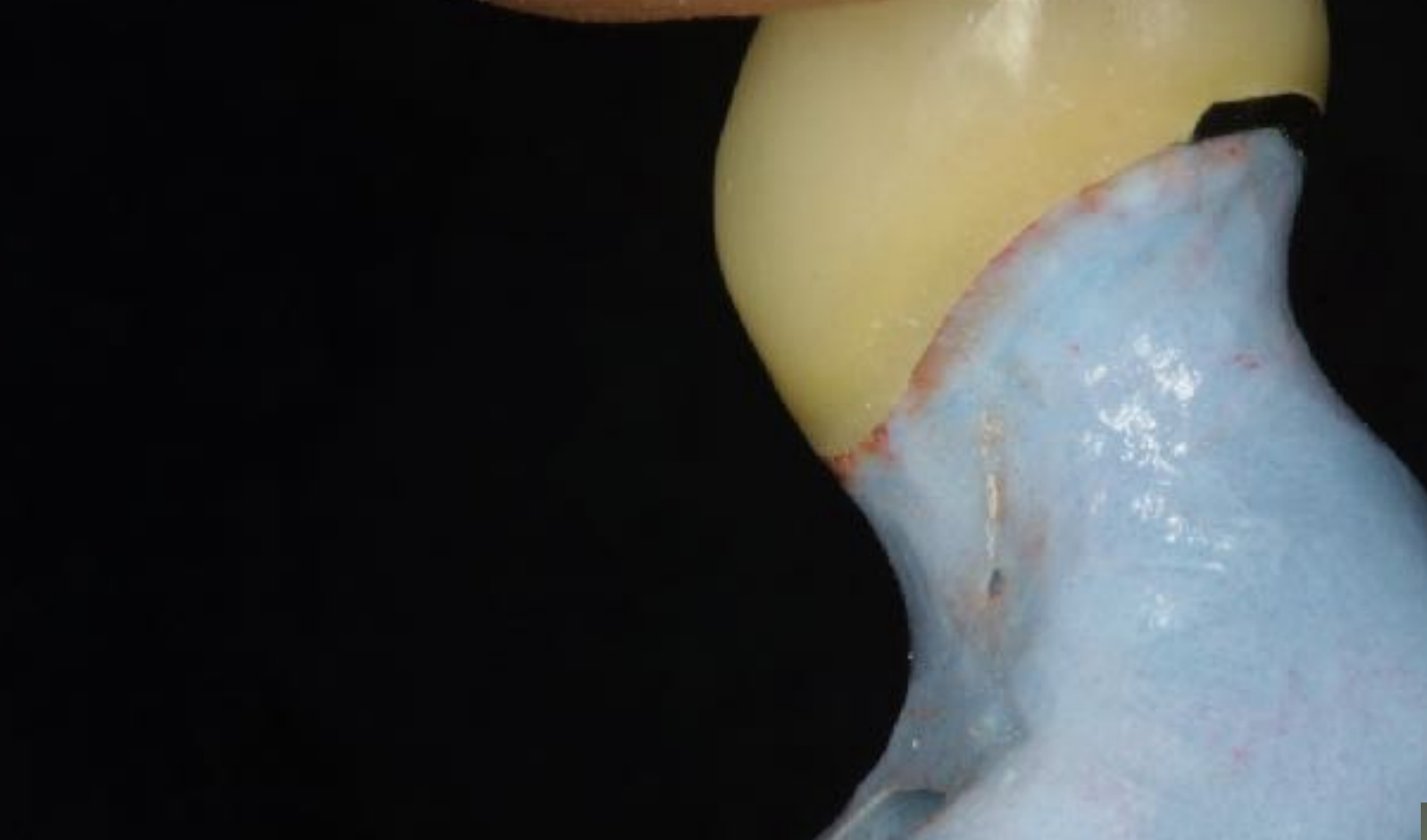


# PFM

- full porcelain butt margin on facial with interproximal elbows
- 1/2 mm metal collar interproximal and lingual surfaces
- optimizes fit and esthetics
- minimizes the potential over-contouring of the three-way or “show no metal” margin



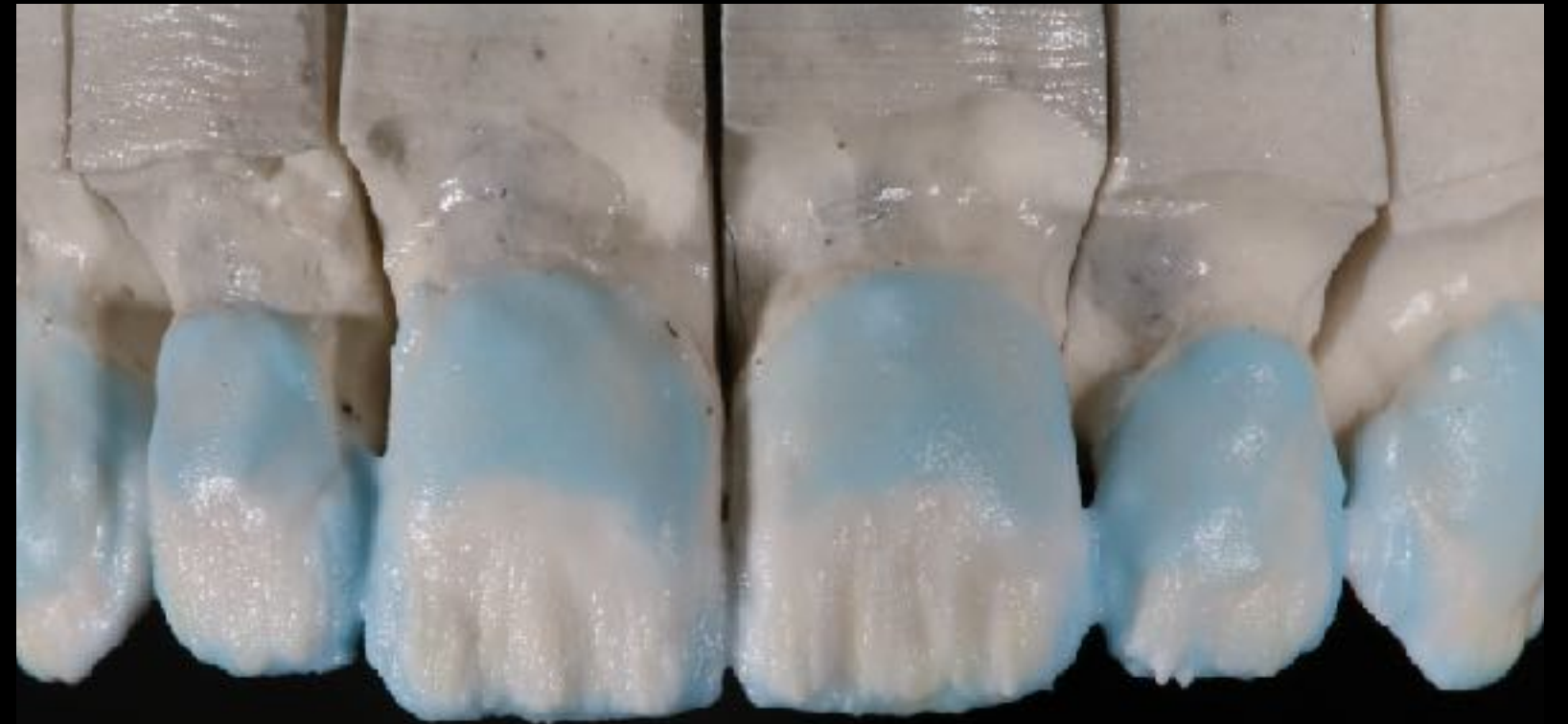






# Feldspathic porcelain

- refractory or platinum foil technique
- very thin and highly esthetic
- powder liquid, multiple firings
- weak ceramic
- incredibly technique sensitive for both dentist and technician





# Pressed Ceramics

- 35 million restorations to date (launched in 1995)
- 160 MPa strength
- very esthetic ingots
- must be bonded





# Zirconia

- very high strength 900 - 1200 MPa\*\*
- bridgework or single units
- excellent ability to mask
- conventional cementation
- \*\*layering porcelain prone to fractures\*\*









- Etchable
- 300-360 (mpa (monolithic)... 470-530?
- Pressable or millable
- Multiple opacities for multiple applications
- Bonded or cemented
- Low wear to opposing
- Anterior and posterior indications

e.max







## Clinical Success



over 100  
million  
restorations to  
date

launched  
in 2006

- Multiple global IPSe.max lithium disilicate clinical trials
- Over 10 years of clinical success
- 98.2% success rate



IPS e.max<sup>®</sup>

all ceramic all you need



IPS e.max<sup>®</sup>

▶▶▶ A natural gradient of chroma and translucency ▶▶▶

# ZirCAD MULTI

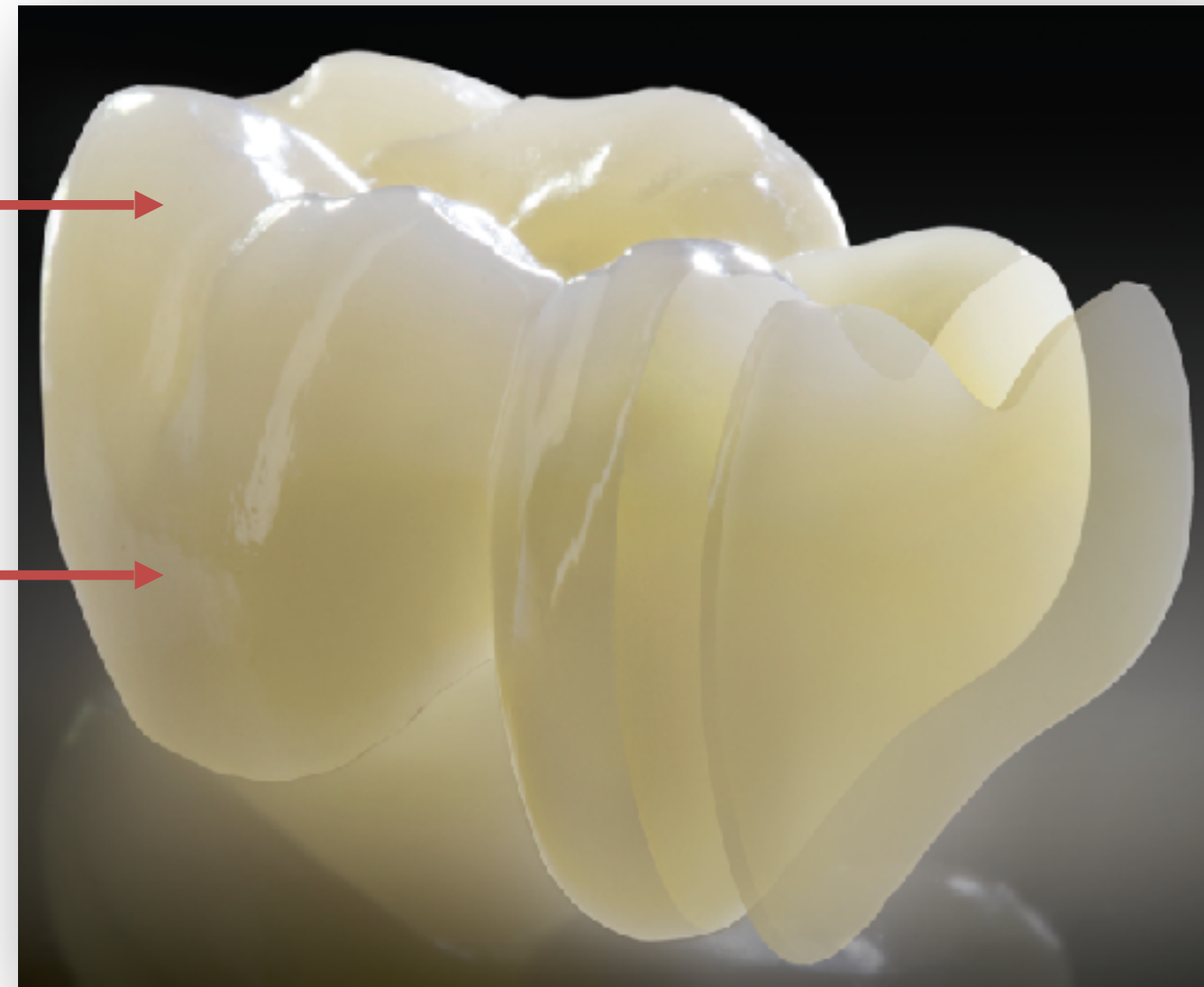
The most esthetic, high strength *multi-translucent zirconia*





# IPS e.max ZirCAD MT Multi

HT →  
MT →



825 MPa







truly  
“complex”  
restorative





Dad





















































Garrett











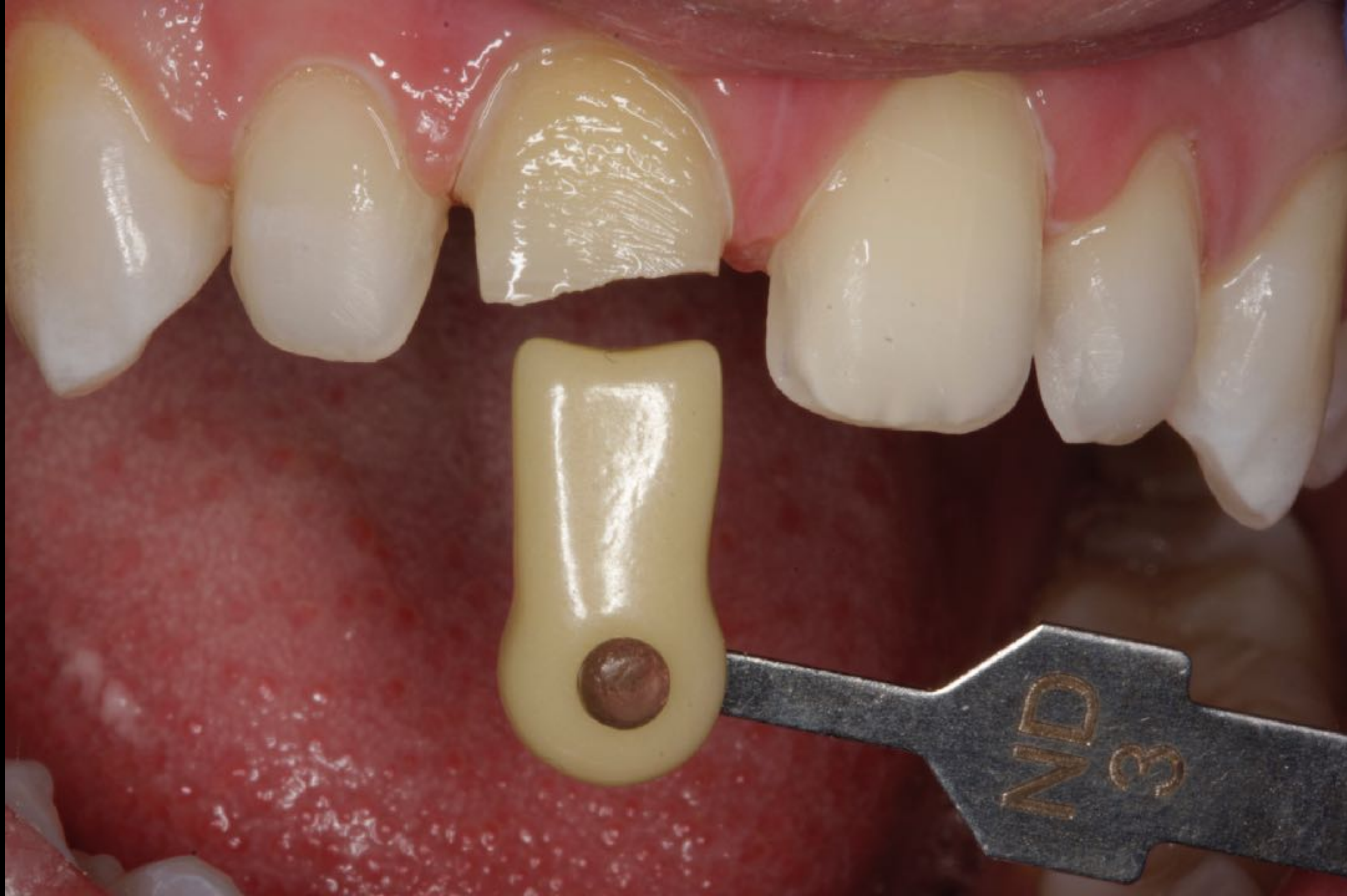














CMR iChat 9-27-11  
Driscoll case















Combining the best of our currently  
available restorative options















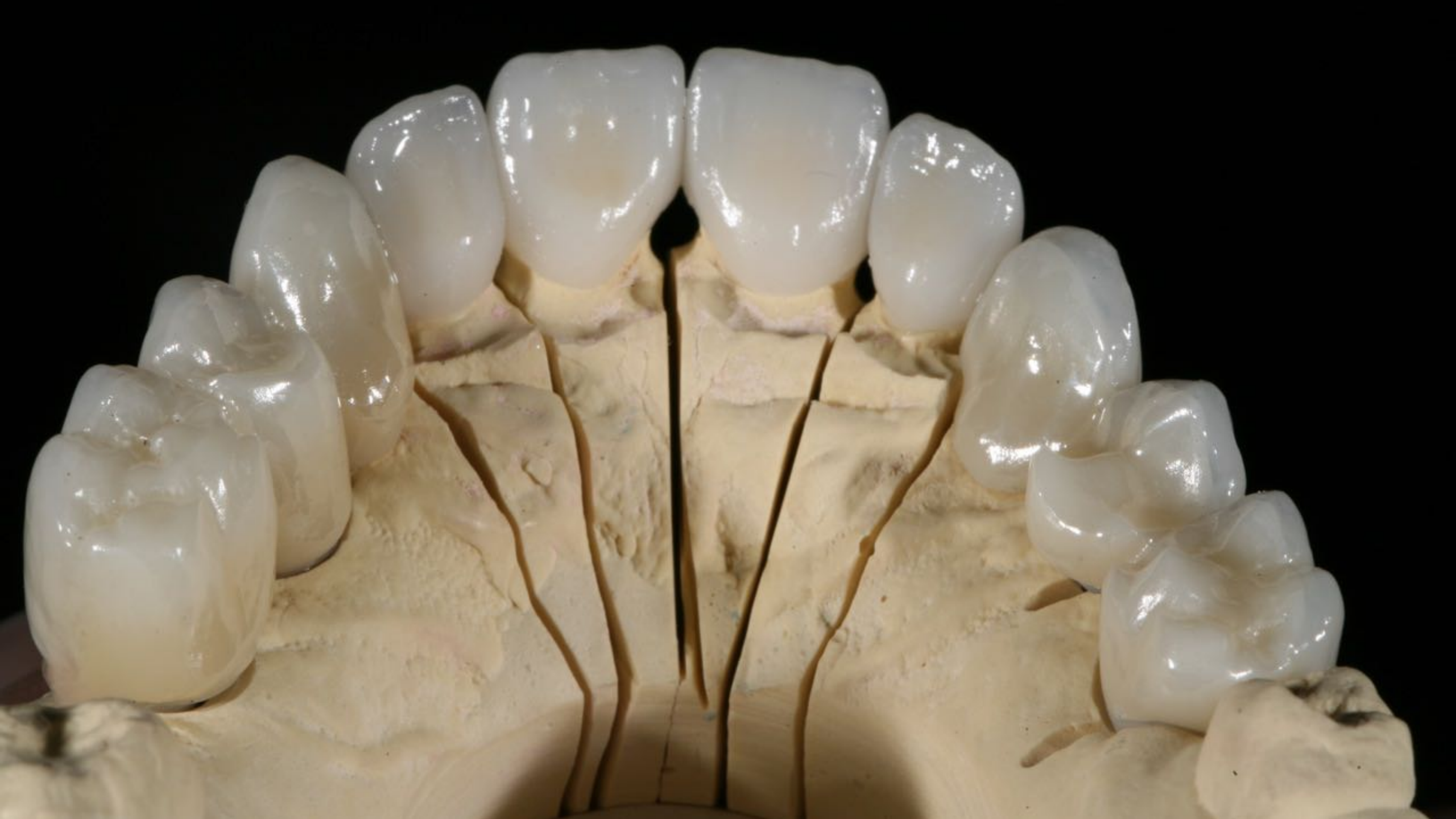








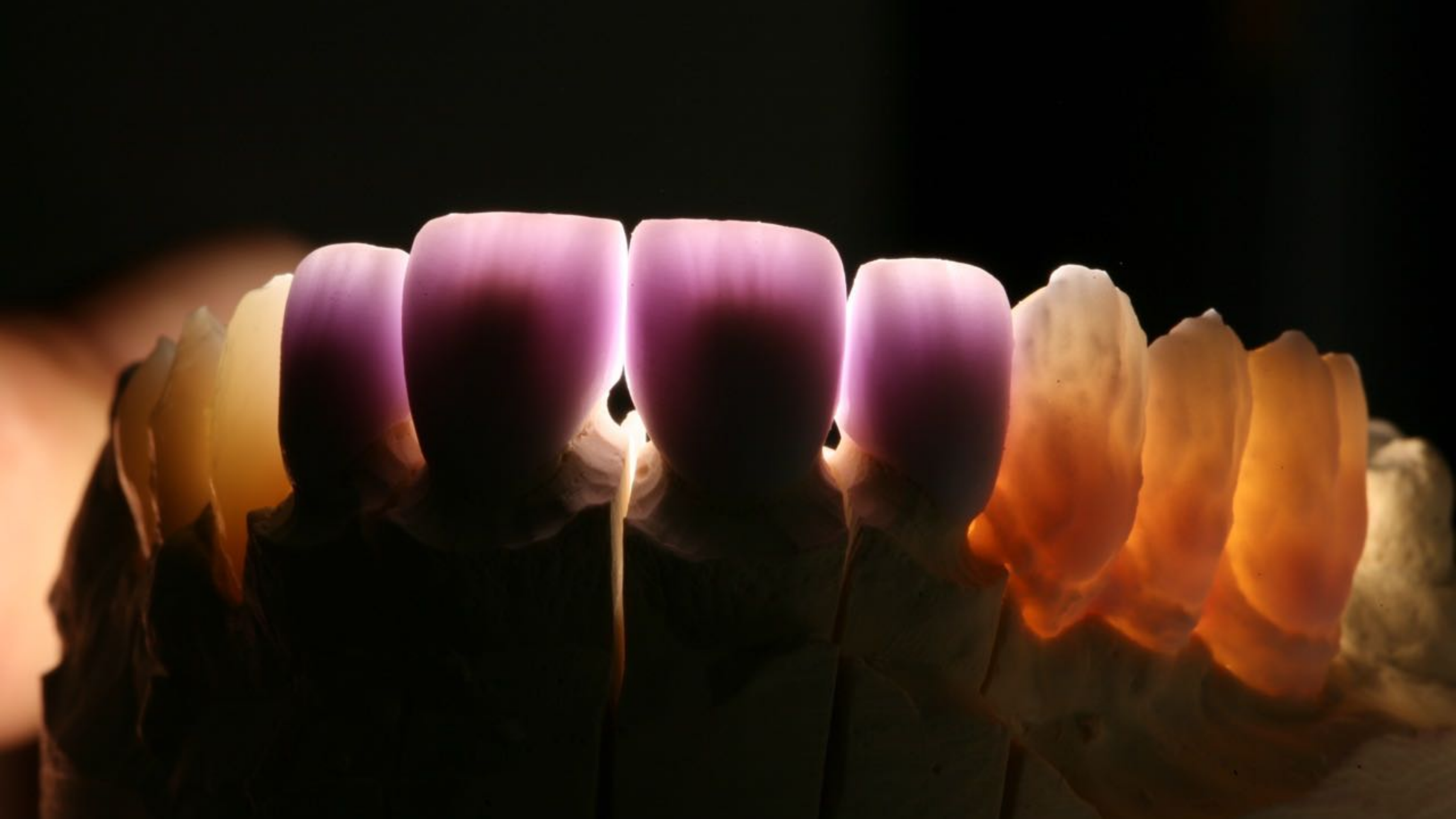




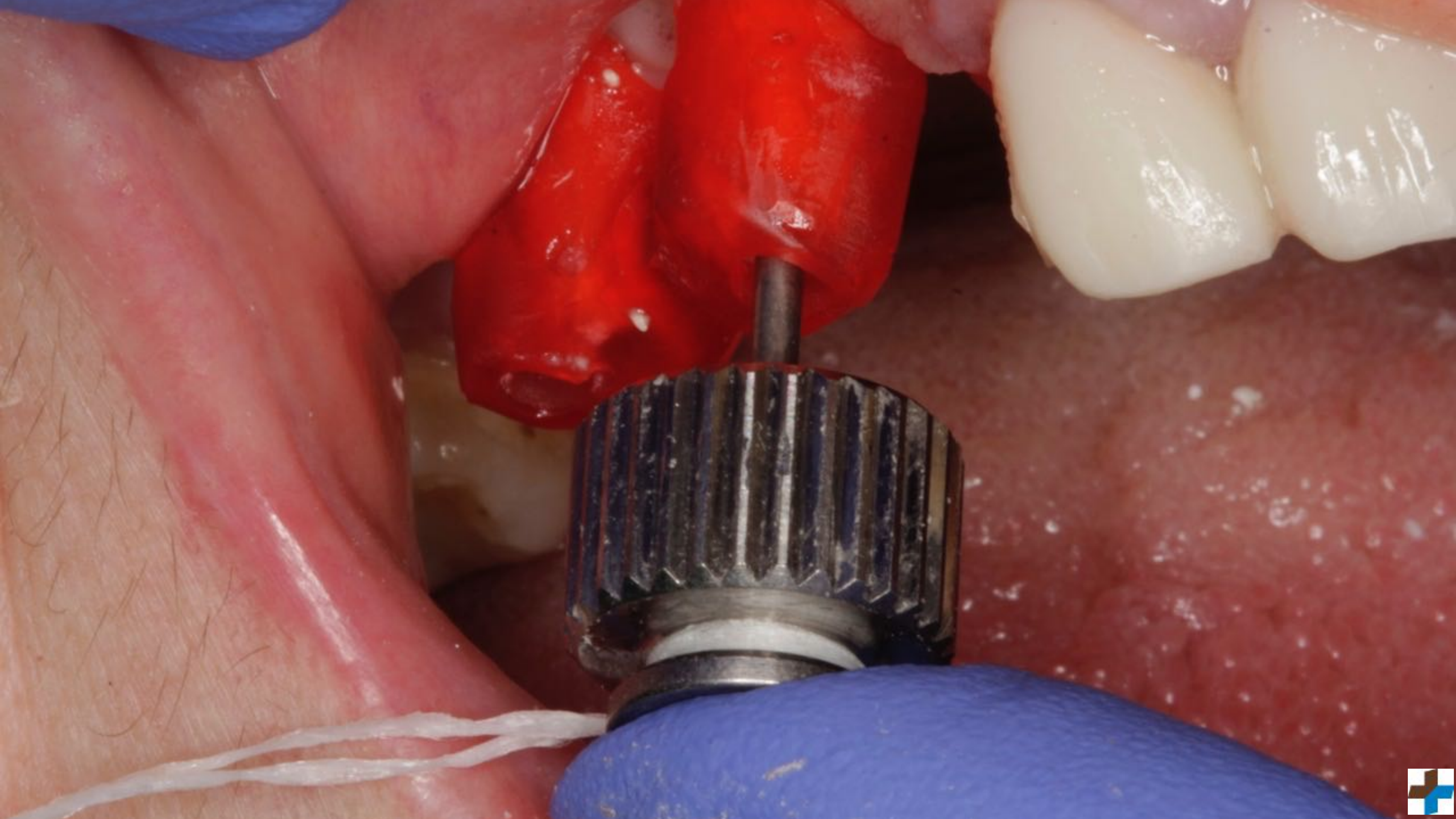


































Karen





We've all heard of the Denar,  
Artex, Hanau, Stratos, etc.

The Evening Dinner Meeting  
Articulator...AKA,  
*The Wristiculator*

BUT, the most popular articulator HAS to be...













































K. FOWM

























































06







06

























































































nate



















Oh hell...

























DAYUMMMM, that's amazing!











TPH Spectra<sup>®</sup> ST

 Dentsply  
Sirona















































Dr Campbell, US



Before



Post-operative view





























































Elizabeth



















































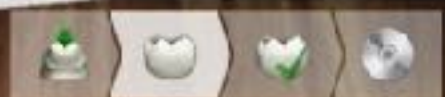




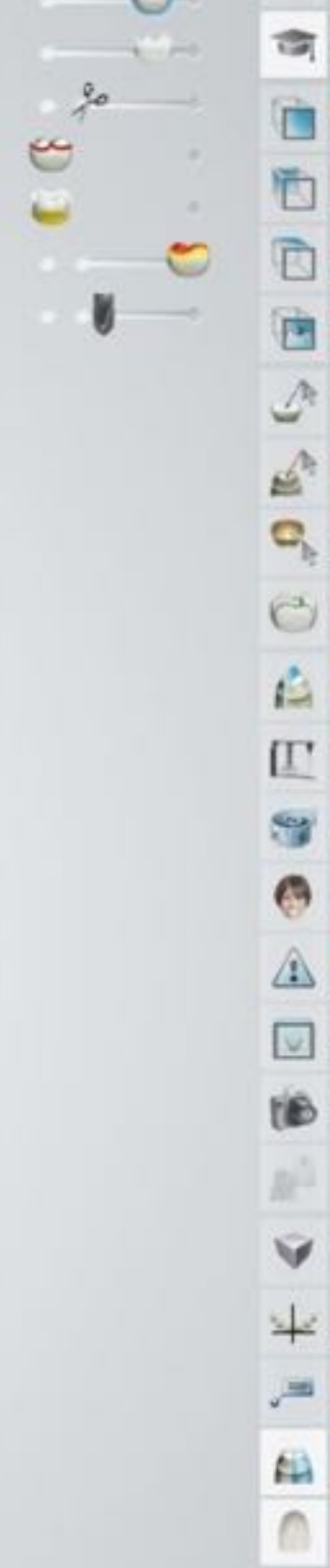
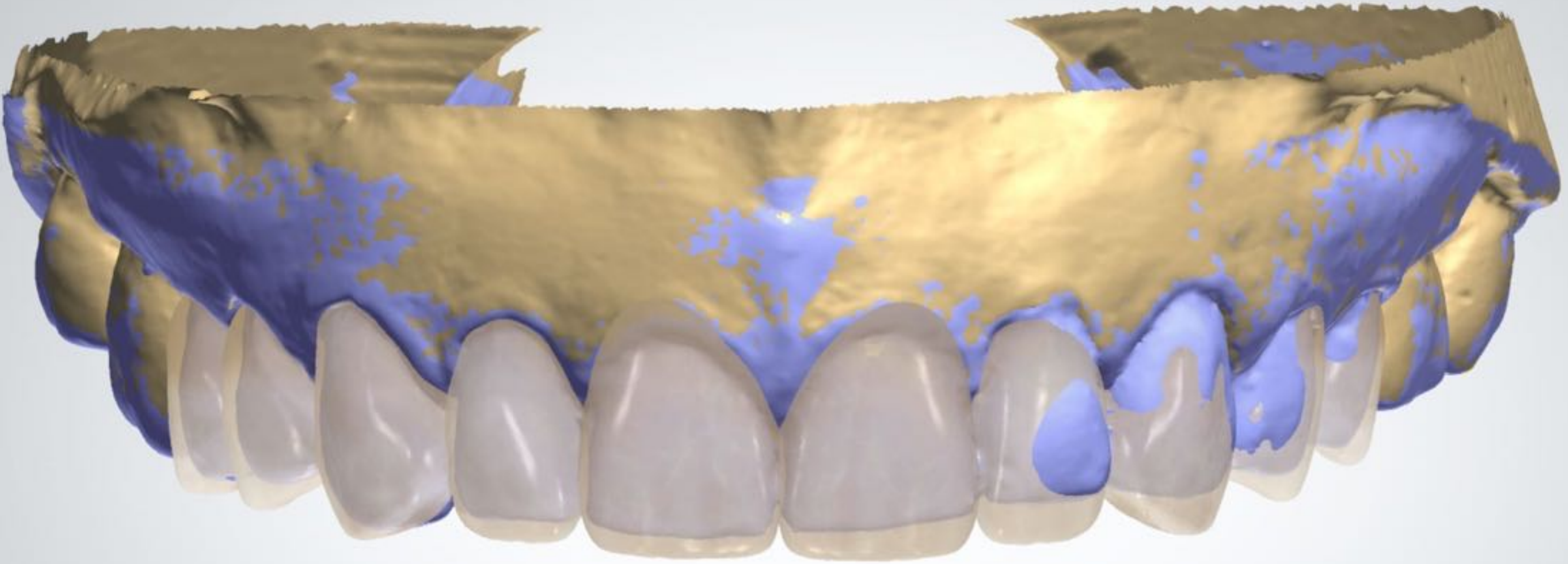




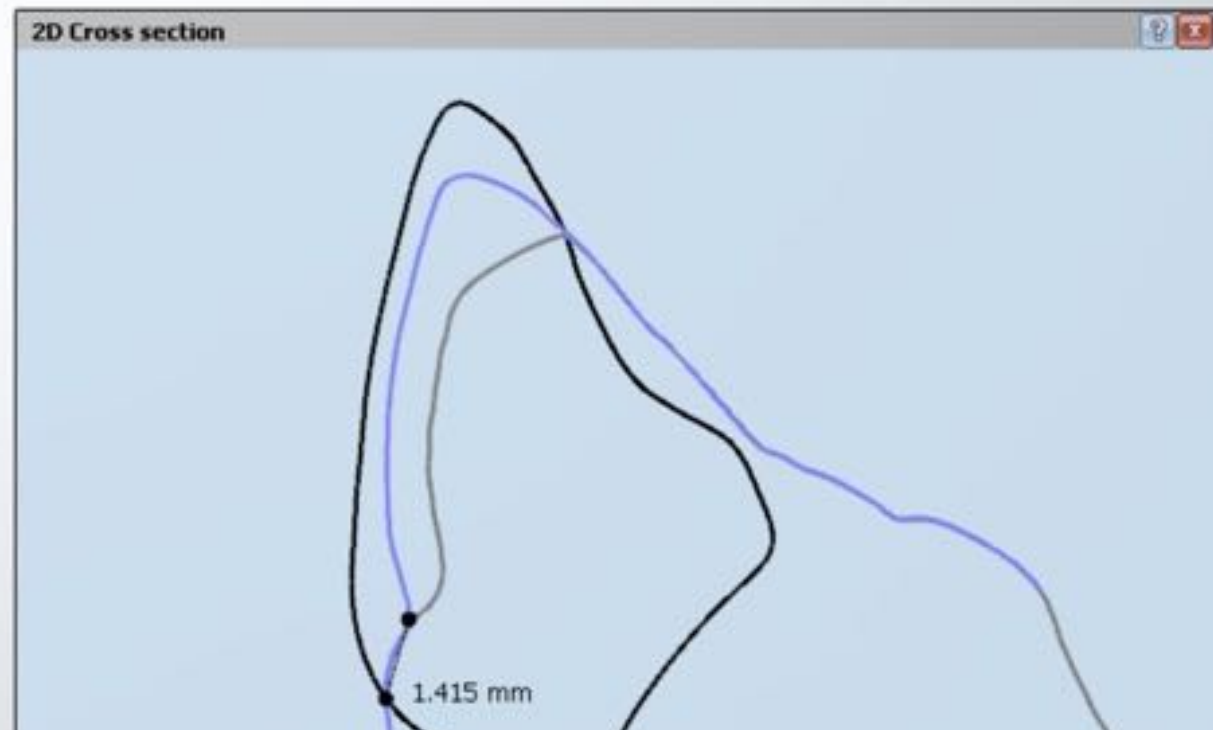
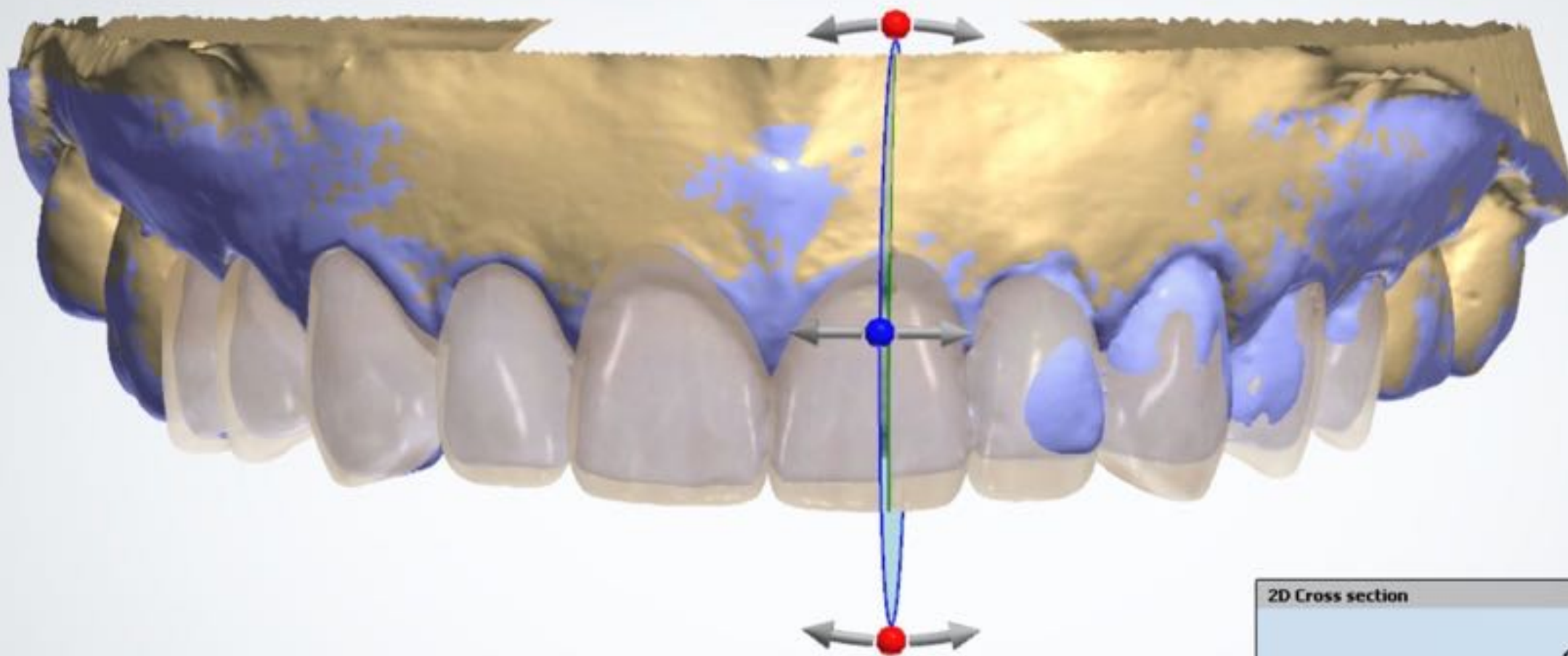
Click the image to select the tooth color sampling area. Use Shift+mouse wheel to adjust size of the area.



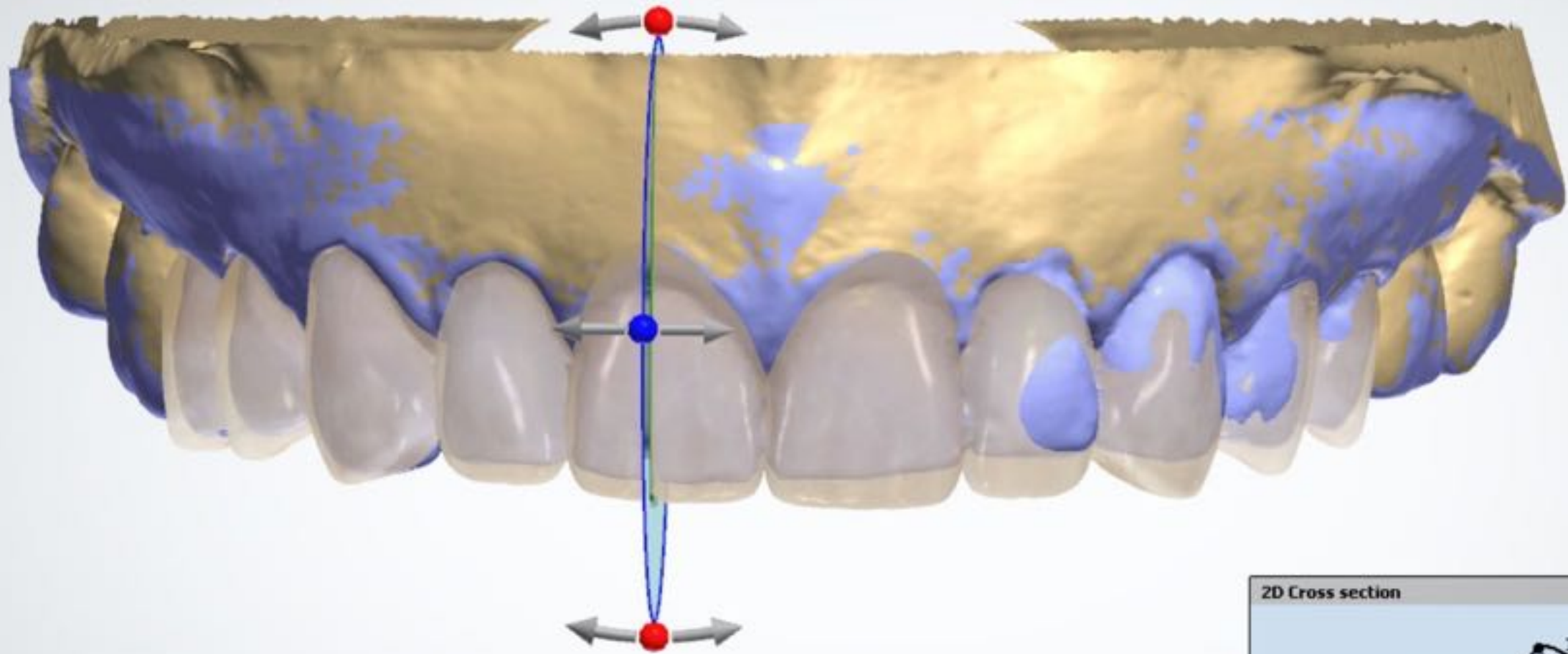
















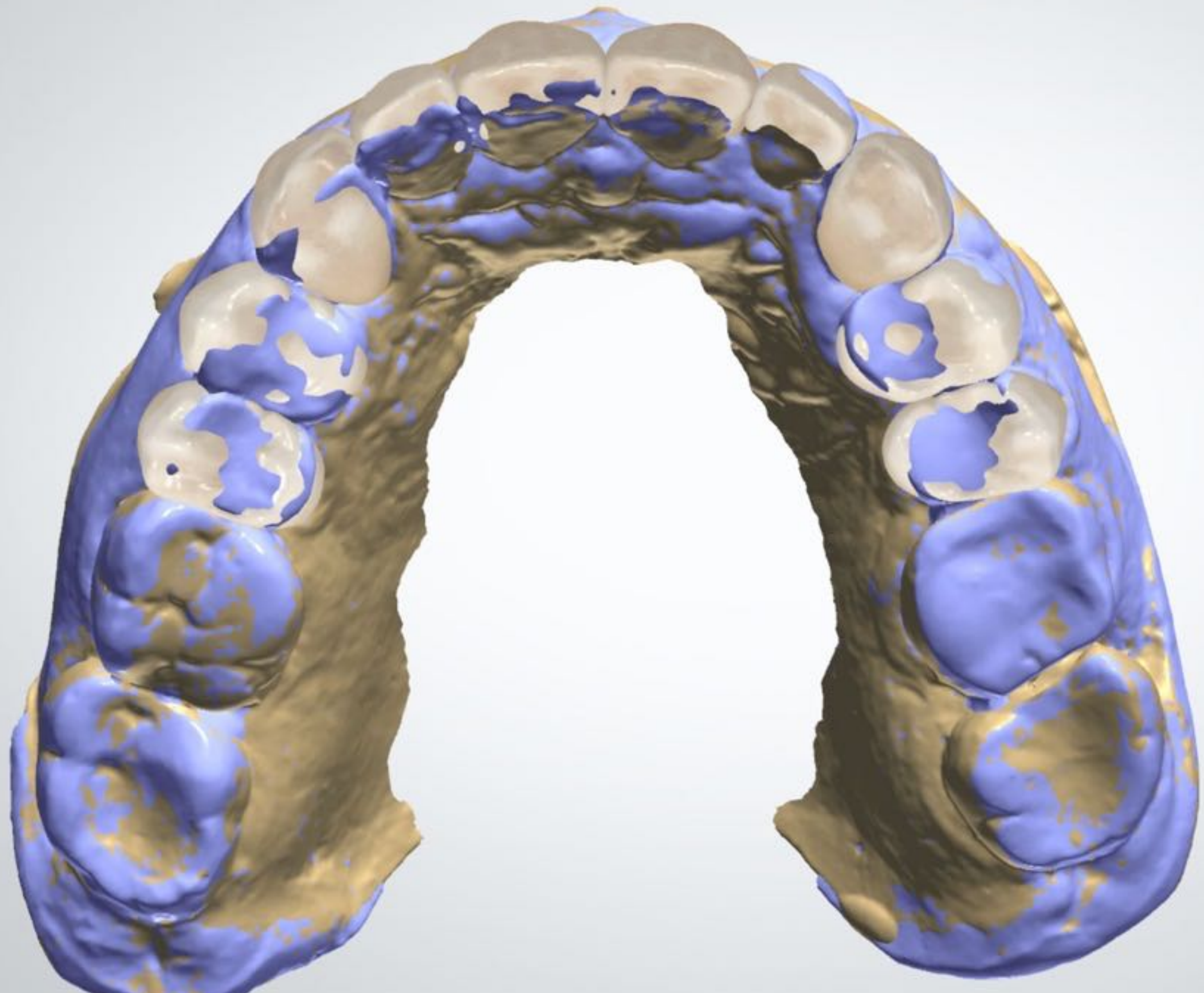




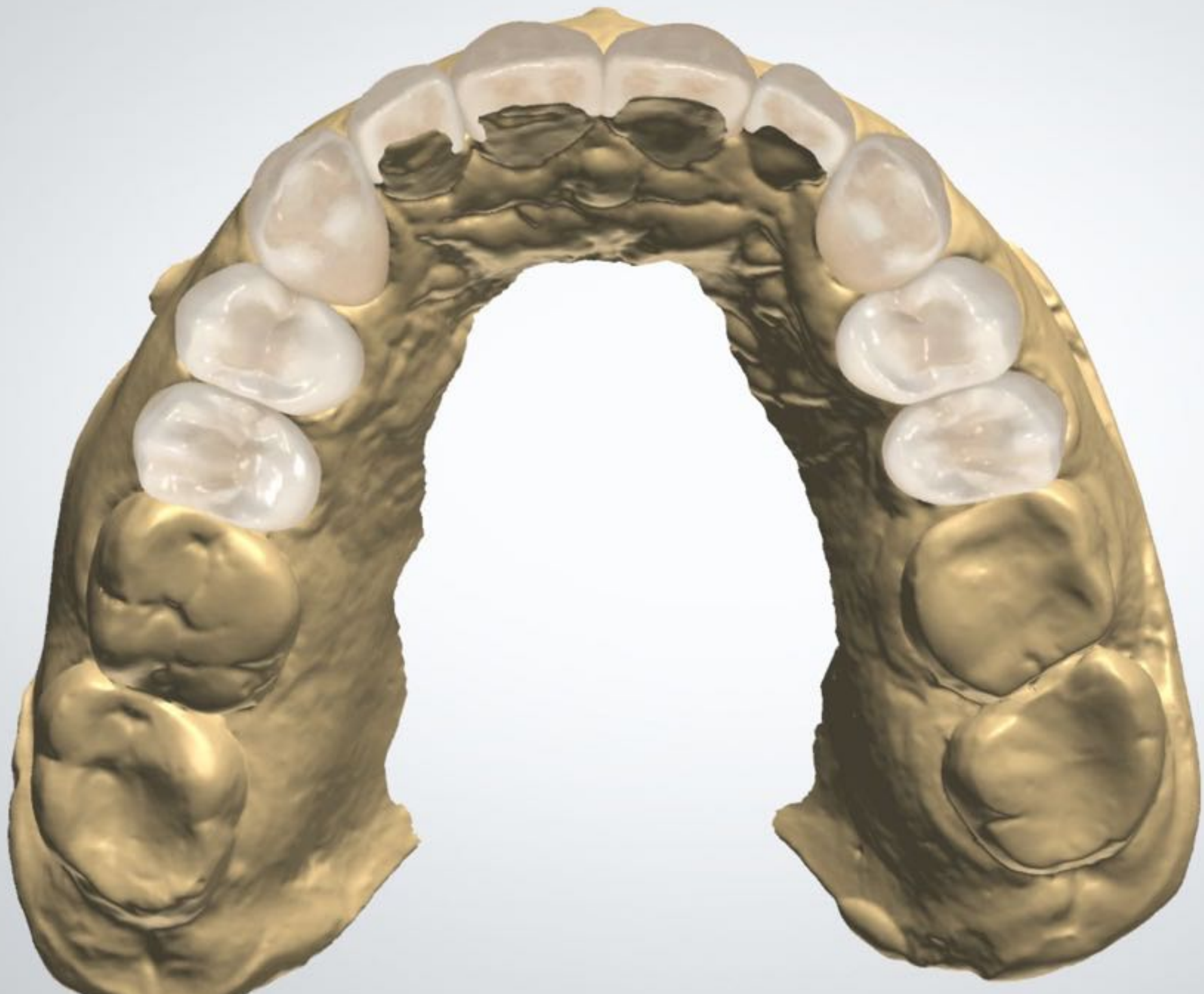






















































































































































*why am I here?*

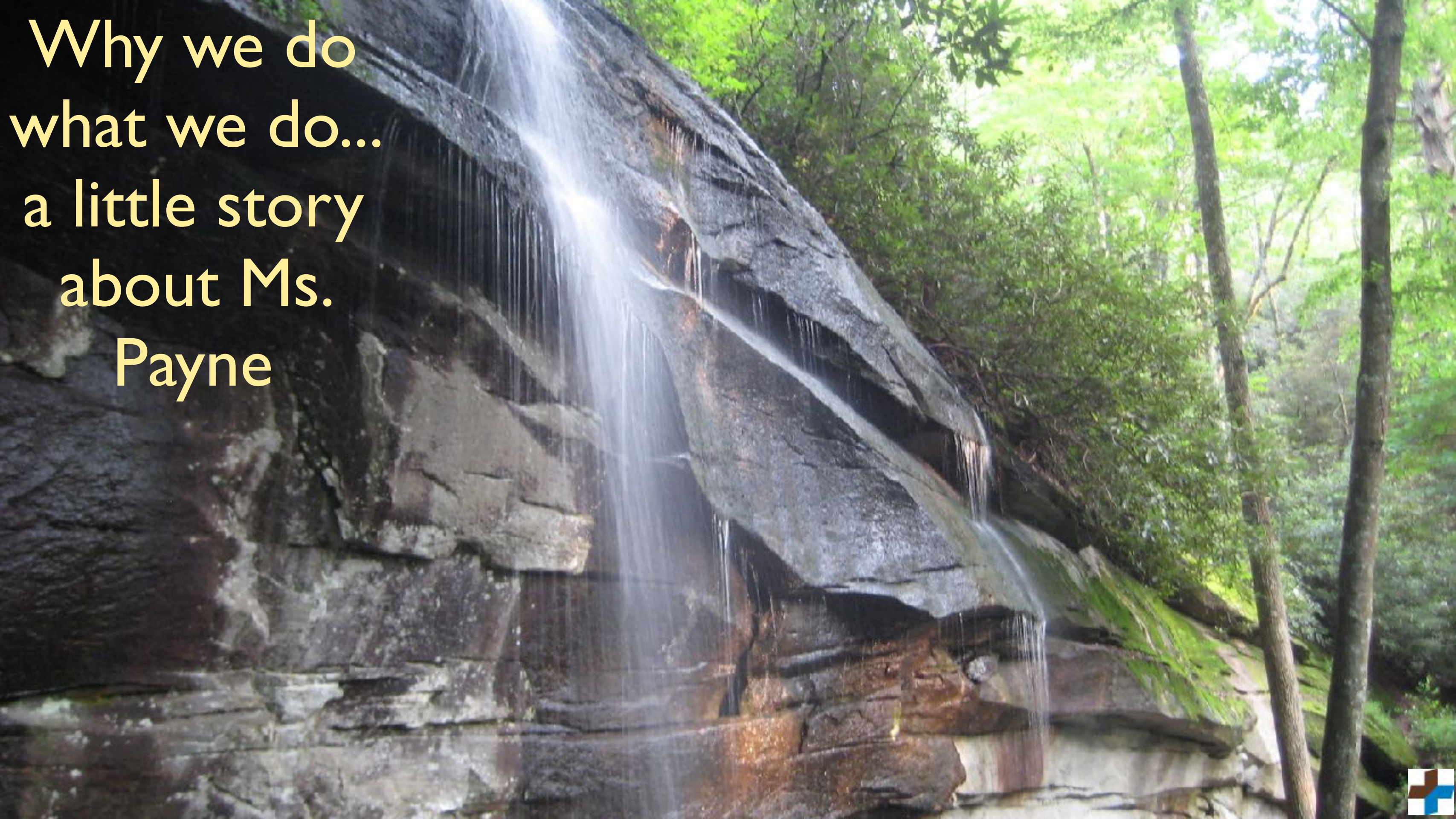
*Michael B. Davenport  
(a.k.a. Crick)*

*1954-2018*

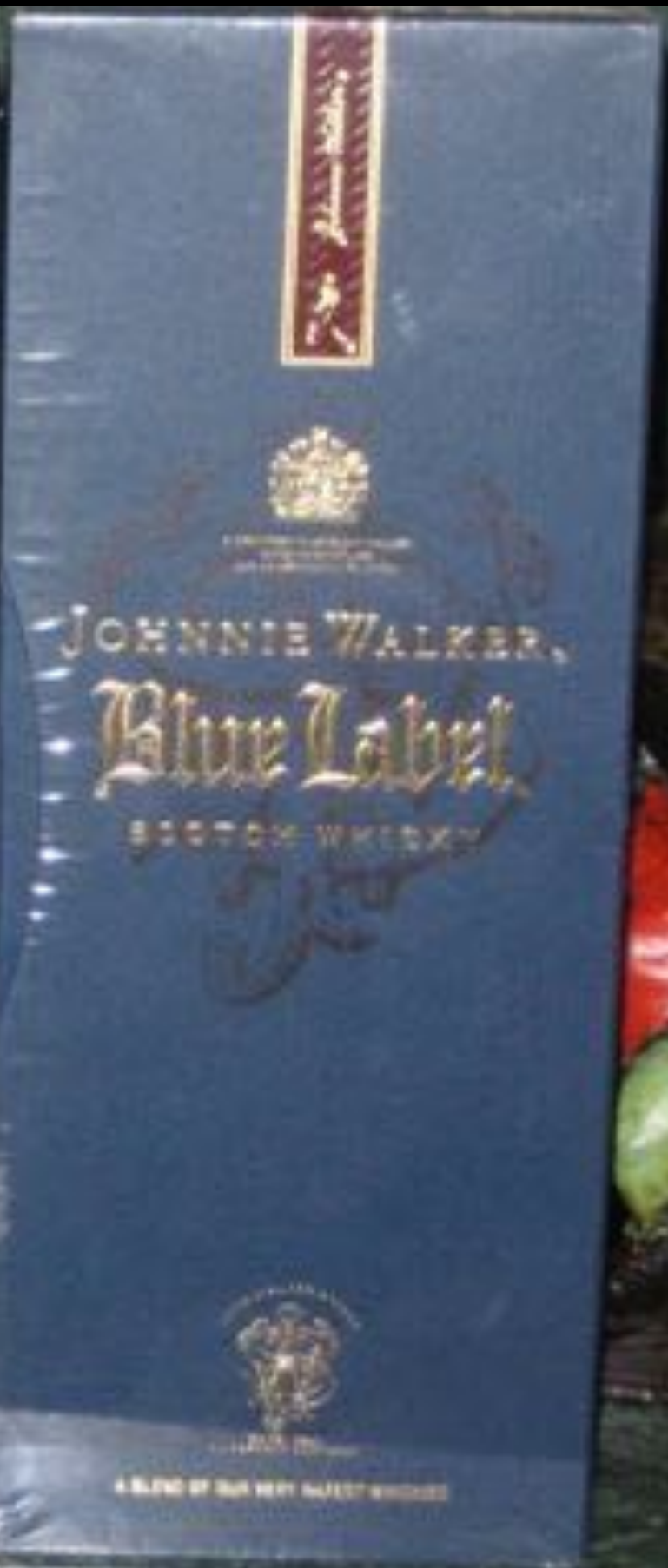




Why we do  
what we do...  
a little story  
about Ms.  
Payne









# Thank You!



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