Clinical application Of QLF technology

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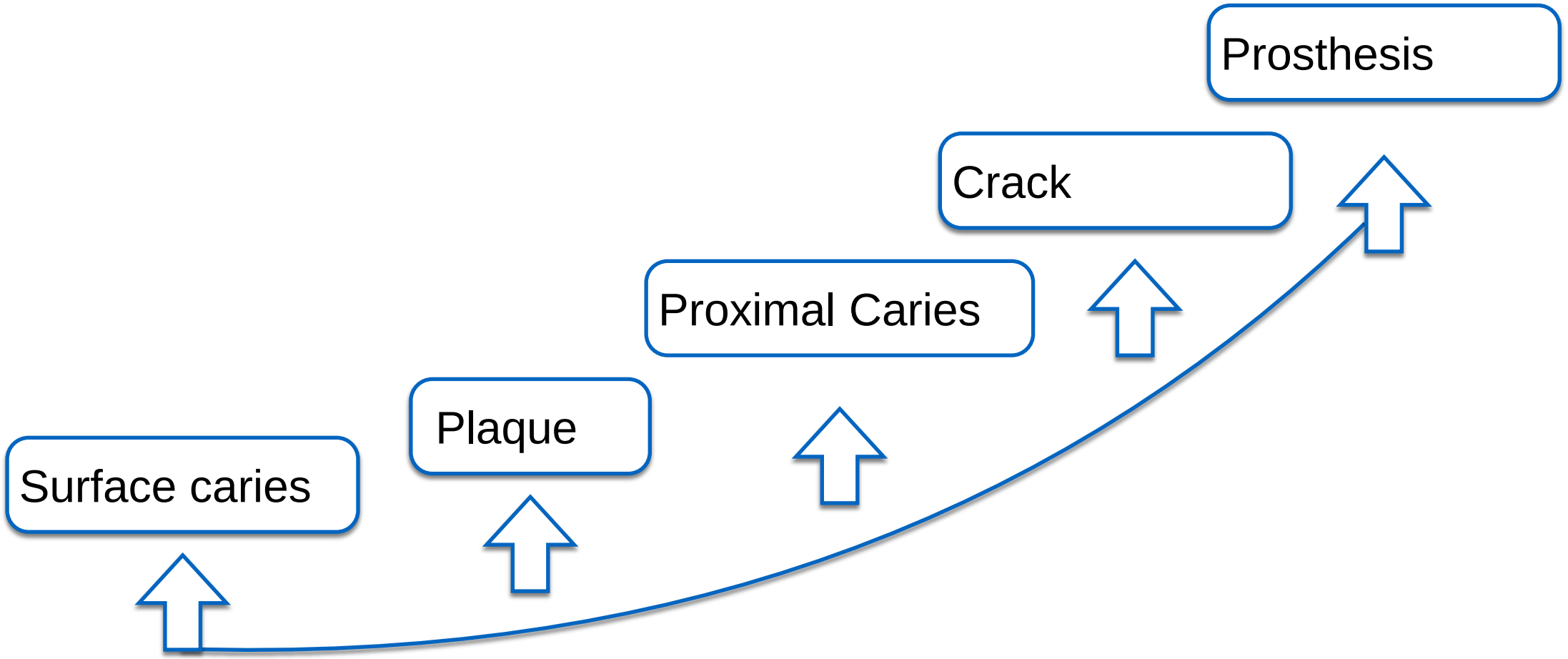
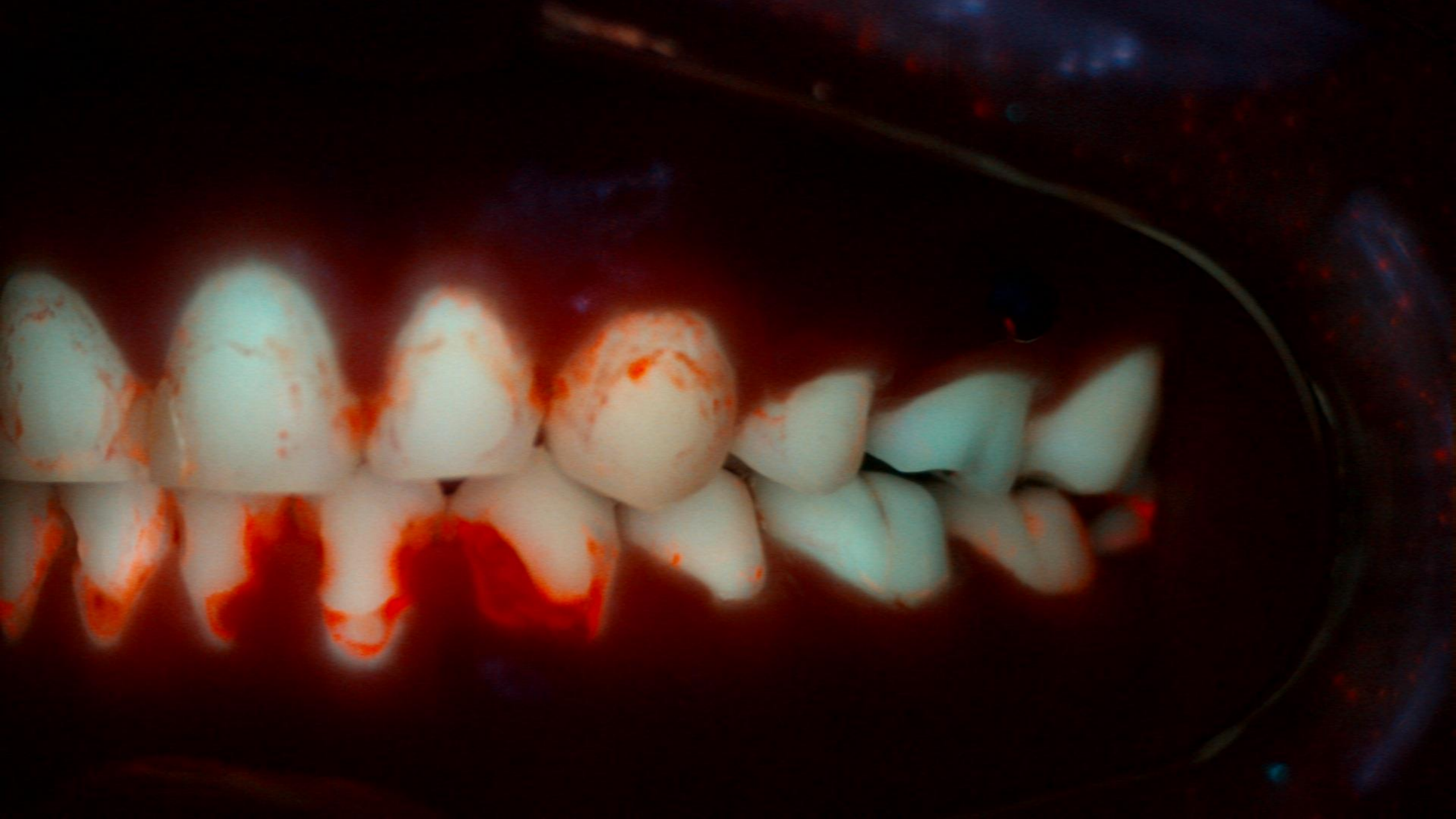
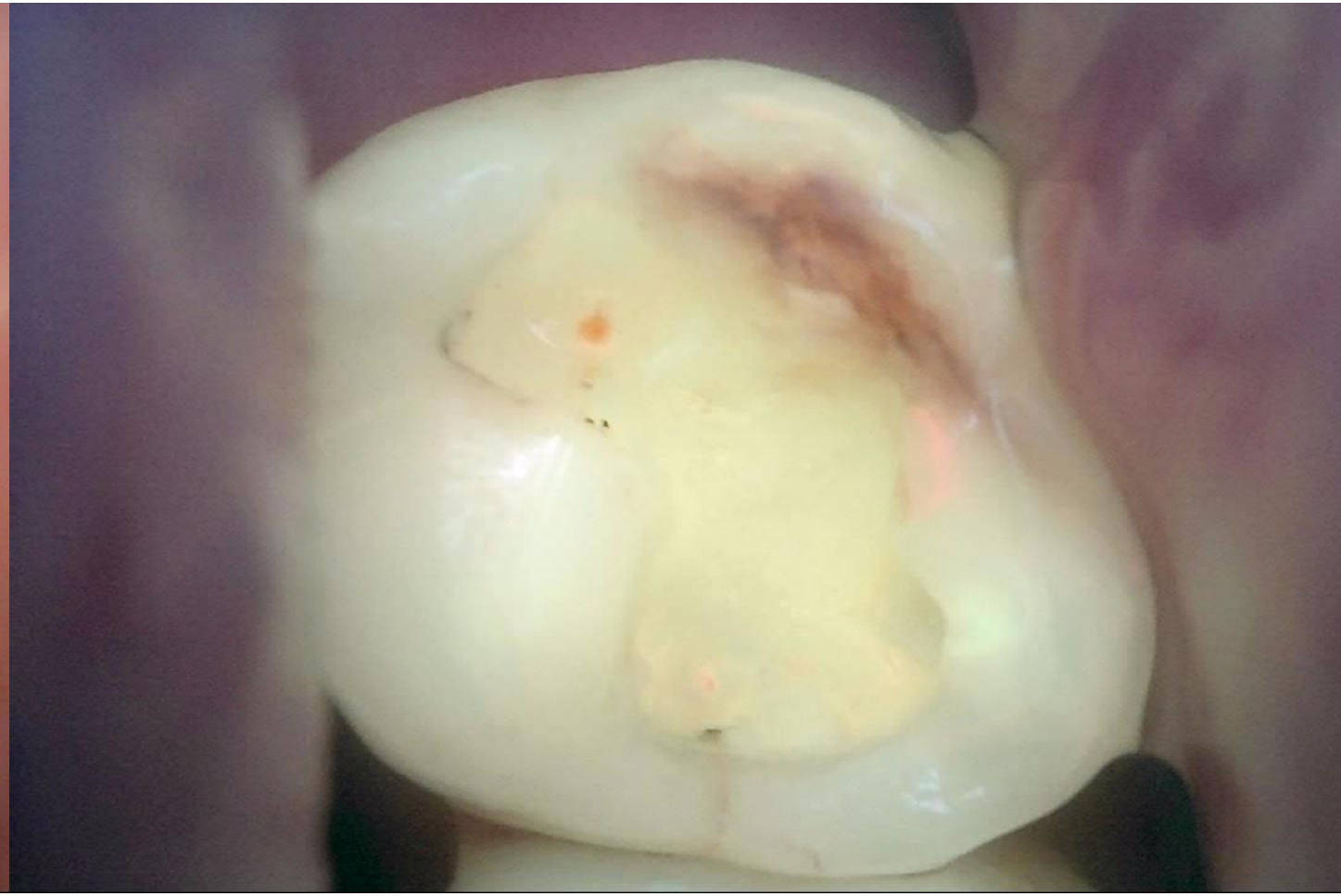
What can we detect ?







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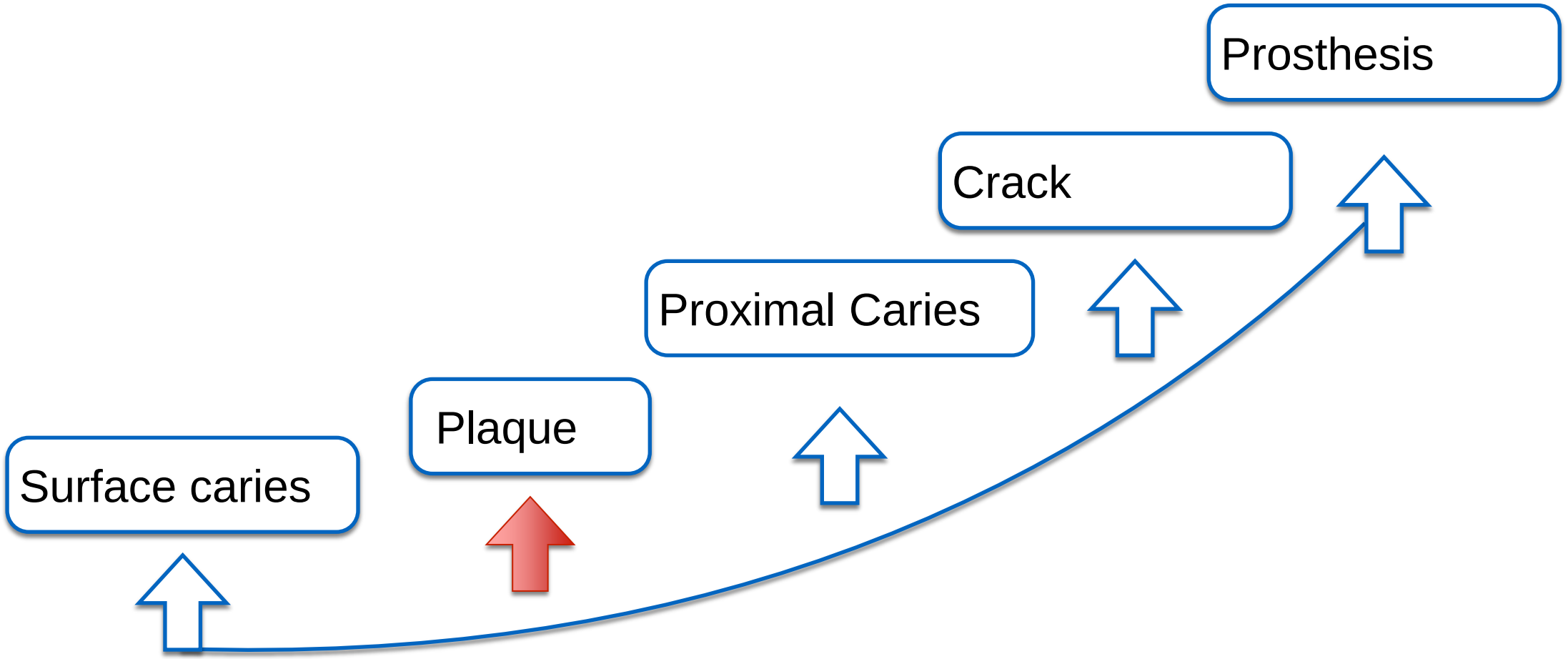

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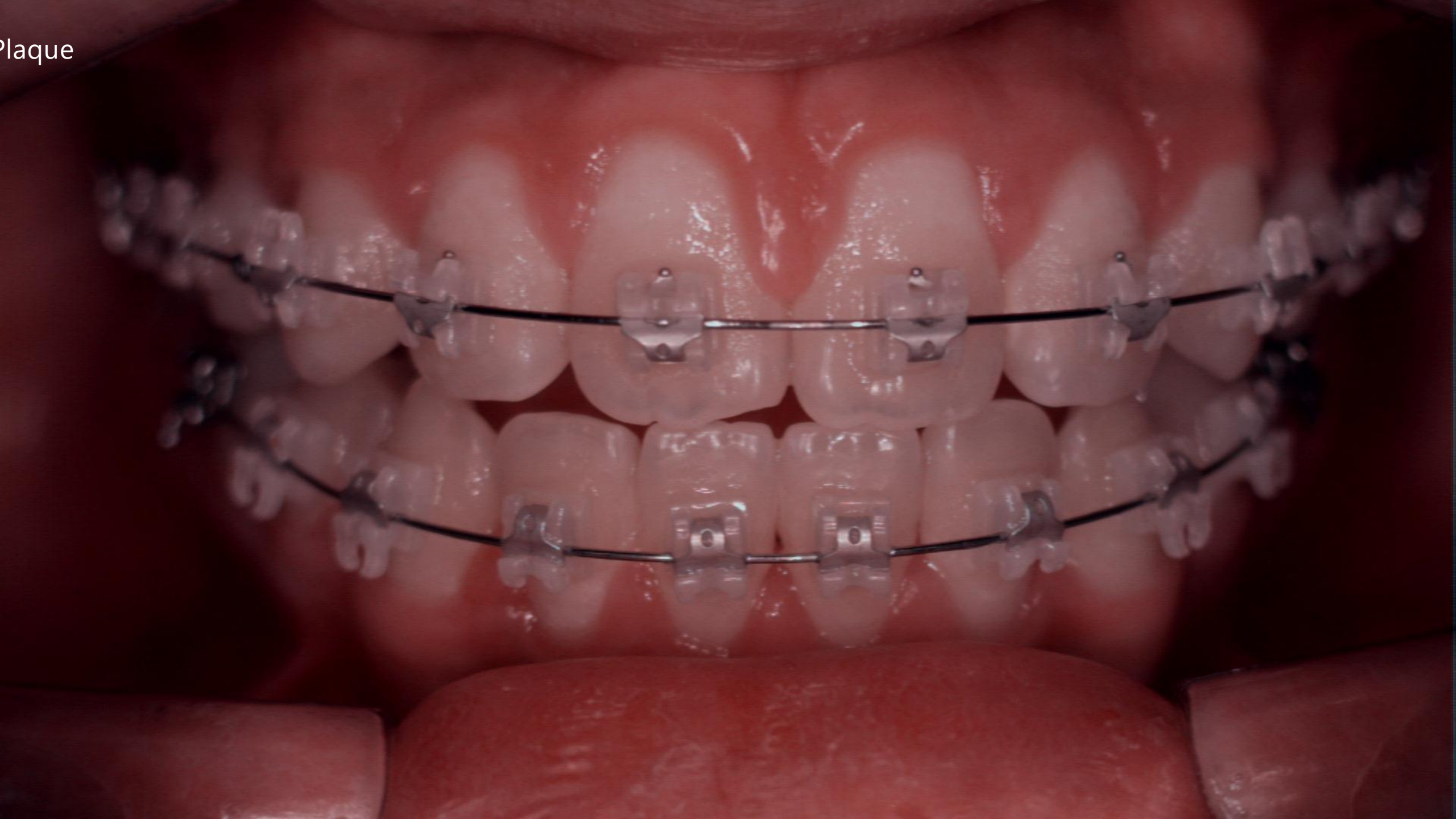

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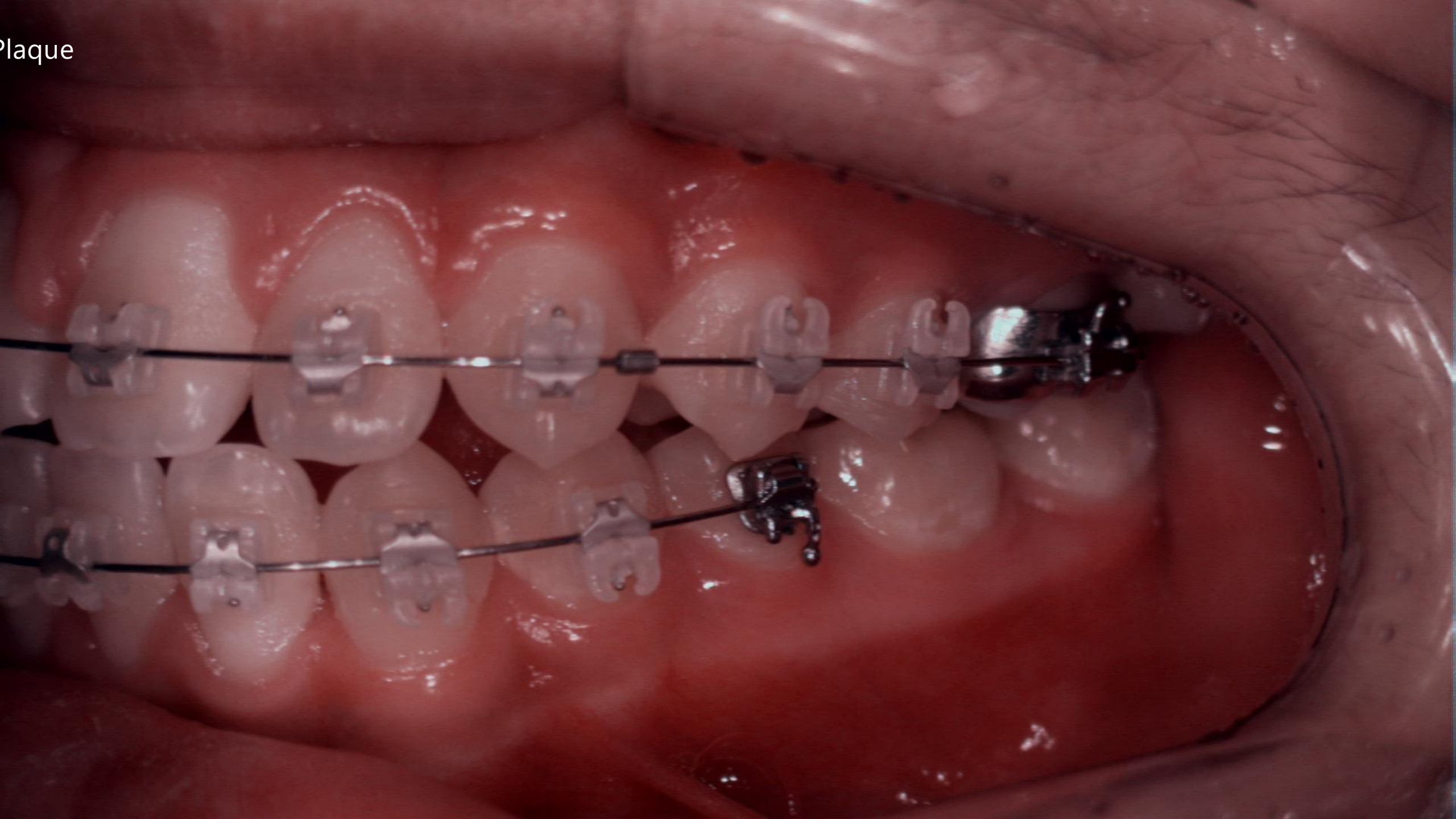

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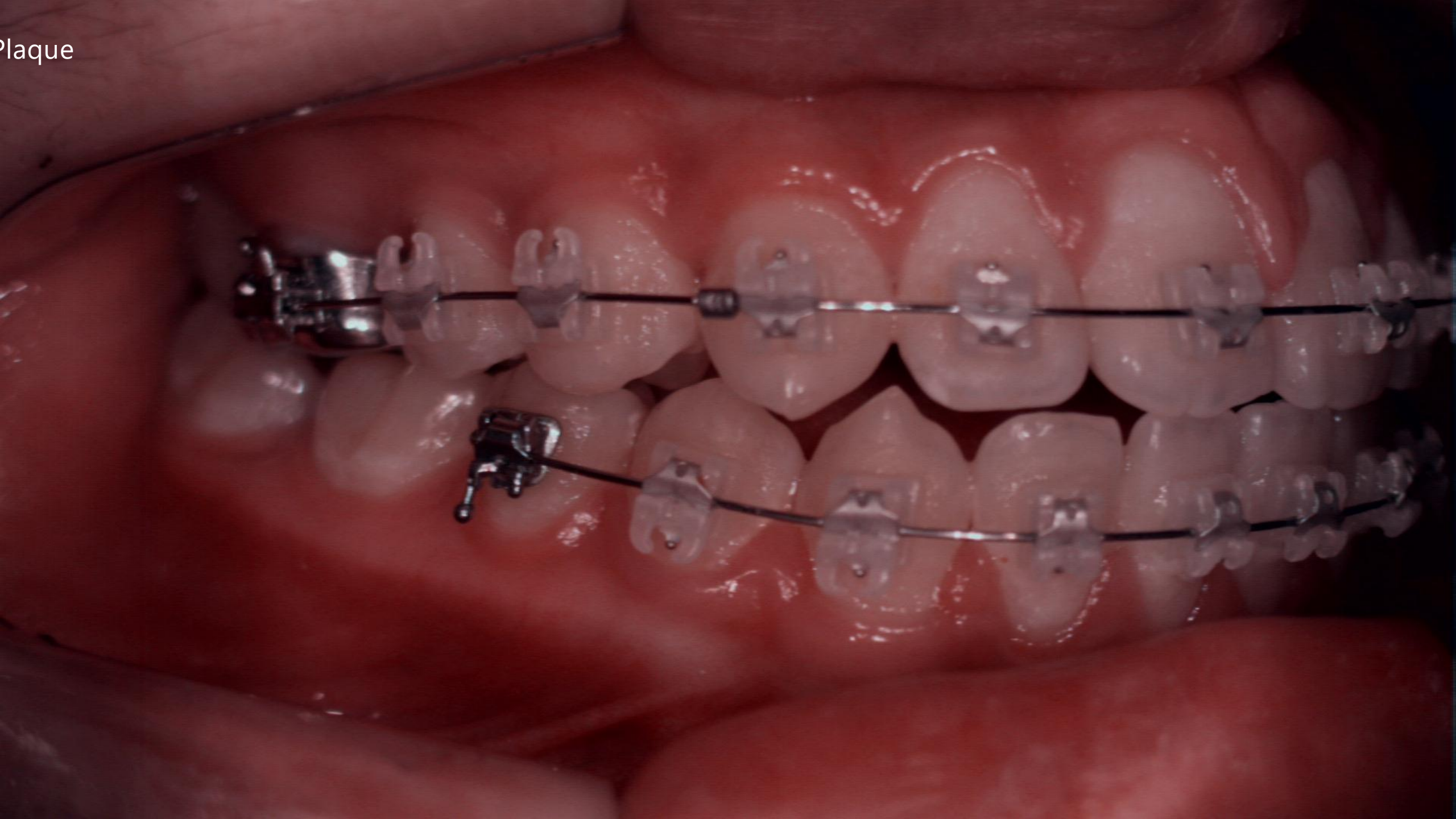

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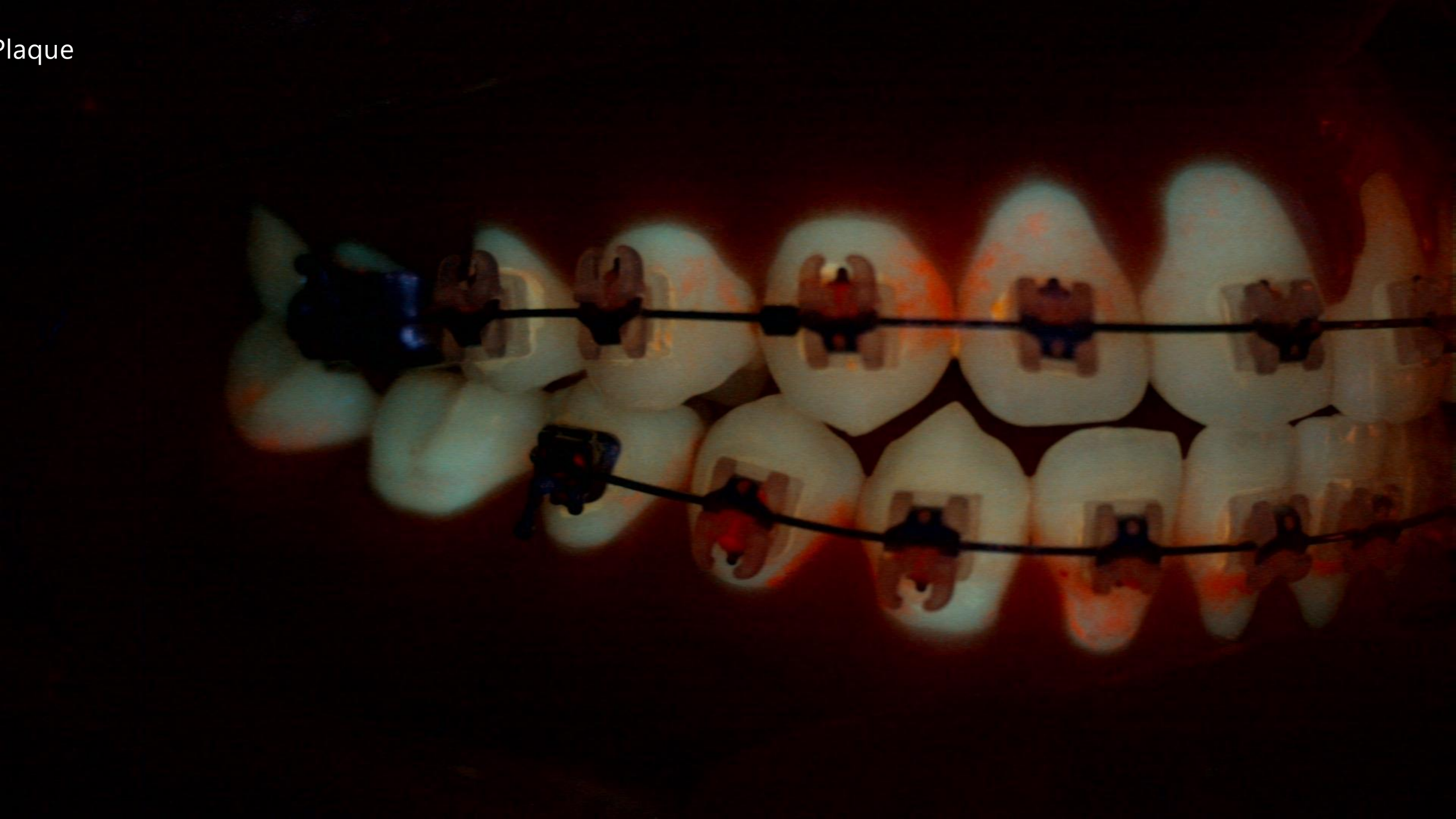

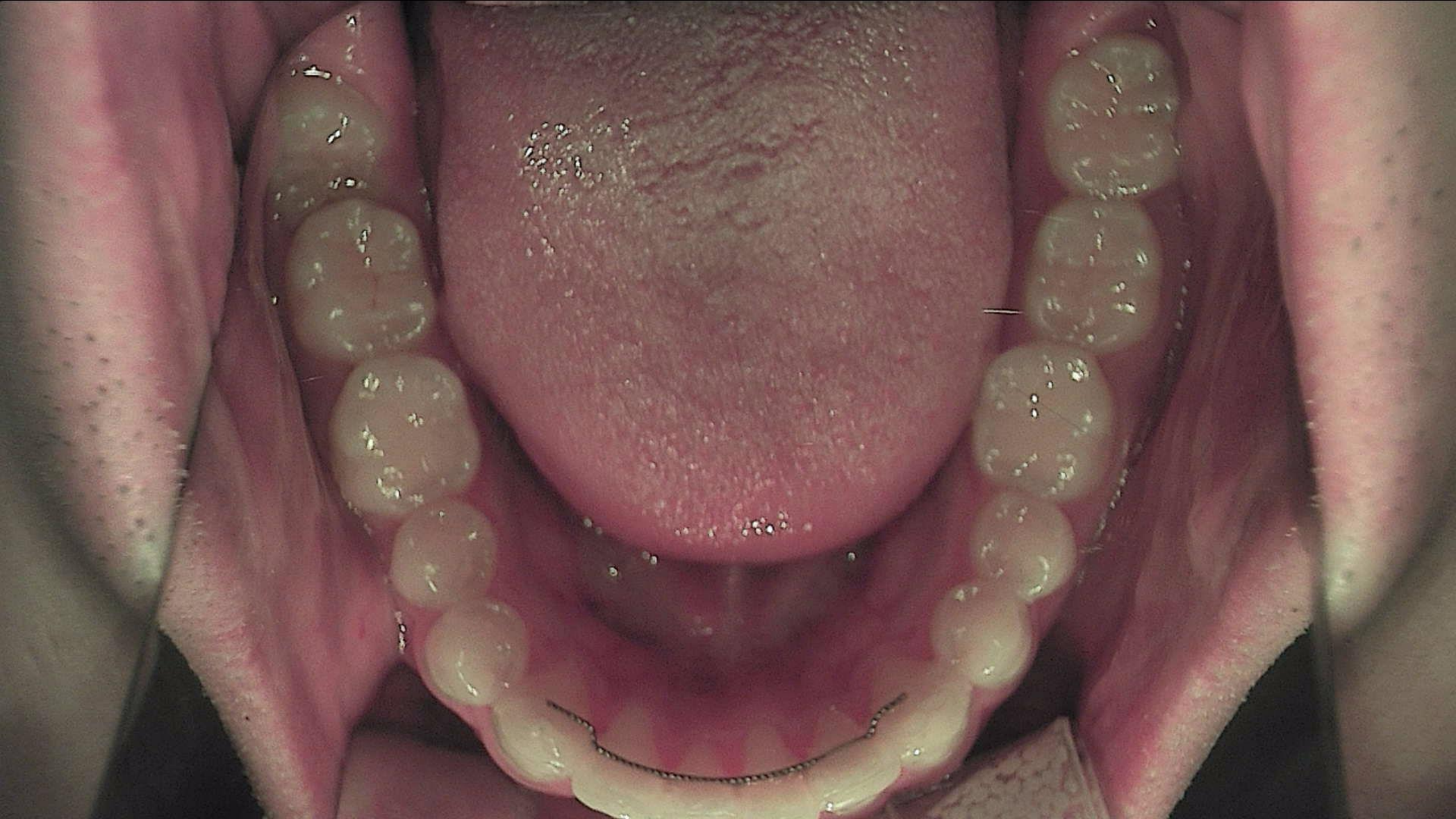

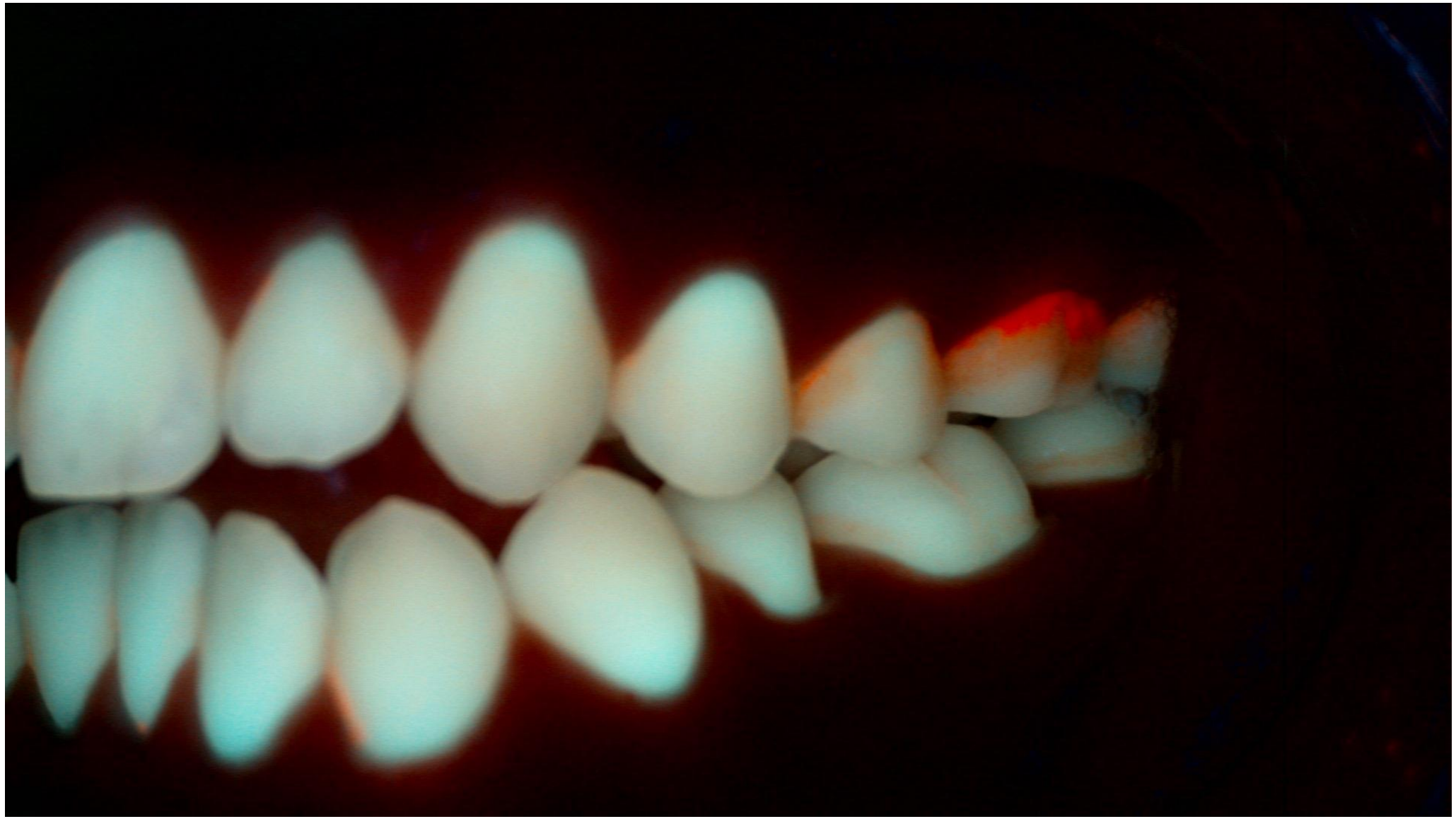

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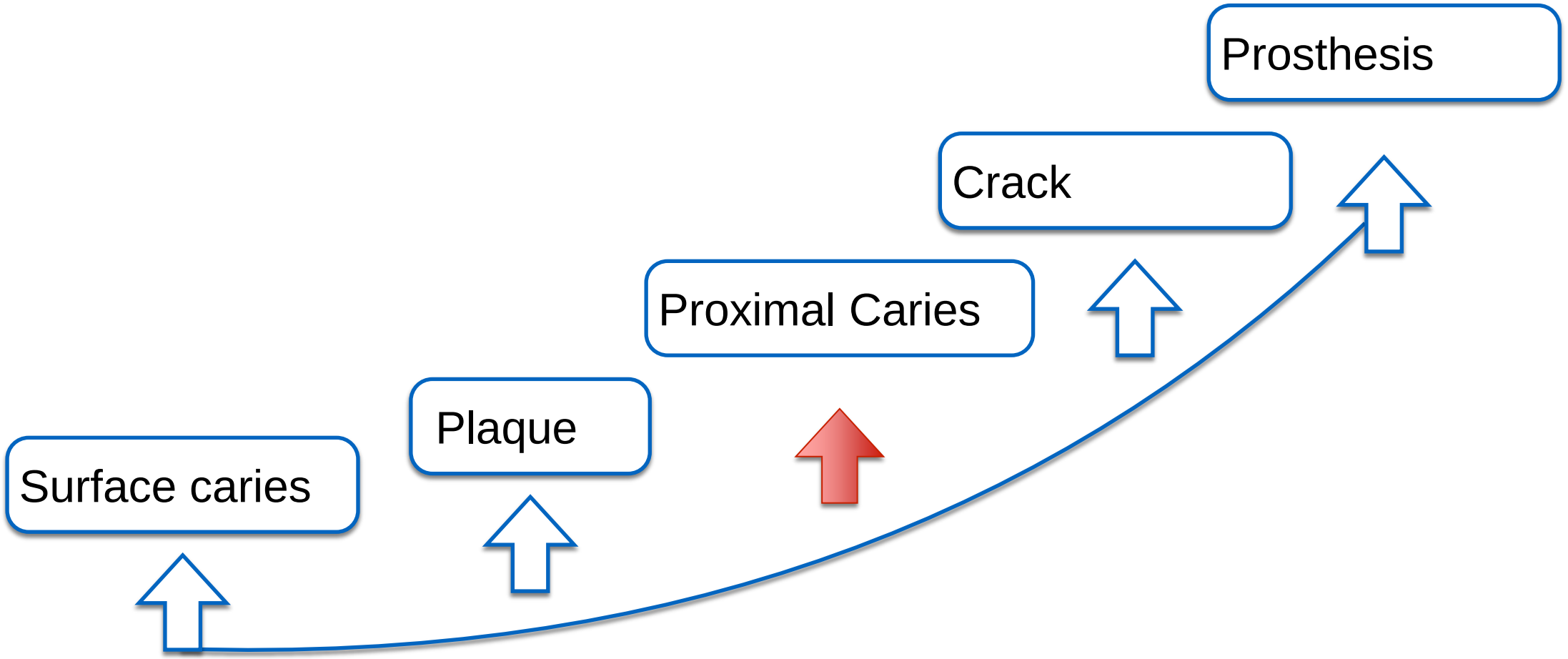

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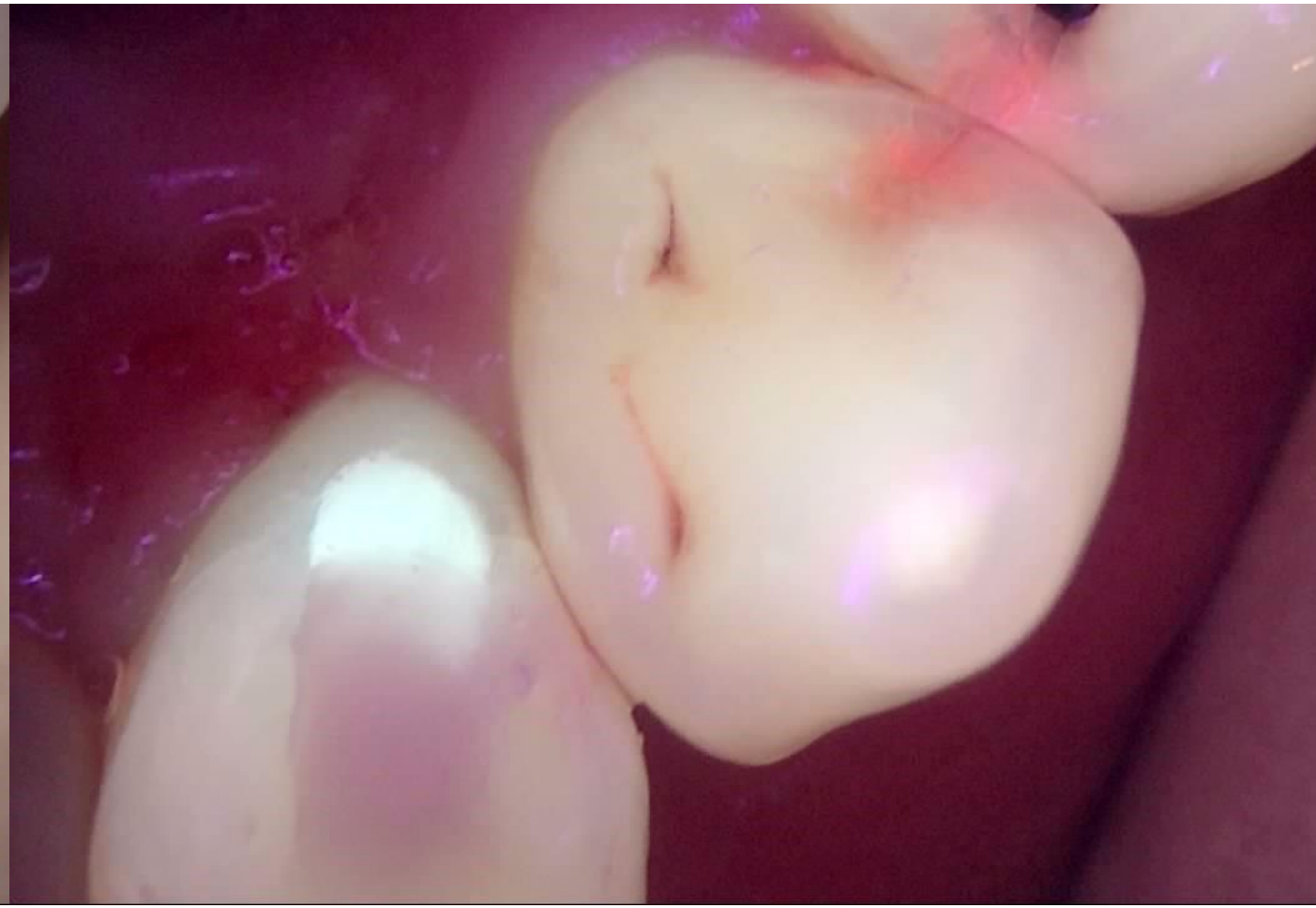

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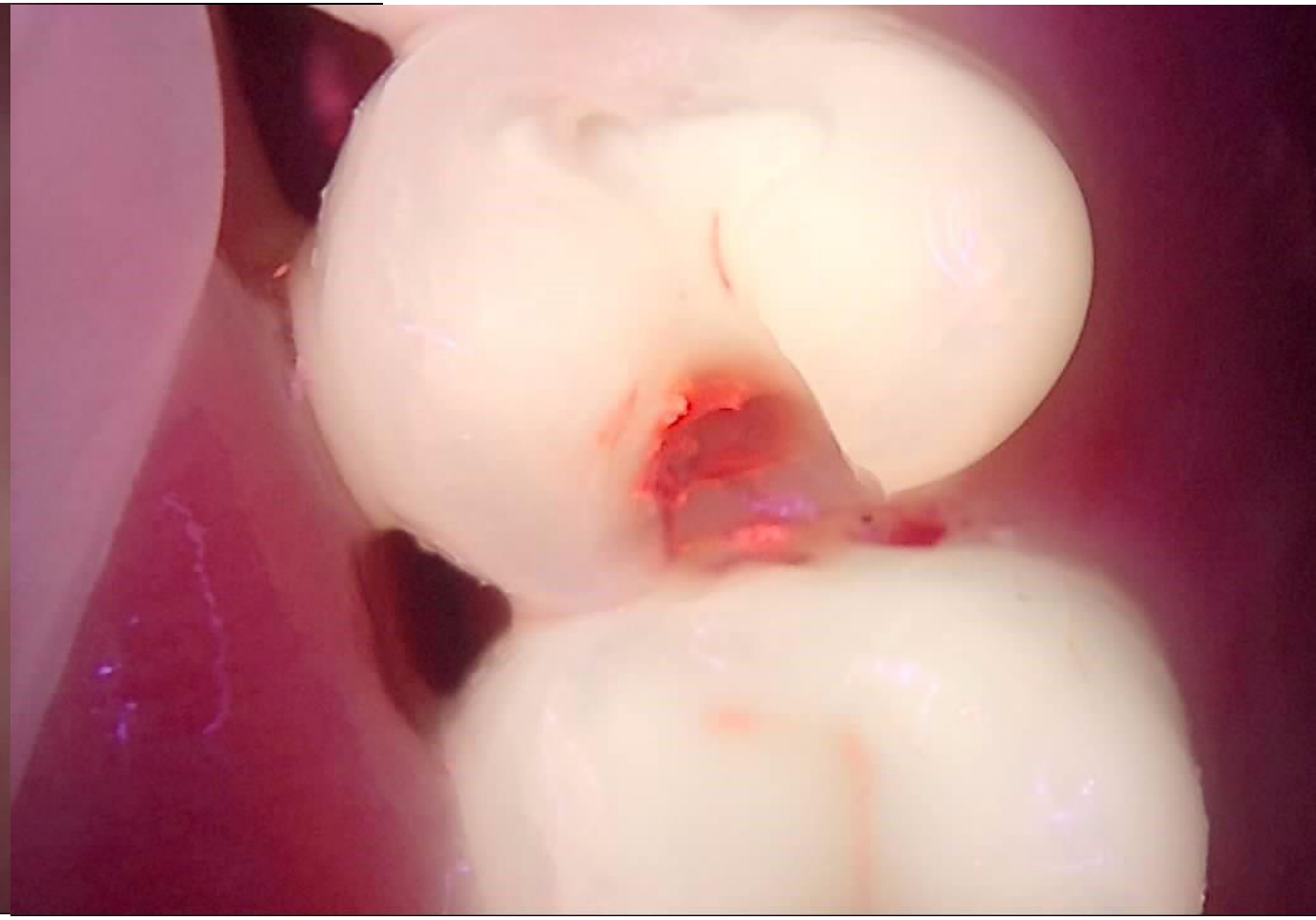
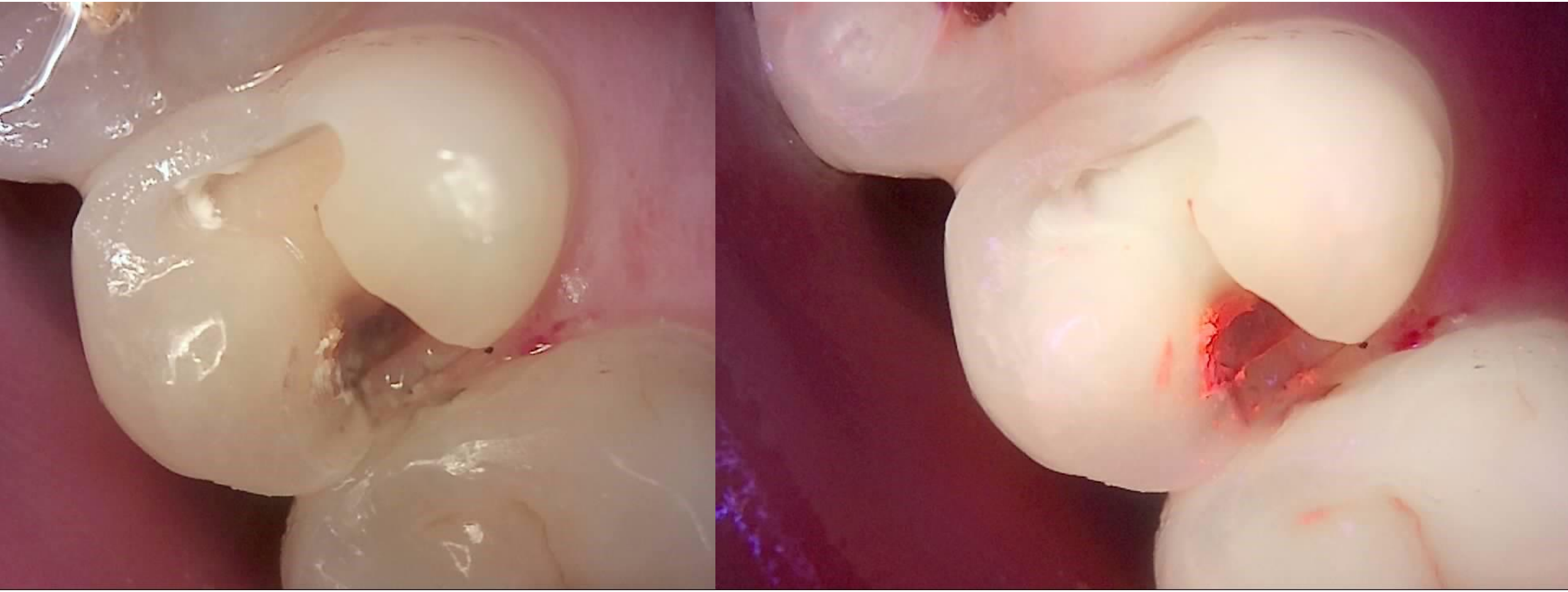
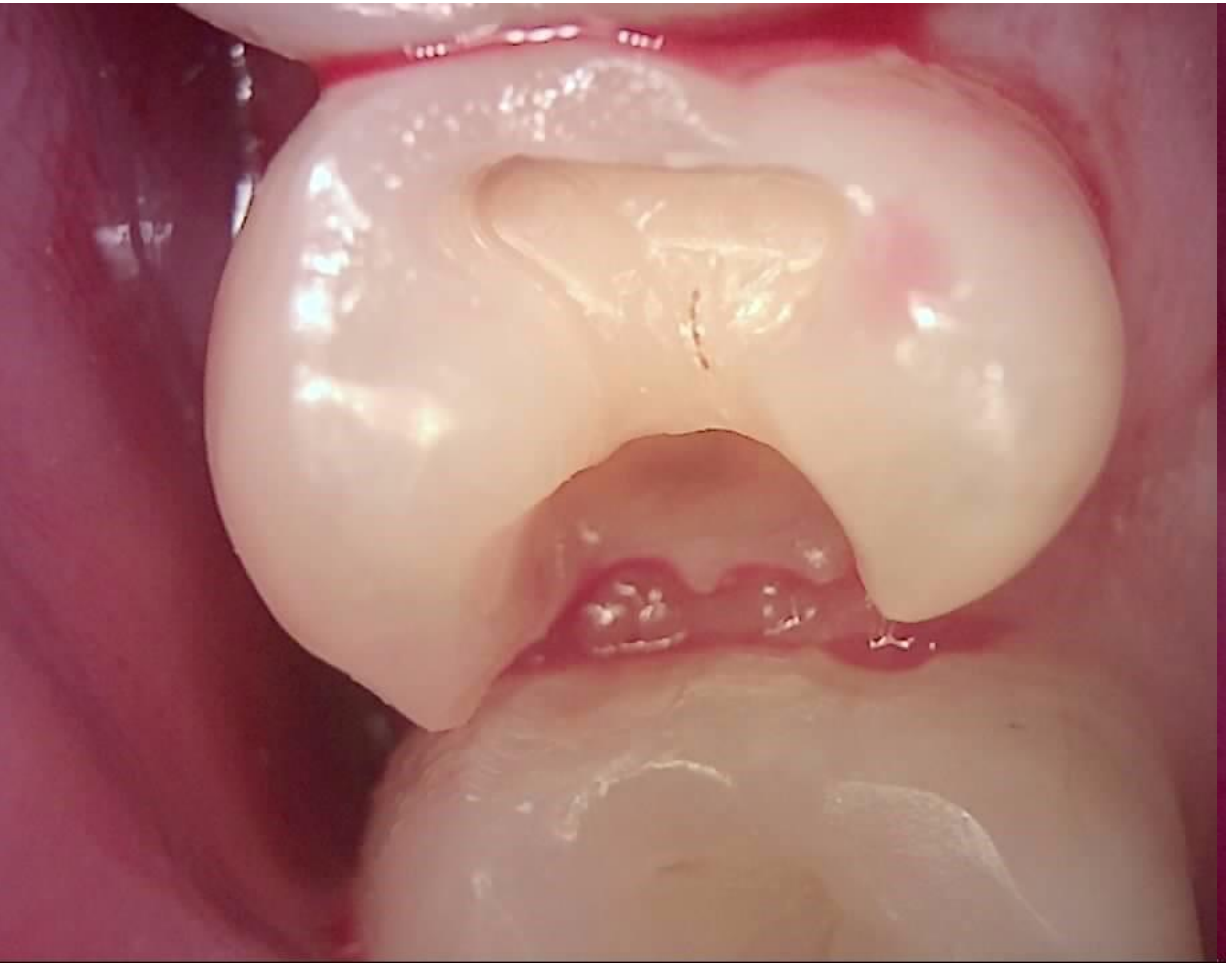
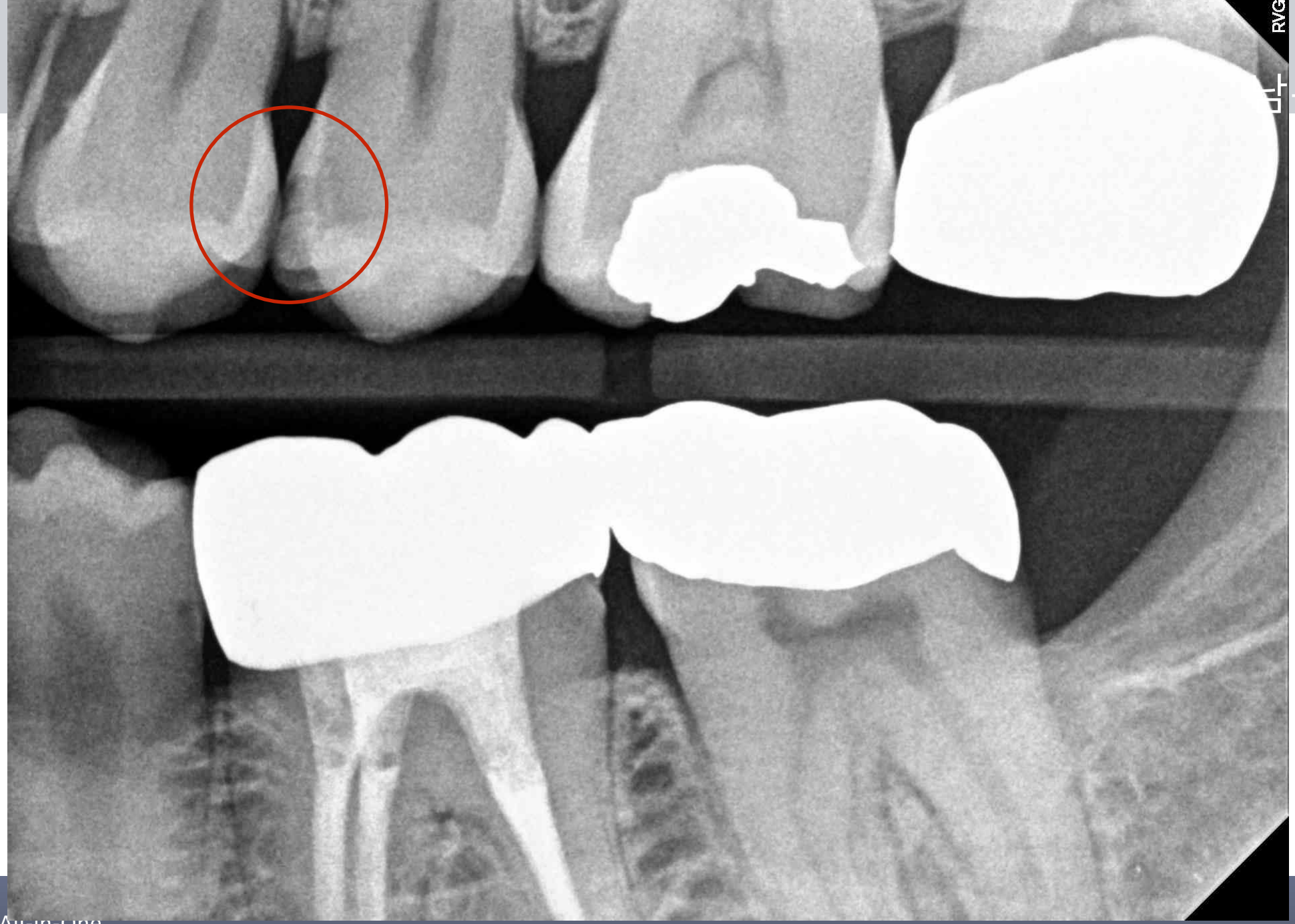


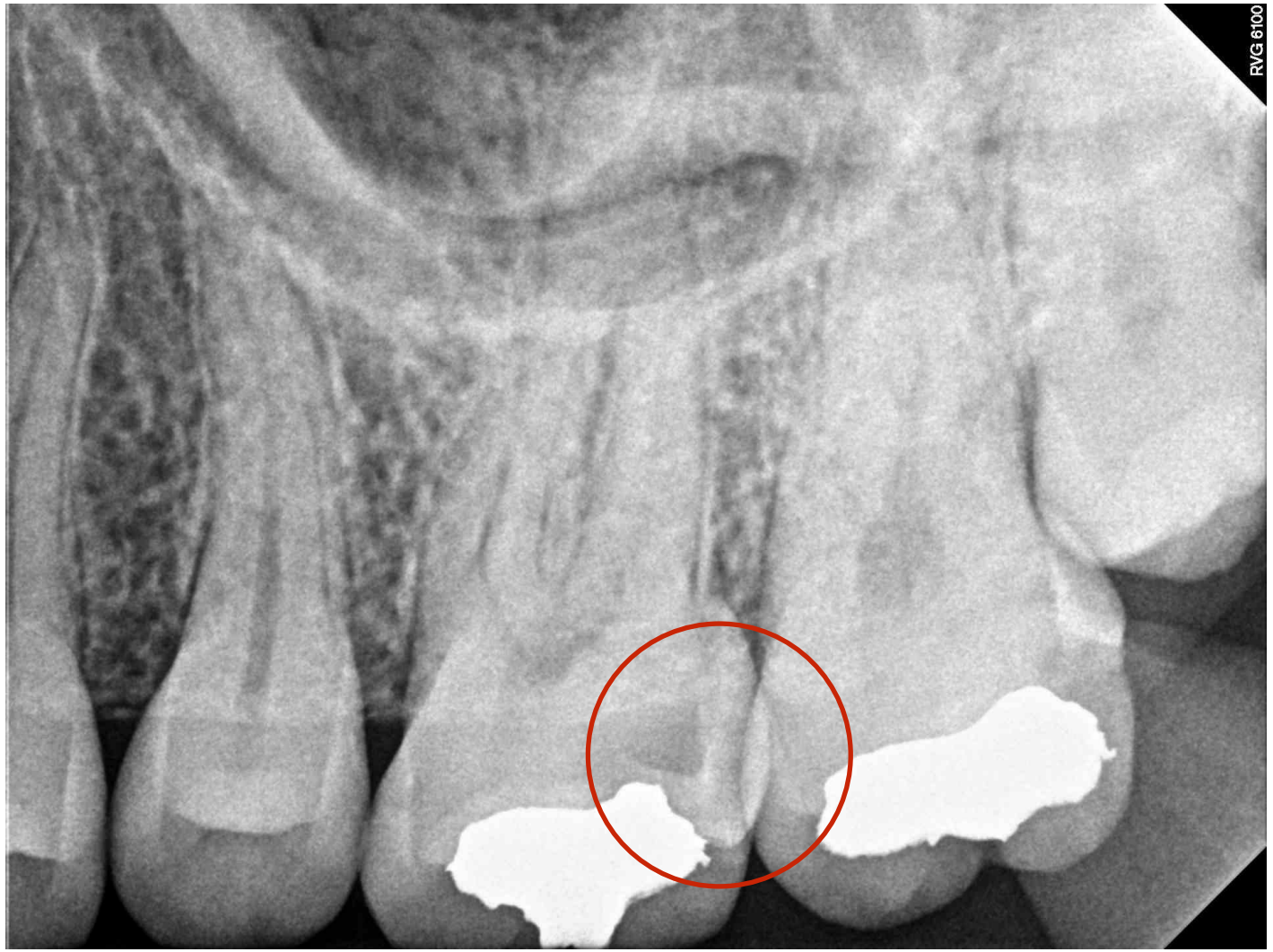




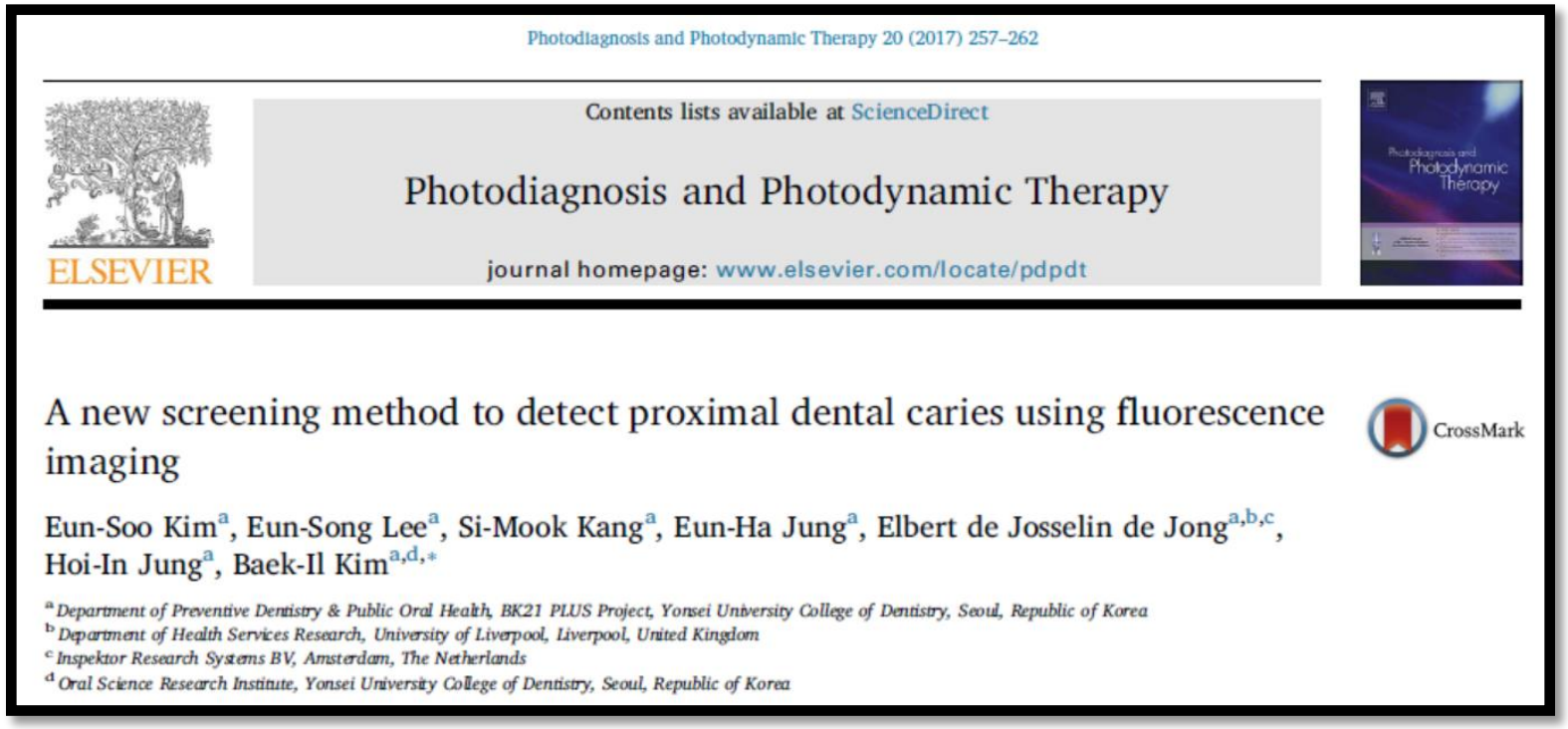


Proximal caries

Proximal caries



Clinical study: Proximal caries



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A new screening method to detect proximal dental caries using fluorescence imaging

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[b] Department of Health Services Research, University of Liverpool, Liverpool, United Kingdom
[c] Inspektor Research Systems BV, Amsterdam, The Netherlands
[d] Oral Science Research Institute, Yonsei University College of Dentistry, Seoul, Republic of Korea

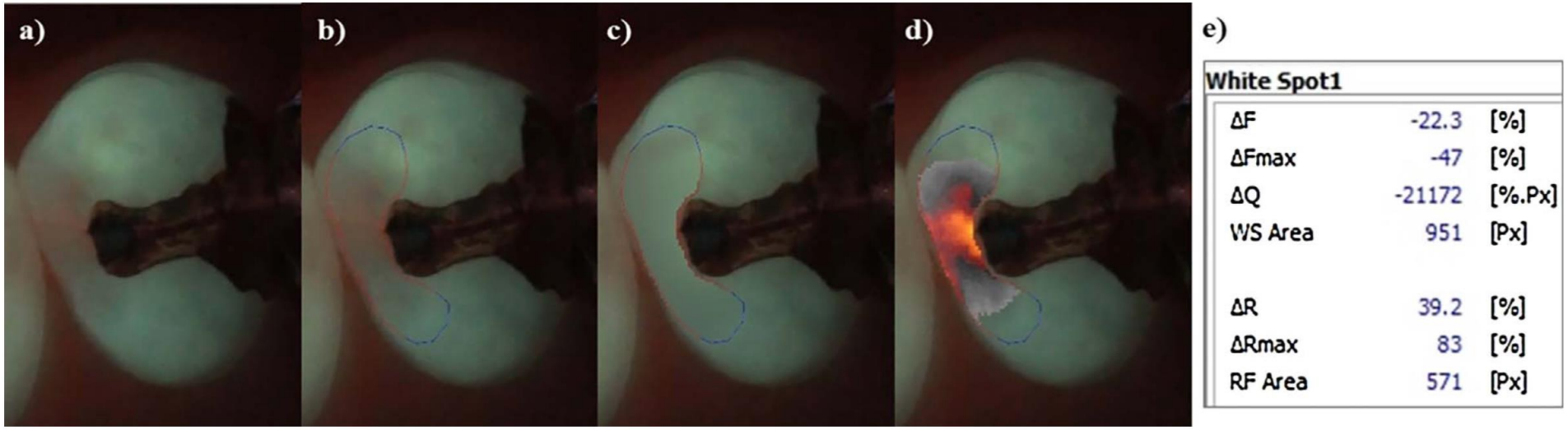
Objective

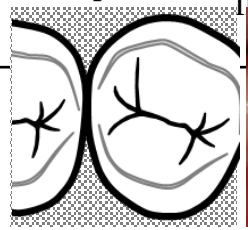
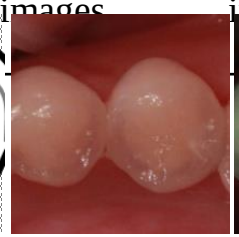
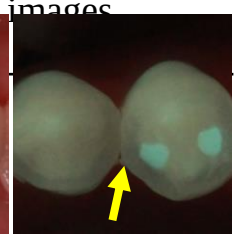
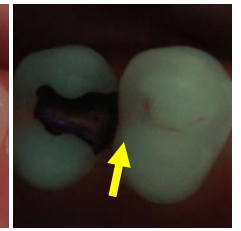
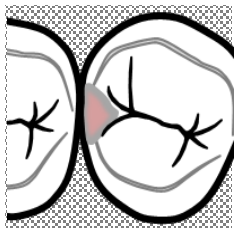
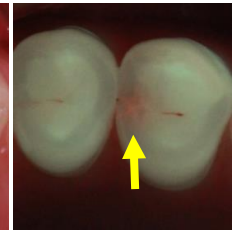
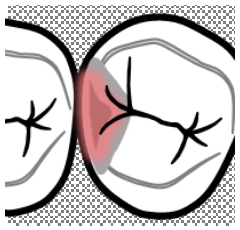
To assess the screening performance of the QLF technology to detect proximal caries in a clinical situation and to propose QLF score for the proximal caries (QS-Proximal).

Validity of QLF parameters

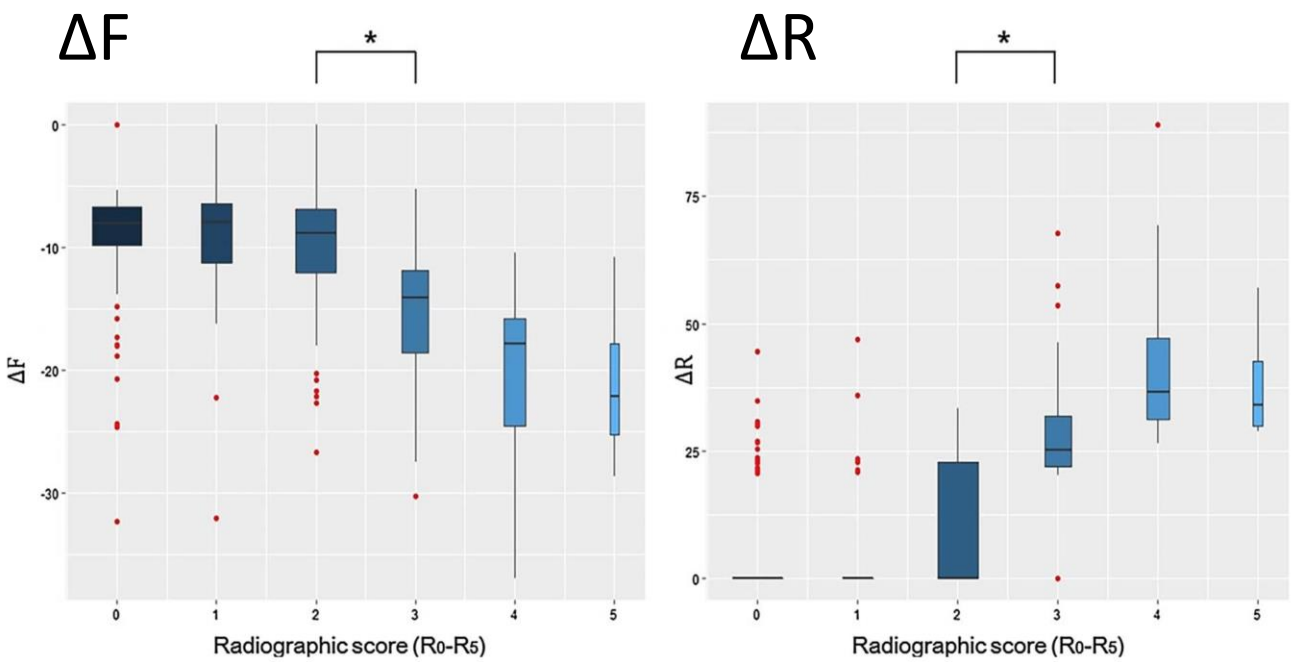
65 subjects, 280 proximal surface:

- Radiograhphic (bitewing)
- Visual tactile (ICDAS)
- **QLF (ΔF, ΔR, QS-proximal)**



QS-Proximal value	Description	Examples	White-light images	Fluorescence images
Q0	No fluorescence change			
Q1	Irregular dark shadow but no red fluorescence			
Q2	Faint red fluorescence limited in 1/3 of buccо-lingual width			
Q3	Strong red fluorescence over the 1/3 of buccо-lingual width			

Validity of QLF parameters



	ΔF	ΔR
Cut-off points	-12.4	23.3
Sensitivity	0.825	0.842
Specificity	0.816	0.879
AUROC (95% C.I.)	0.860 (0.808–0.913)	0.902 (0.851–0.953)

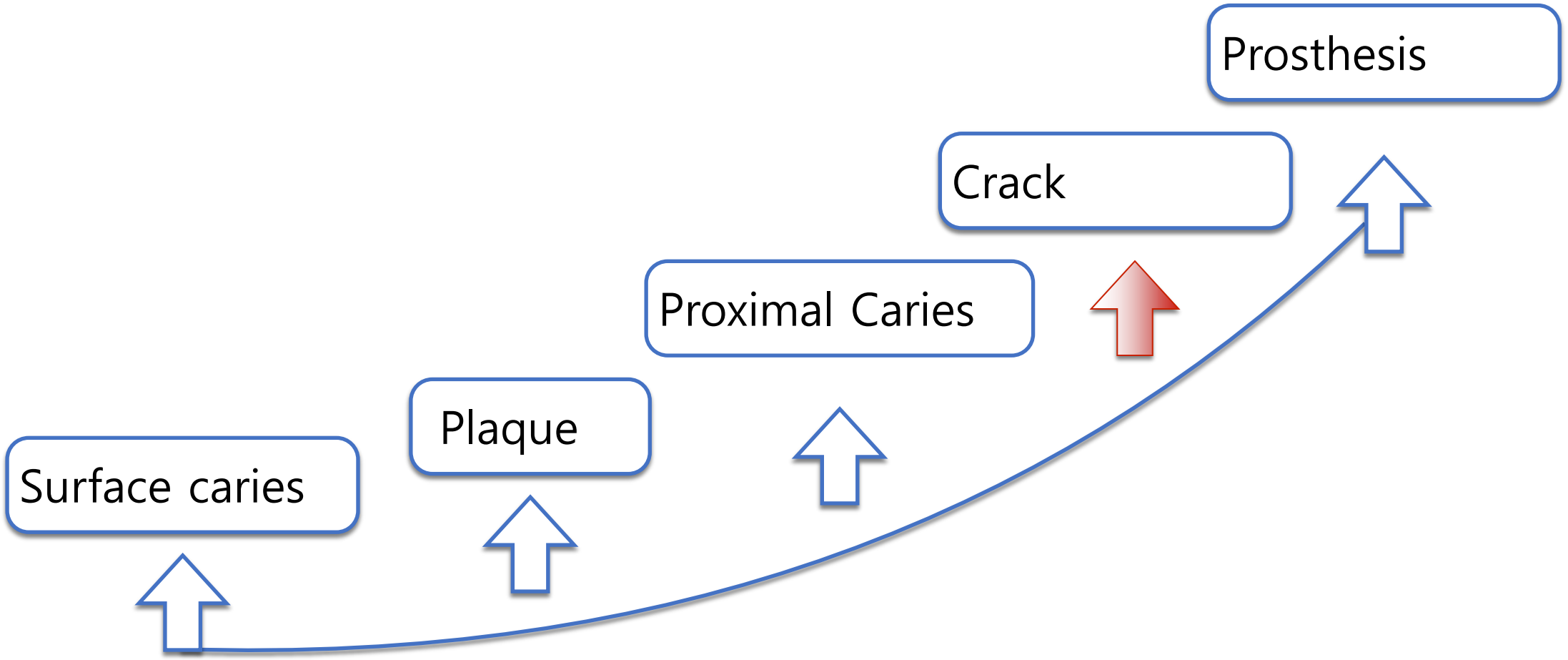
Validity of QS-Proximal

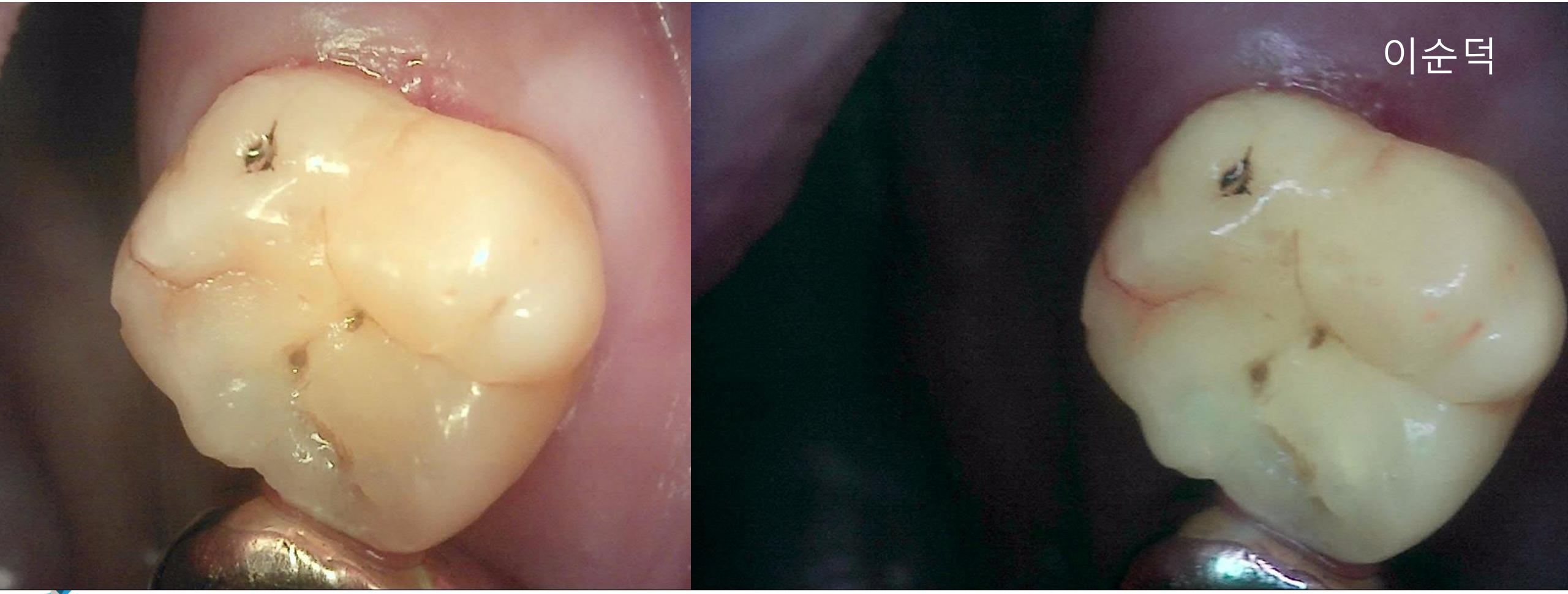
The sensitivity, specificity, and AUROC value of the QLF score (QS-Proximal) and visual score at different cut-off thresholds (Q_0/Q_1, Q_1/Q_2) to detect proximal caries at the dentine level (R_{0-2}/R_{3-5}) measured by radiographic scores.

	QLF score (QS-Proximal)	
	Q_0/Q_{R0-2}	Q_1/Q_{R3-5}
Sensitivity	0.894	0.702
Specificity	0.834	0.951
AUROC (95% CI)	0.864 (0.810–0.919)	0.826 (0.753–0.900)

AUROC, area under the receiver operating characteristic curve; CI, confidence interval.

What can we detect ?

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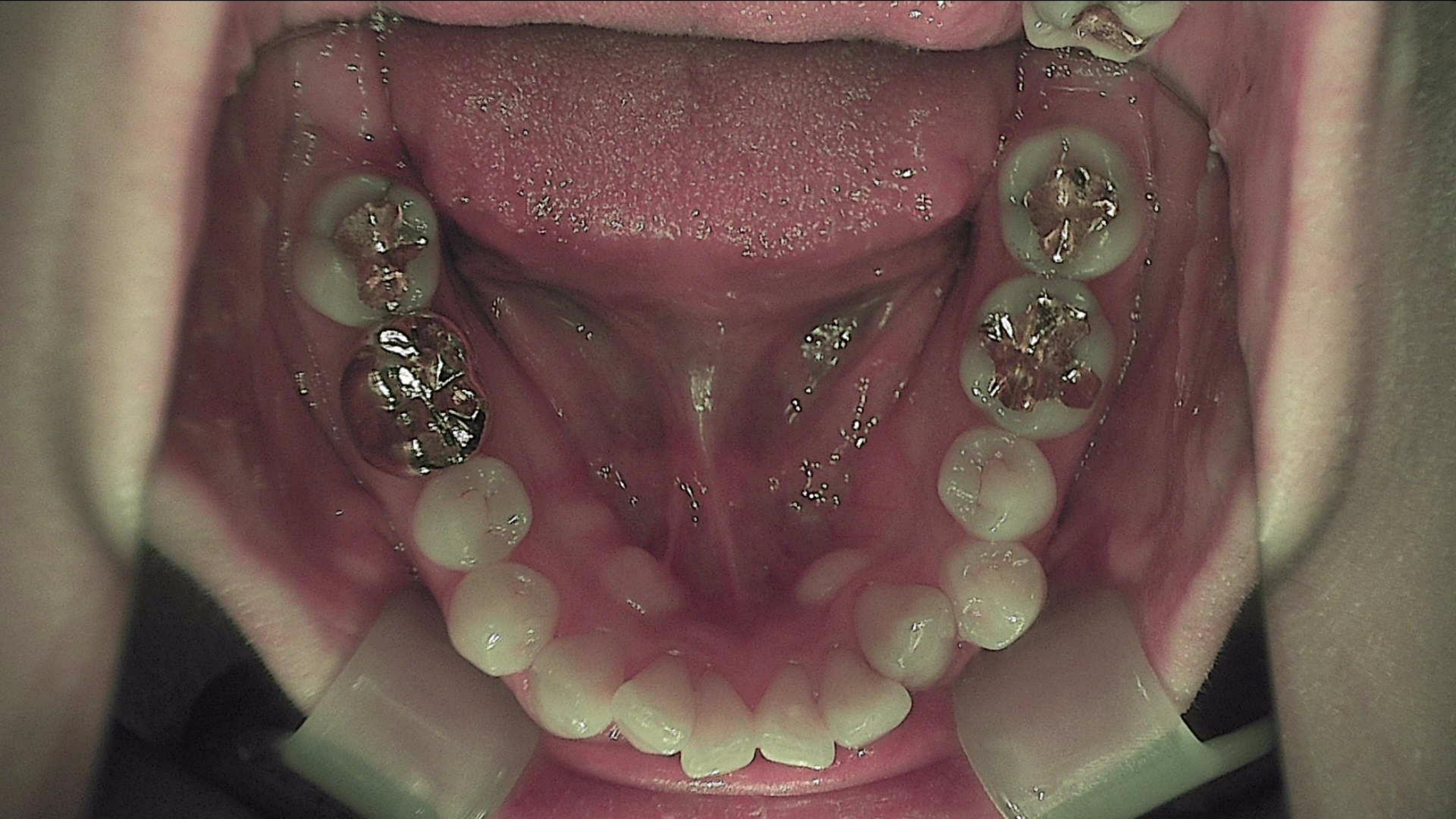

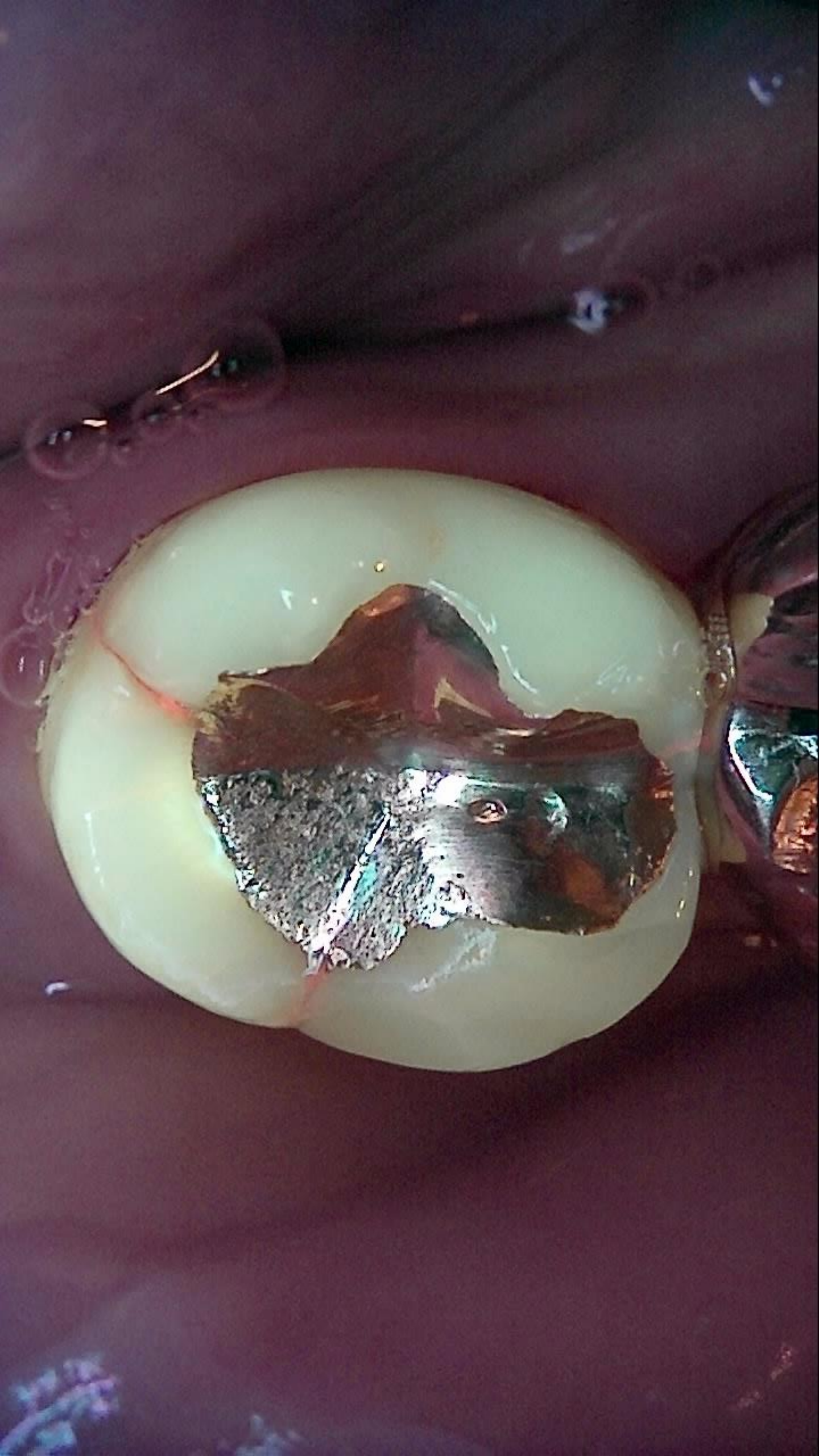

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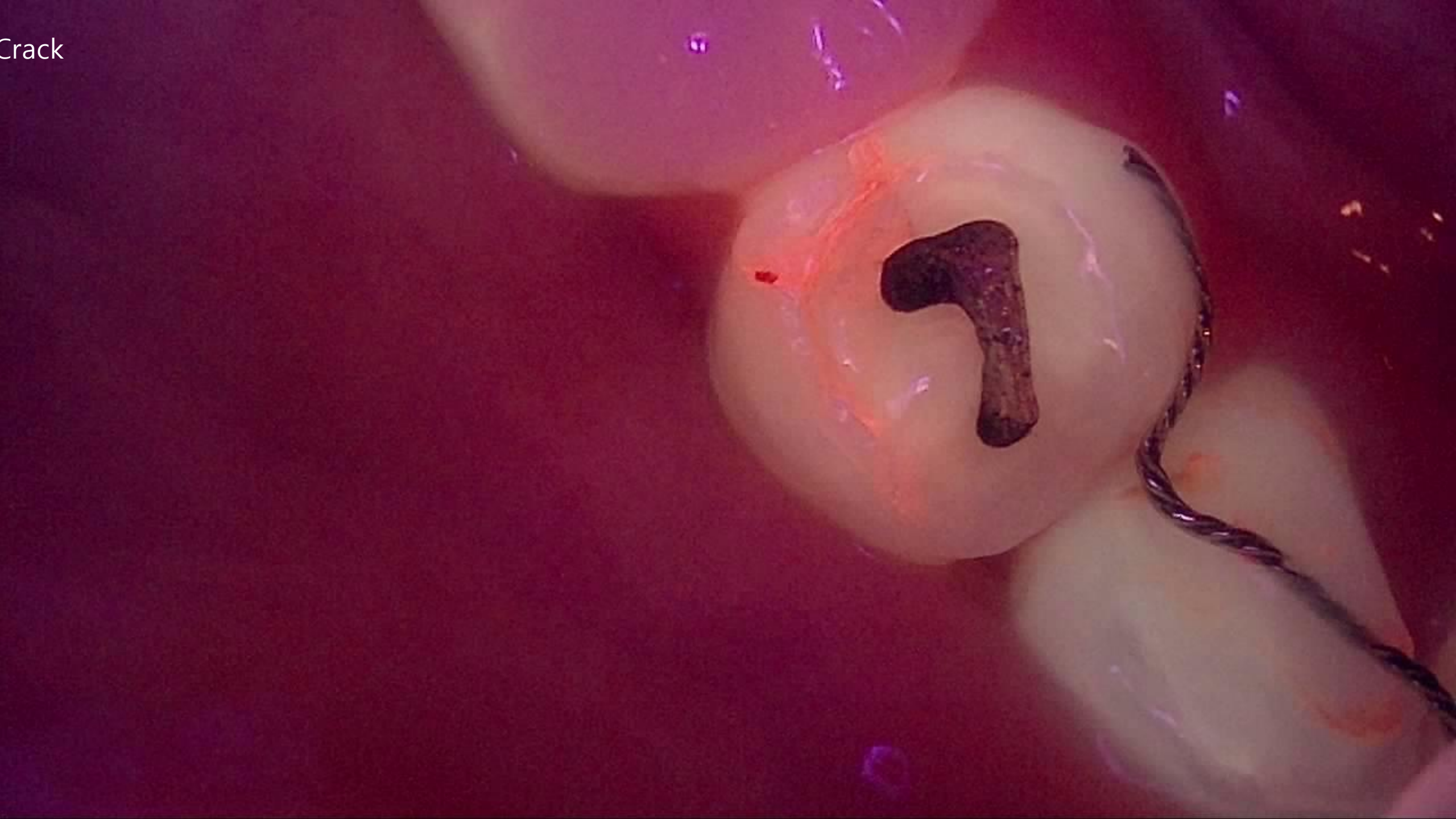
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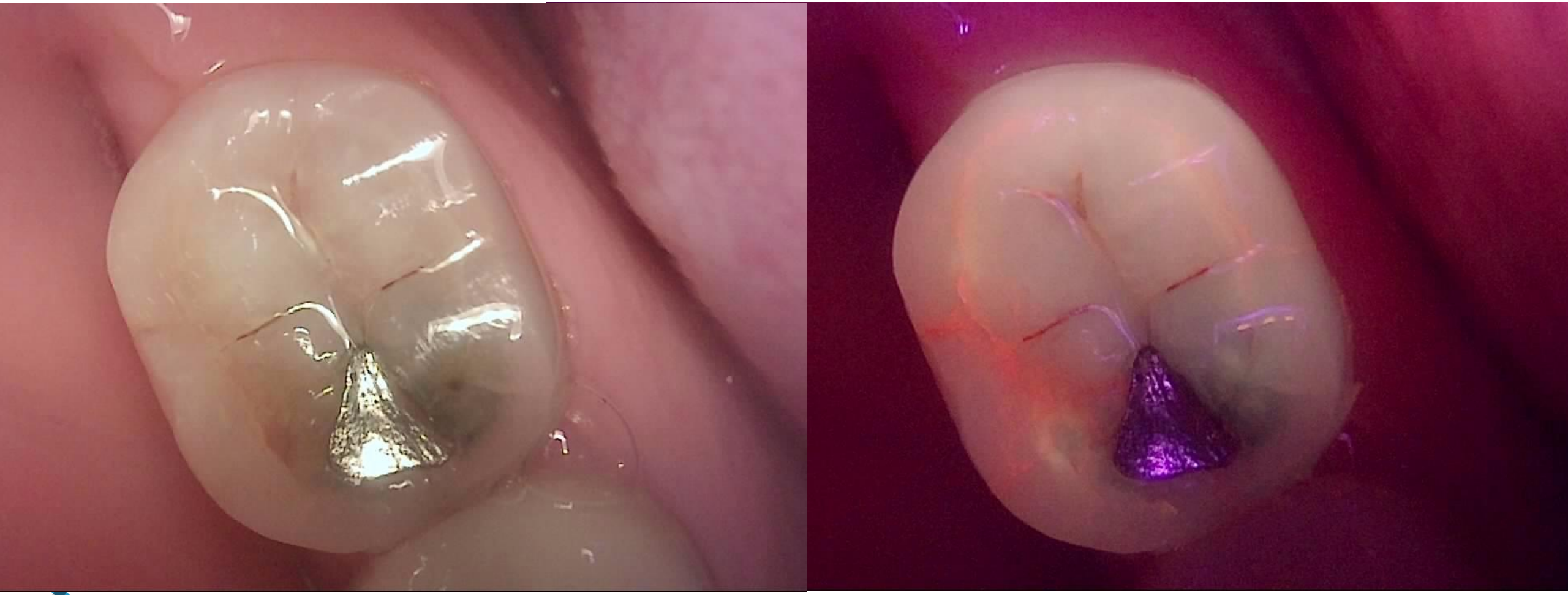

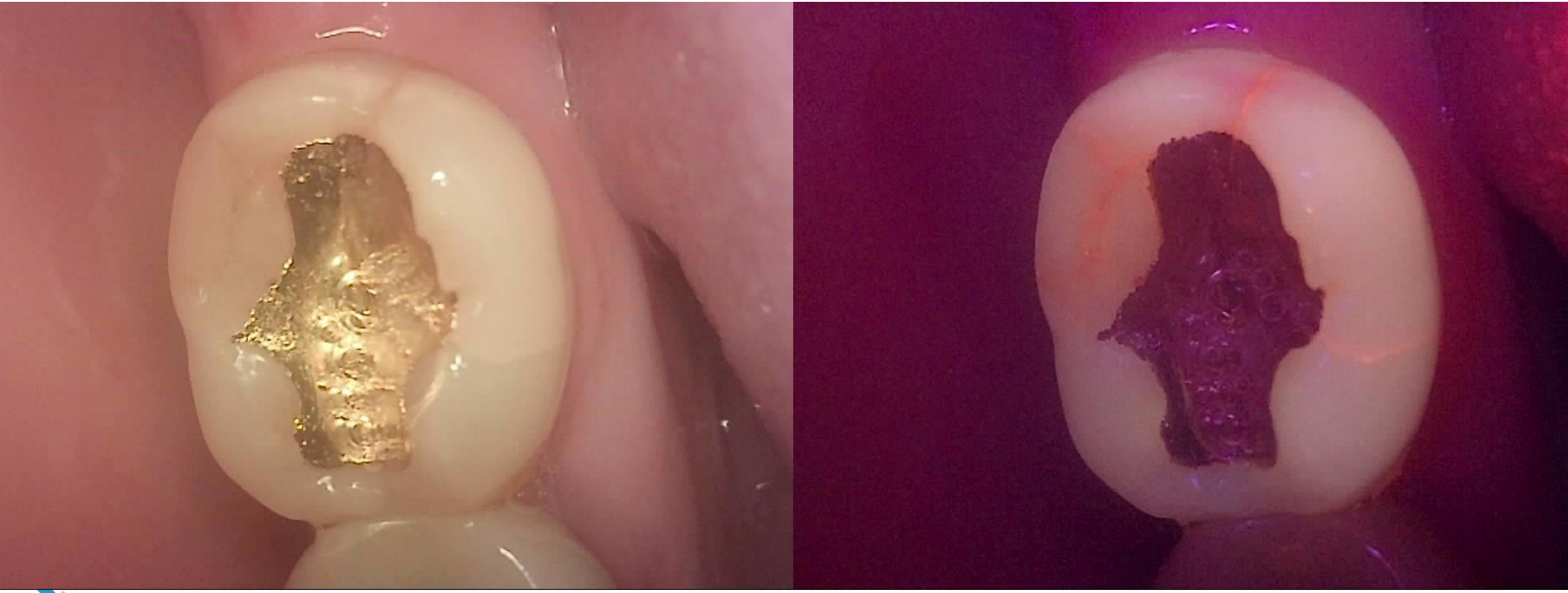

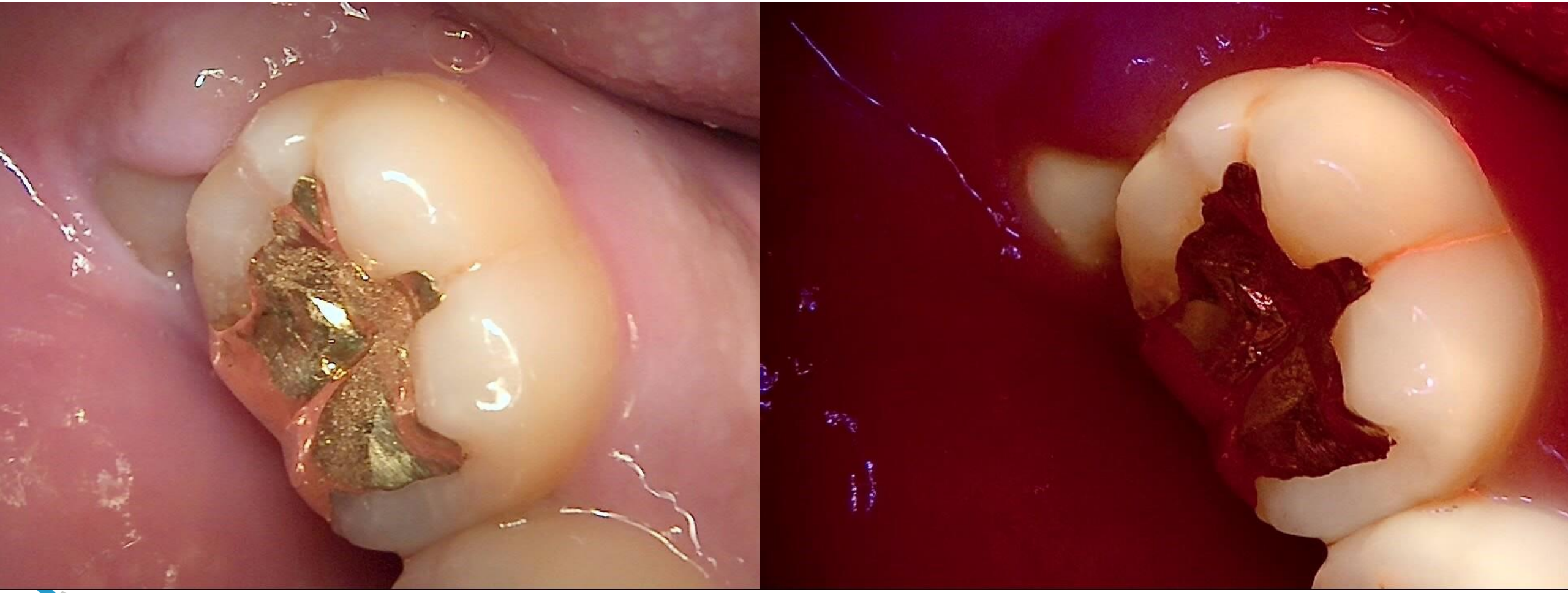

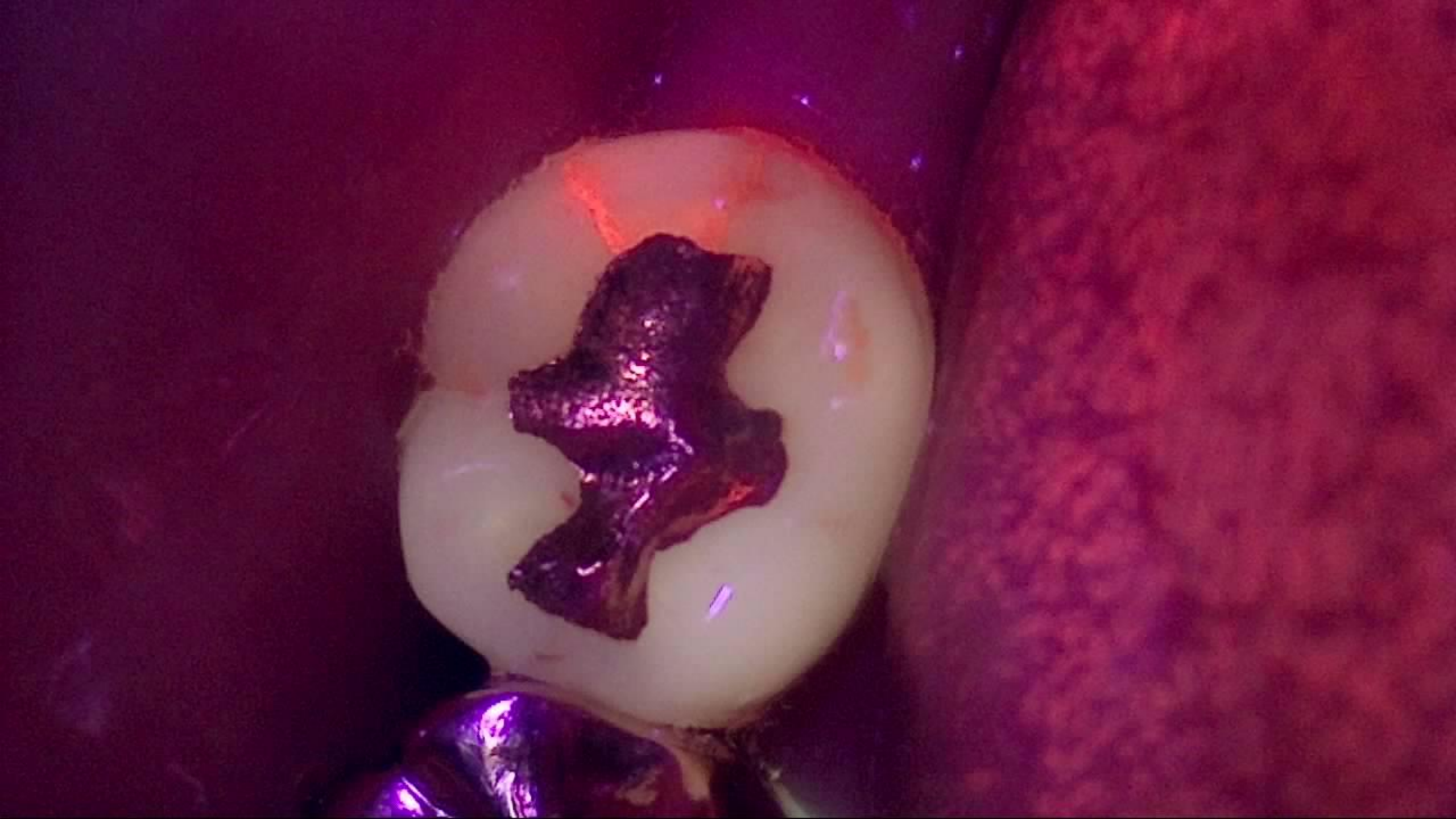

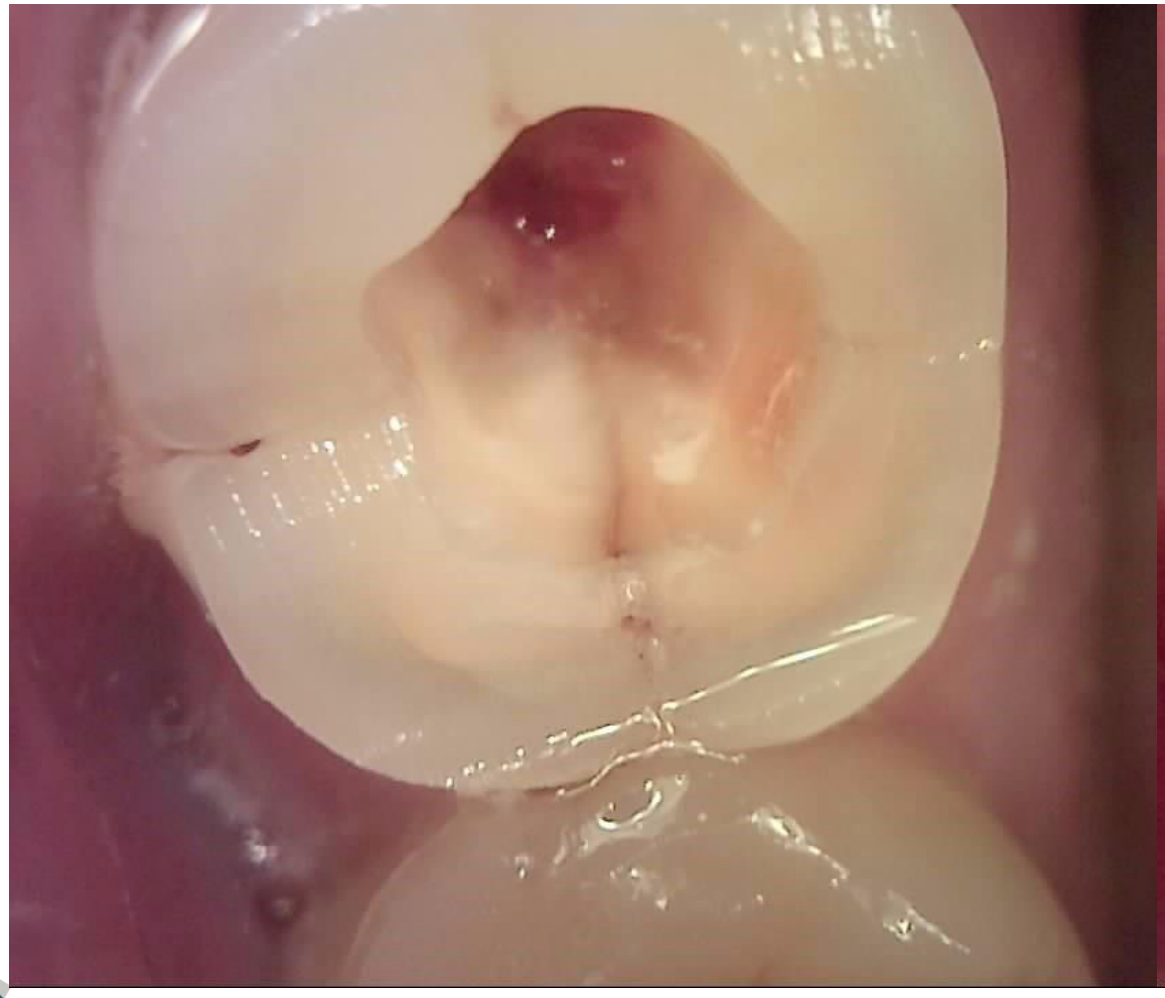

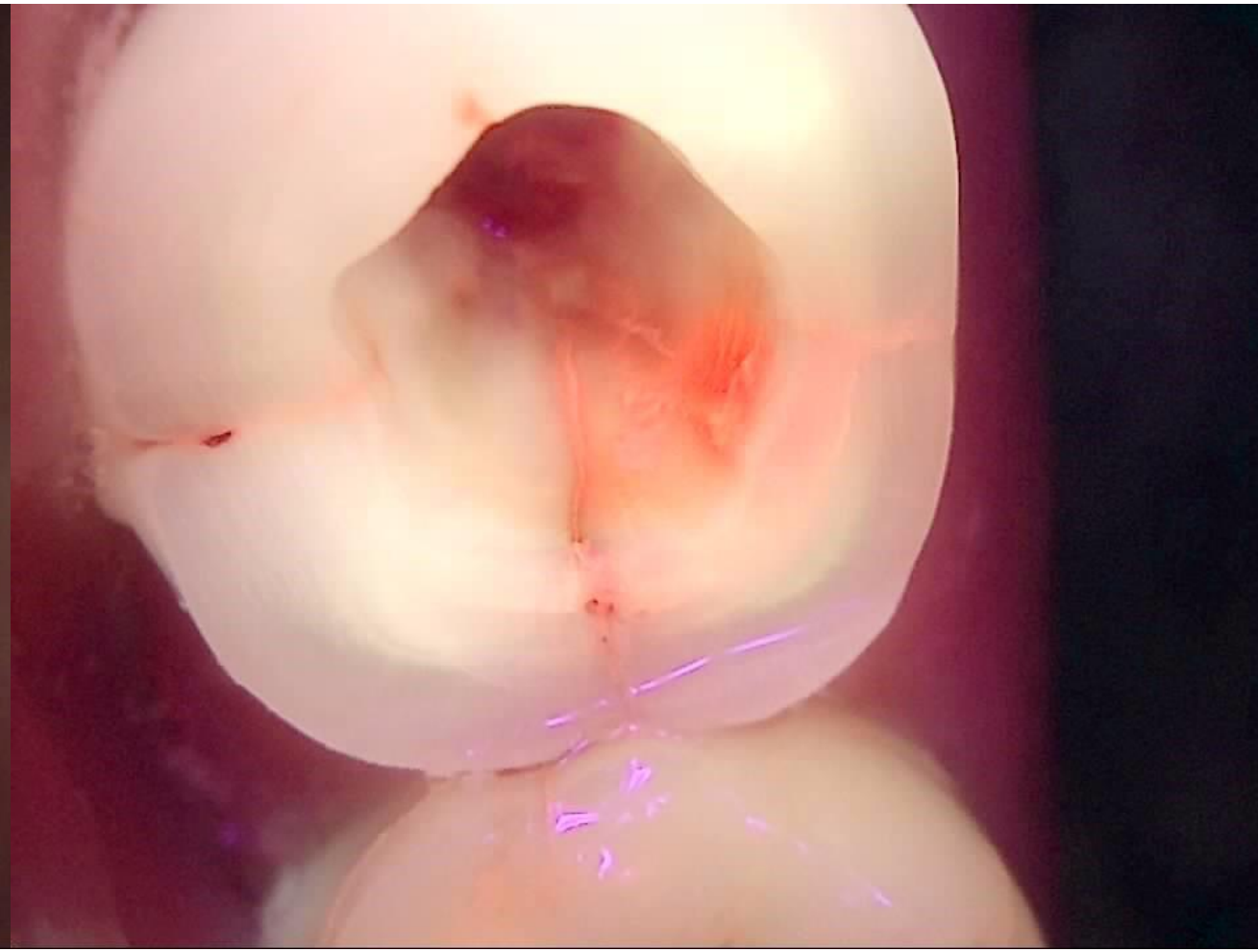

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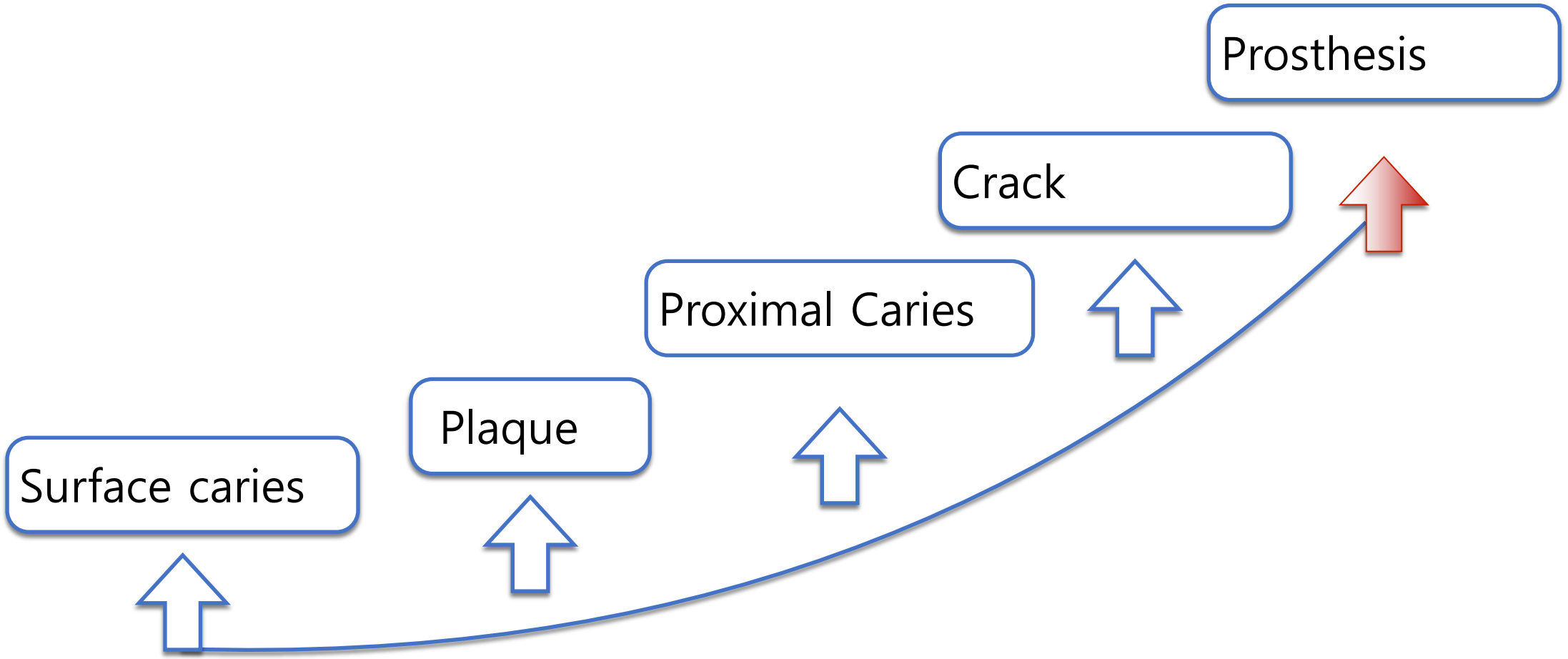

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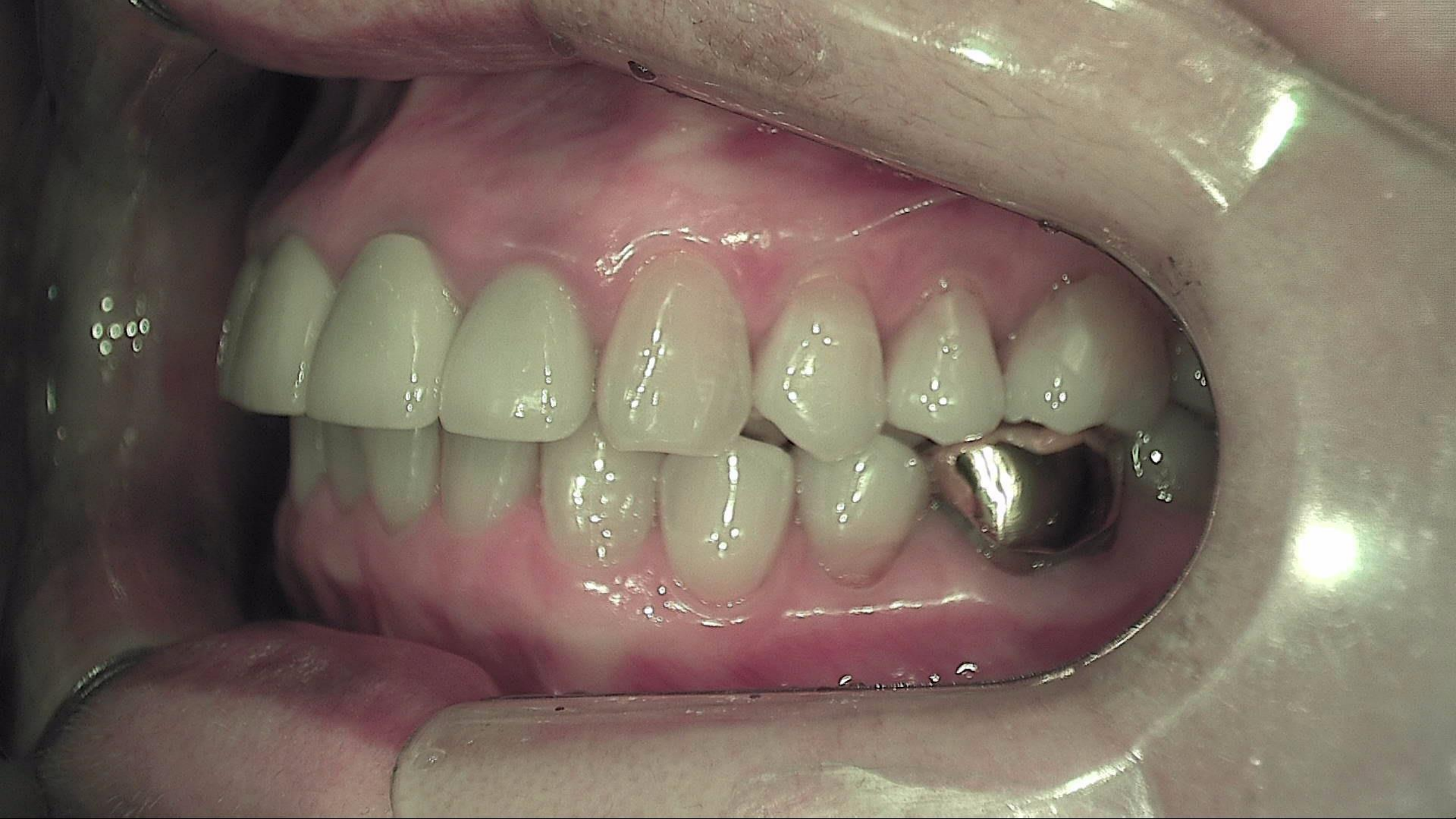
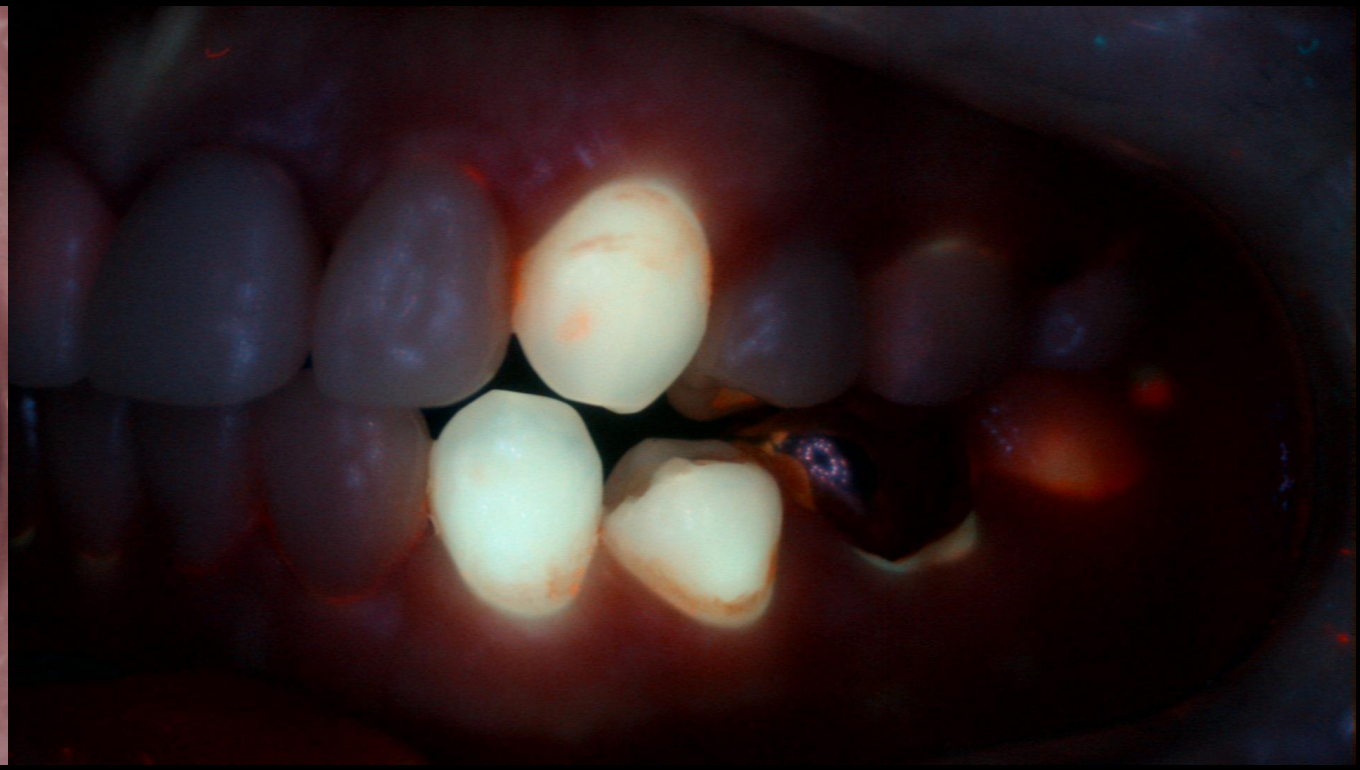


margin leakage

wn margin leakage



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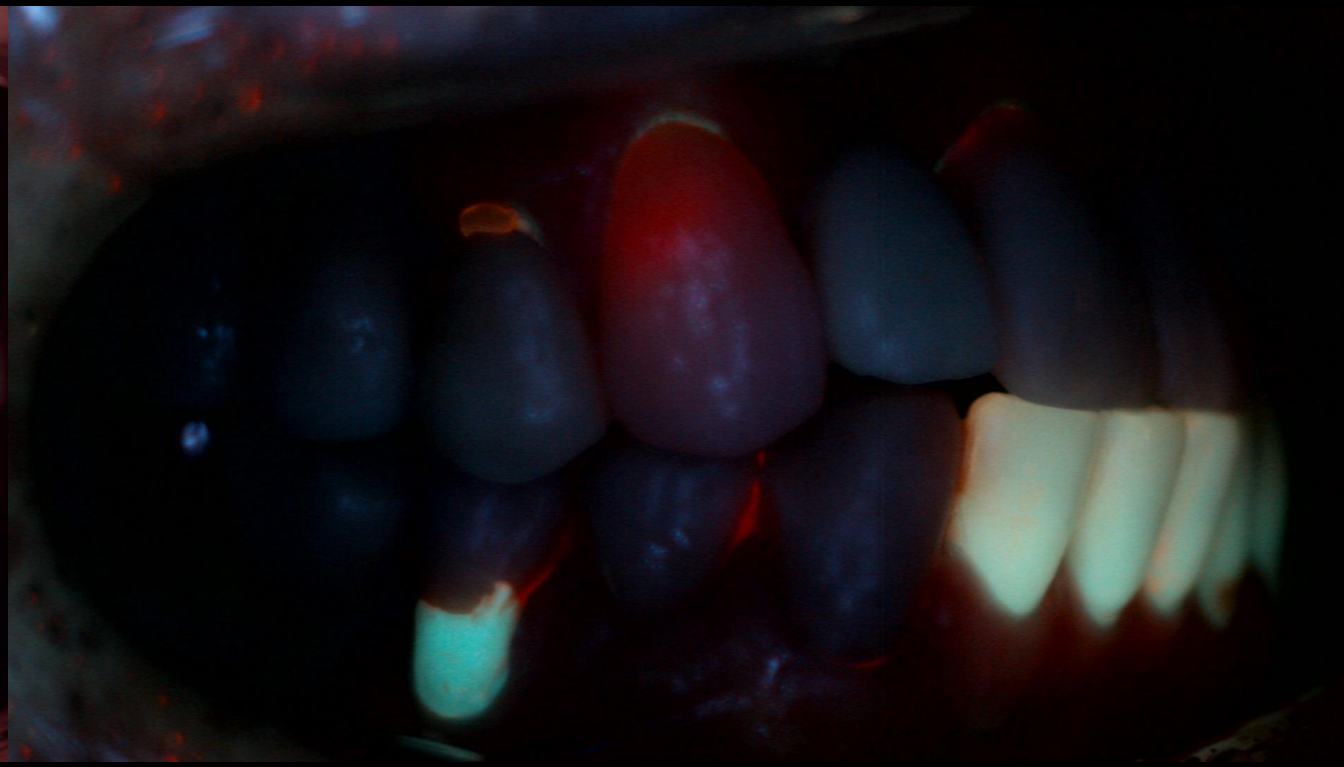
c crown margin leakage



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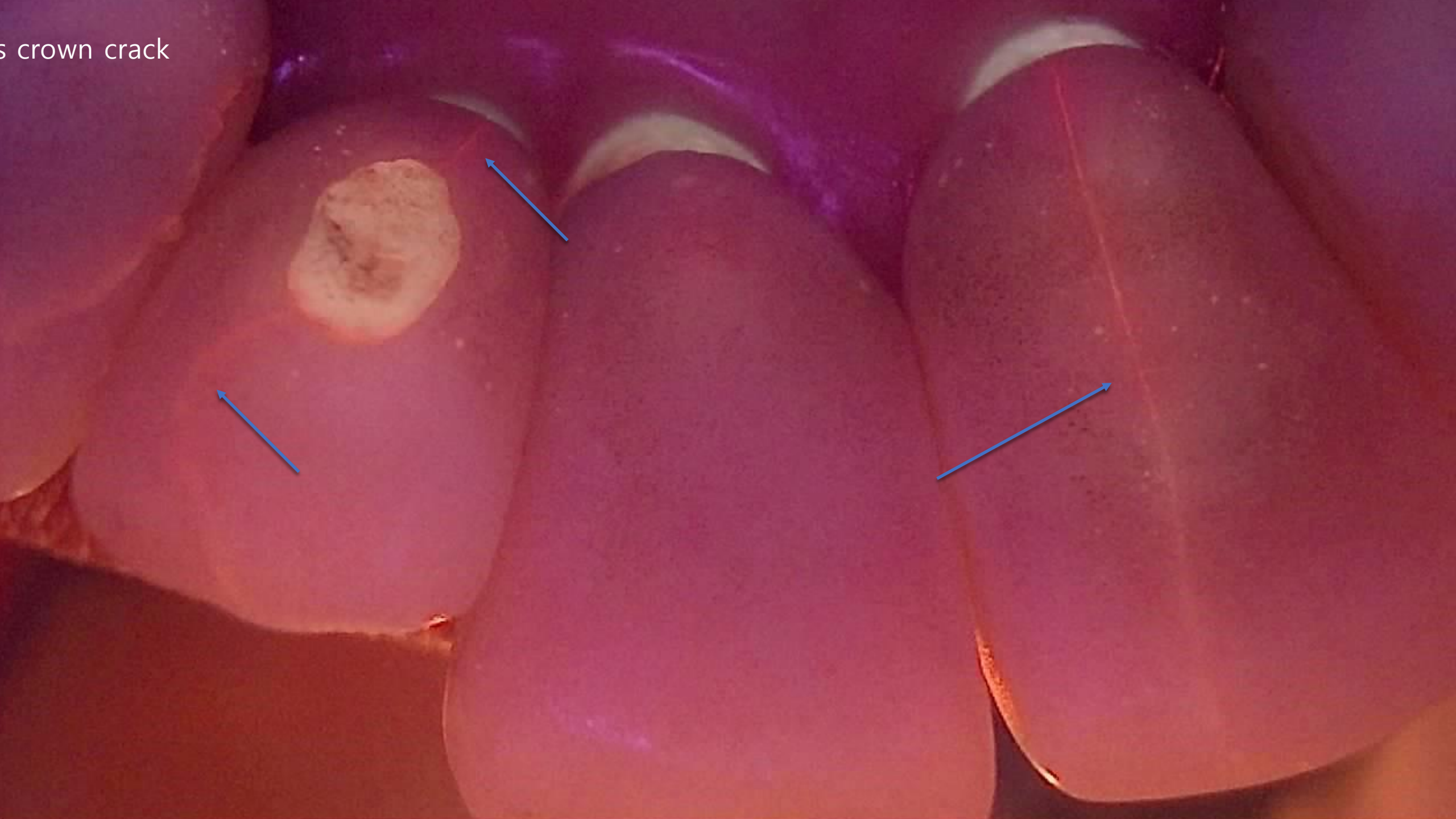
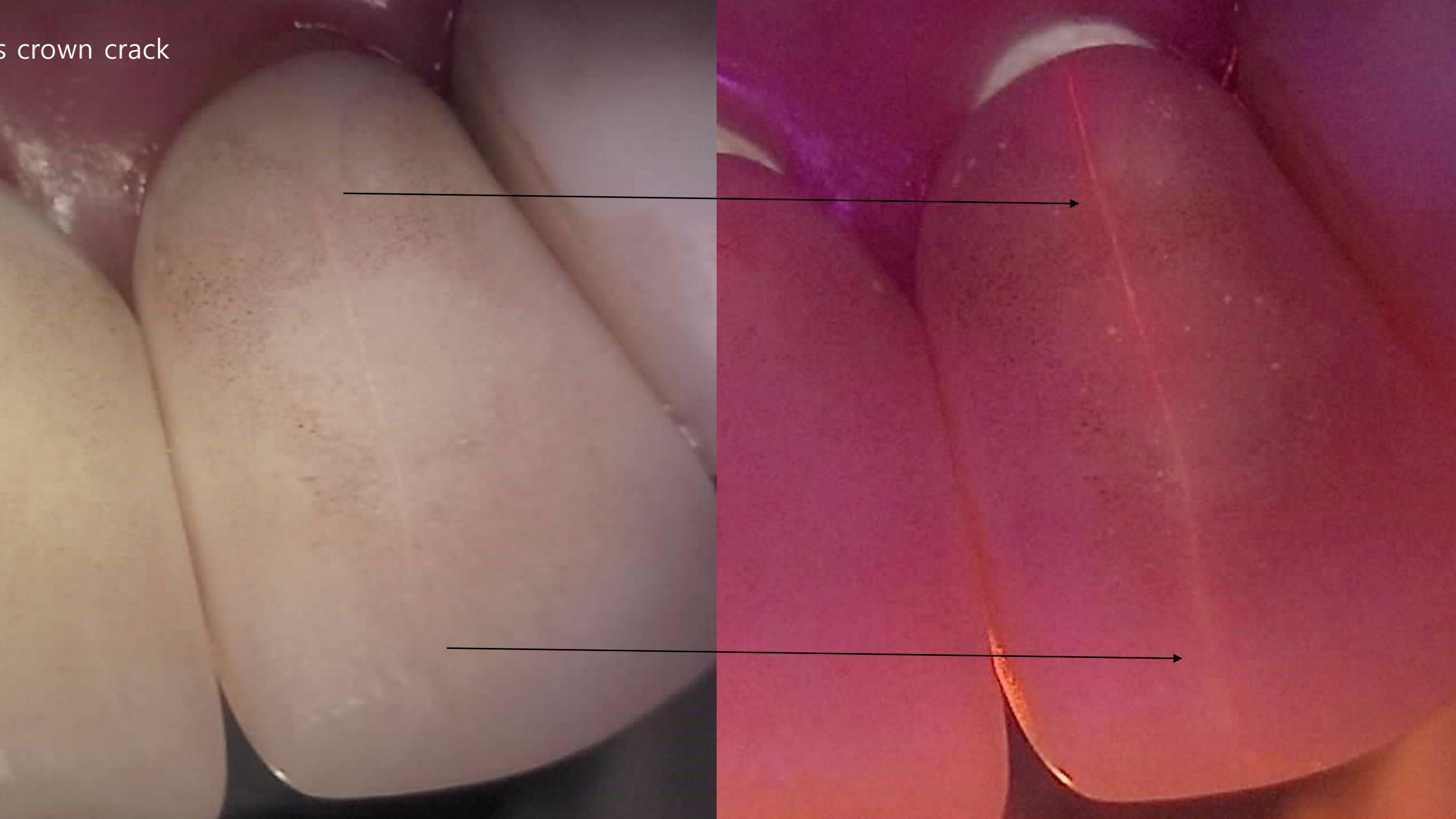
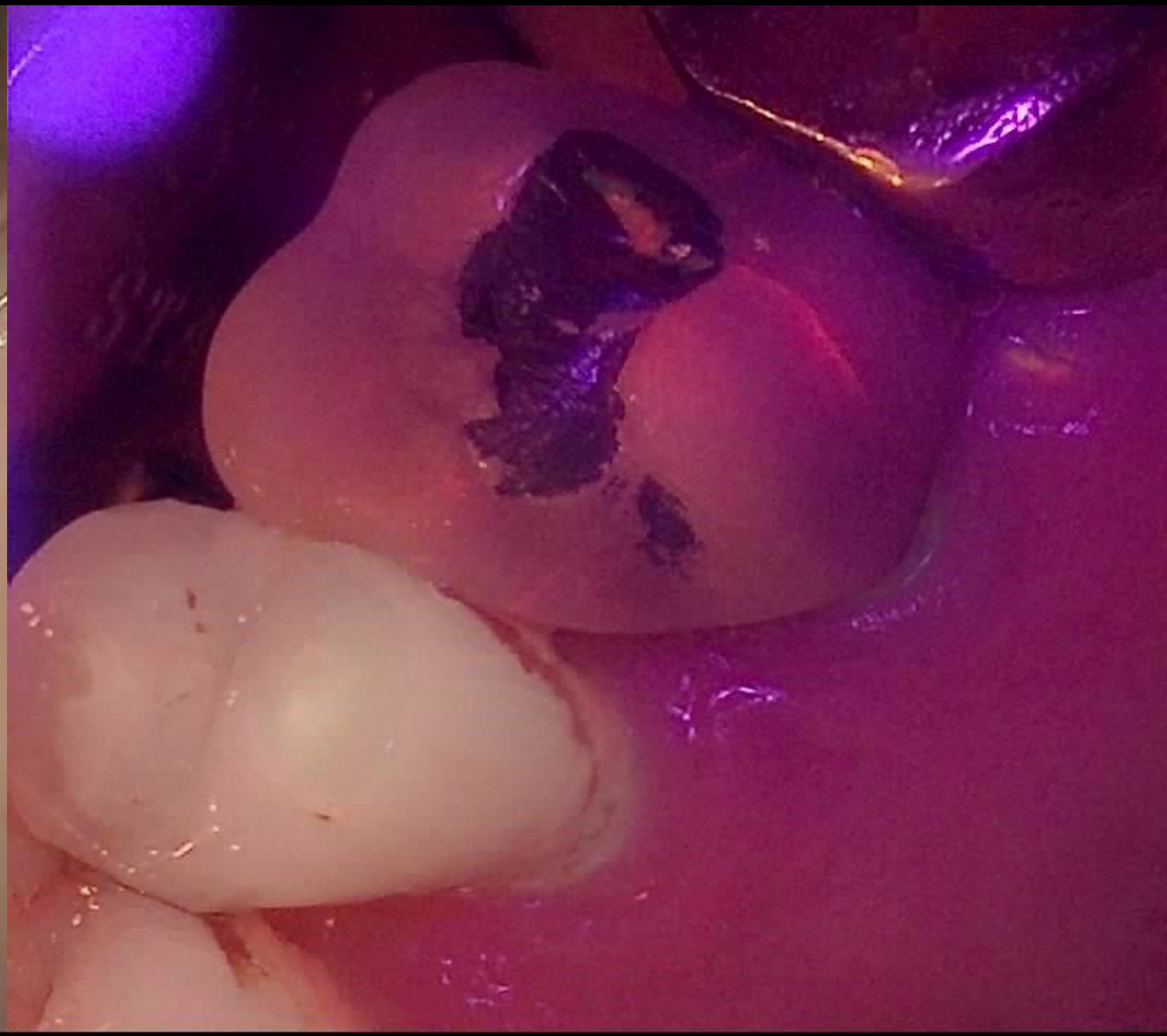
s crown crack




s crown crack

used metal crown

used metal crown



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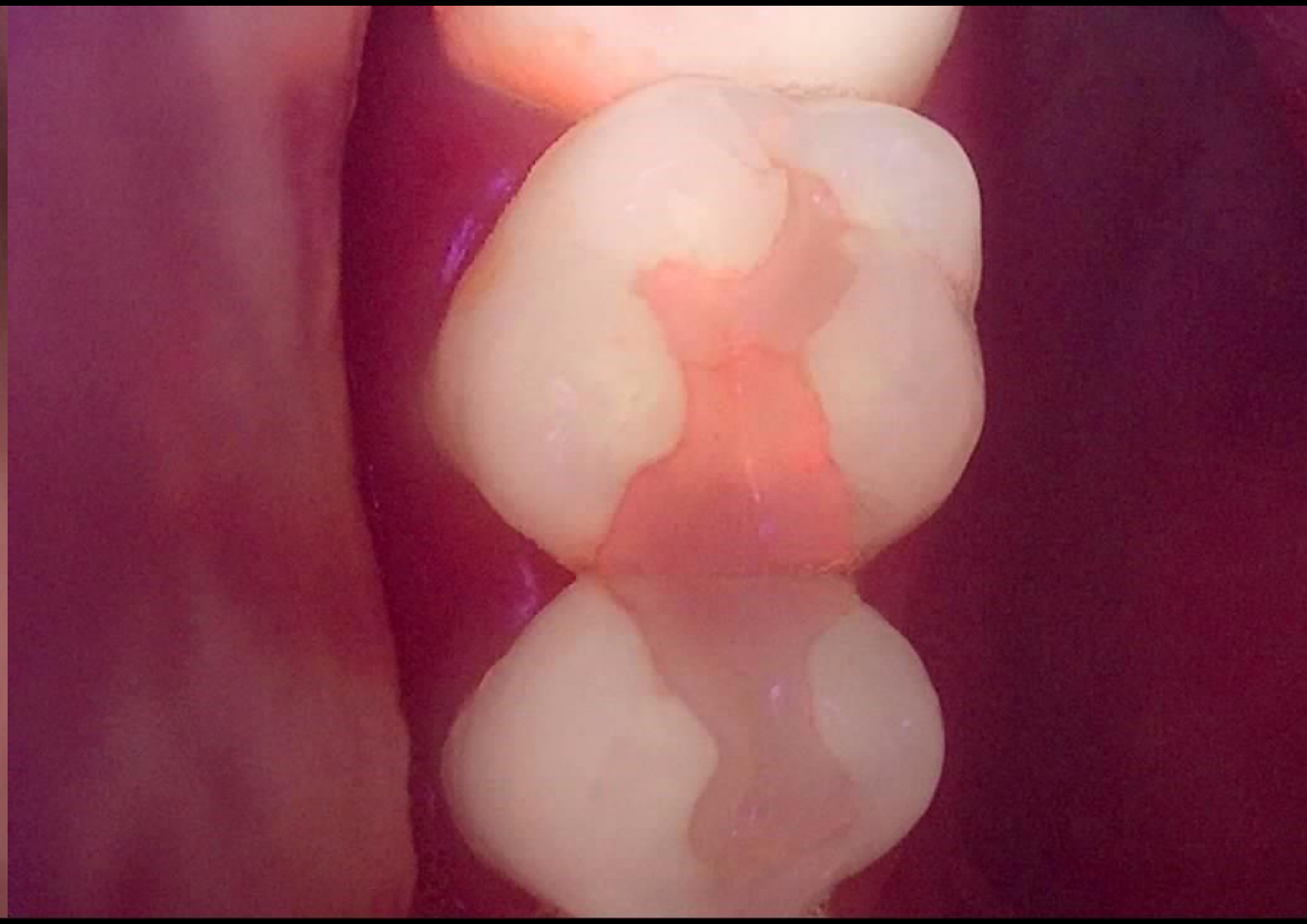
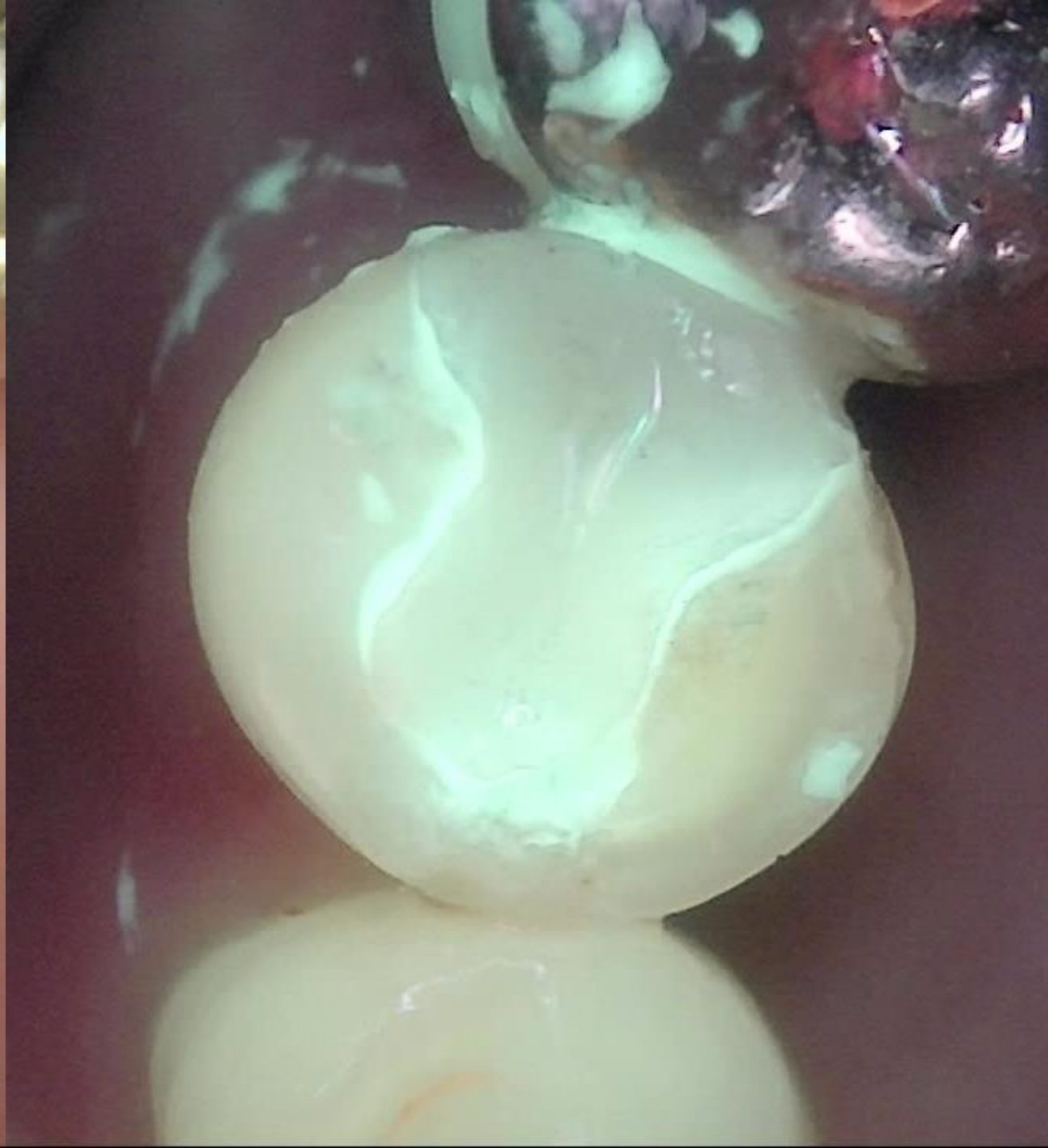
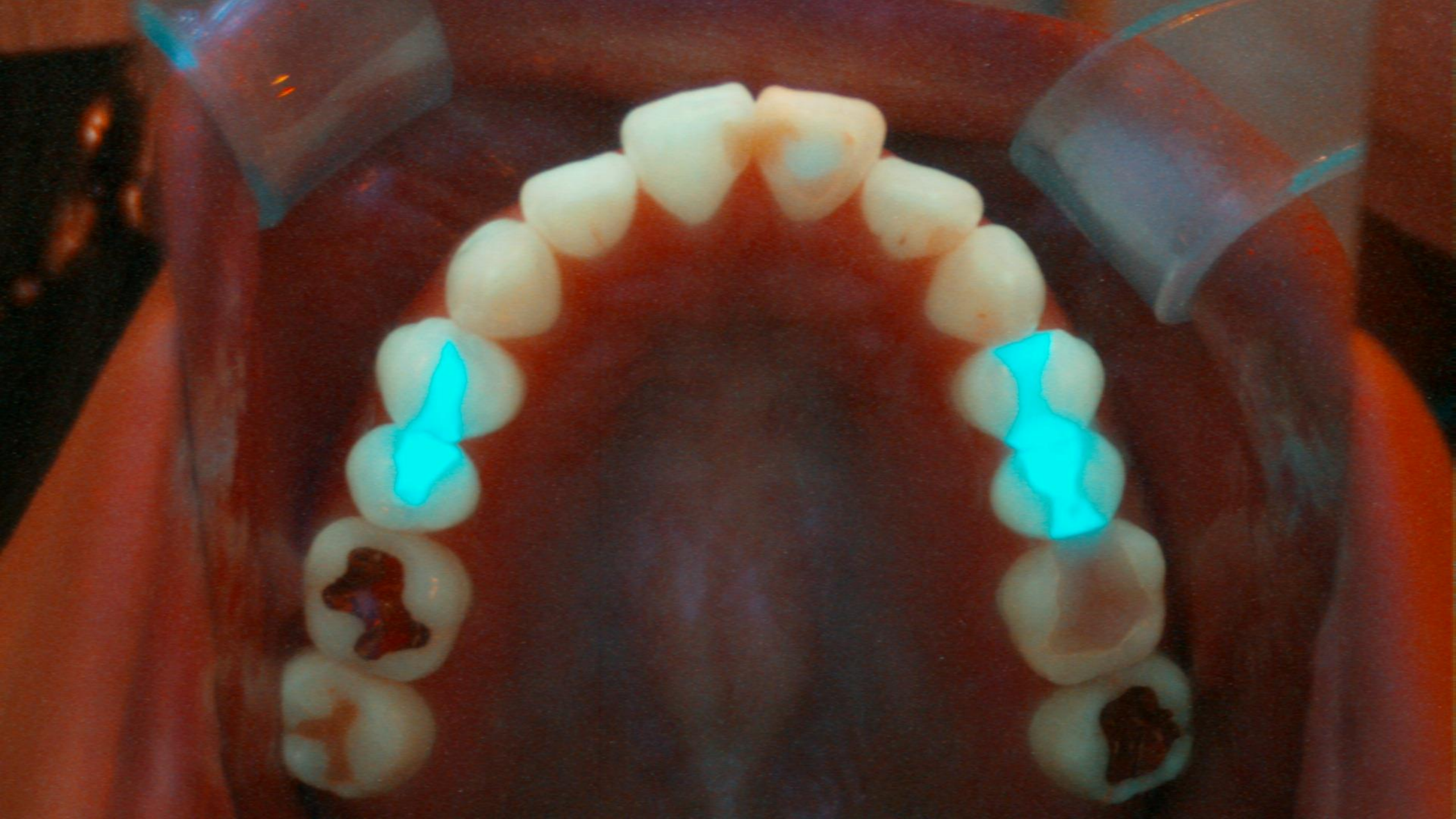
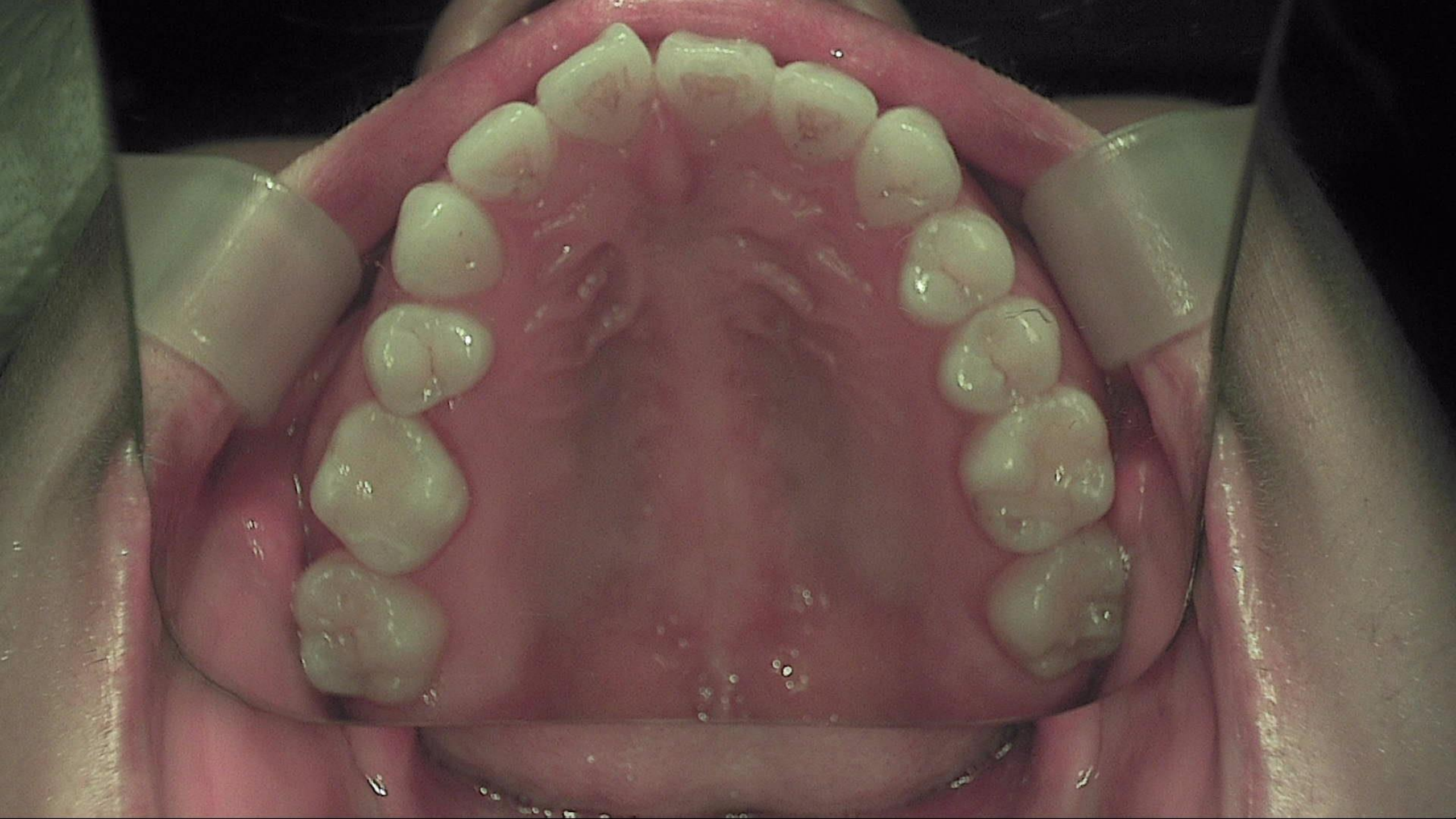
inlay fracture









ace caries

ace caries

Screening

Assessment

5
Steps
Dentistry

QLF™
technology

Guiding health assessment
with fluorescence solutions

Thanks to

Elbert de Josselin de Jong

Yonsei University College of Dentistry, Seoul, South Korea
Health Services Research and School of Dentistry, The University of Liverpool,Uk
AIOBIO, Seoul, South Korea
Inspektor Research Systems, Amsterdam, The Netherlands

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