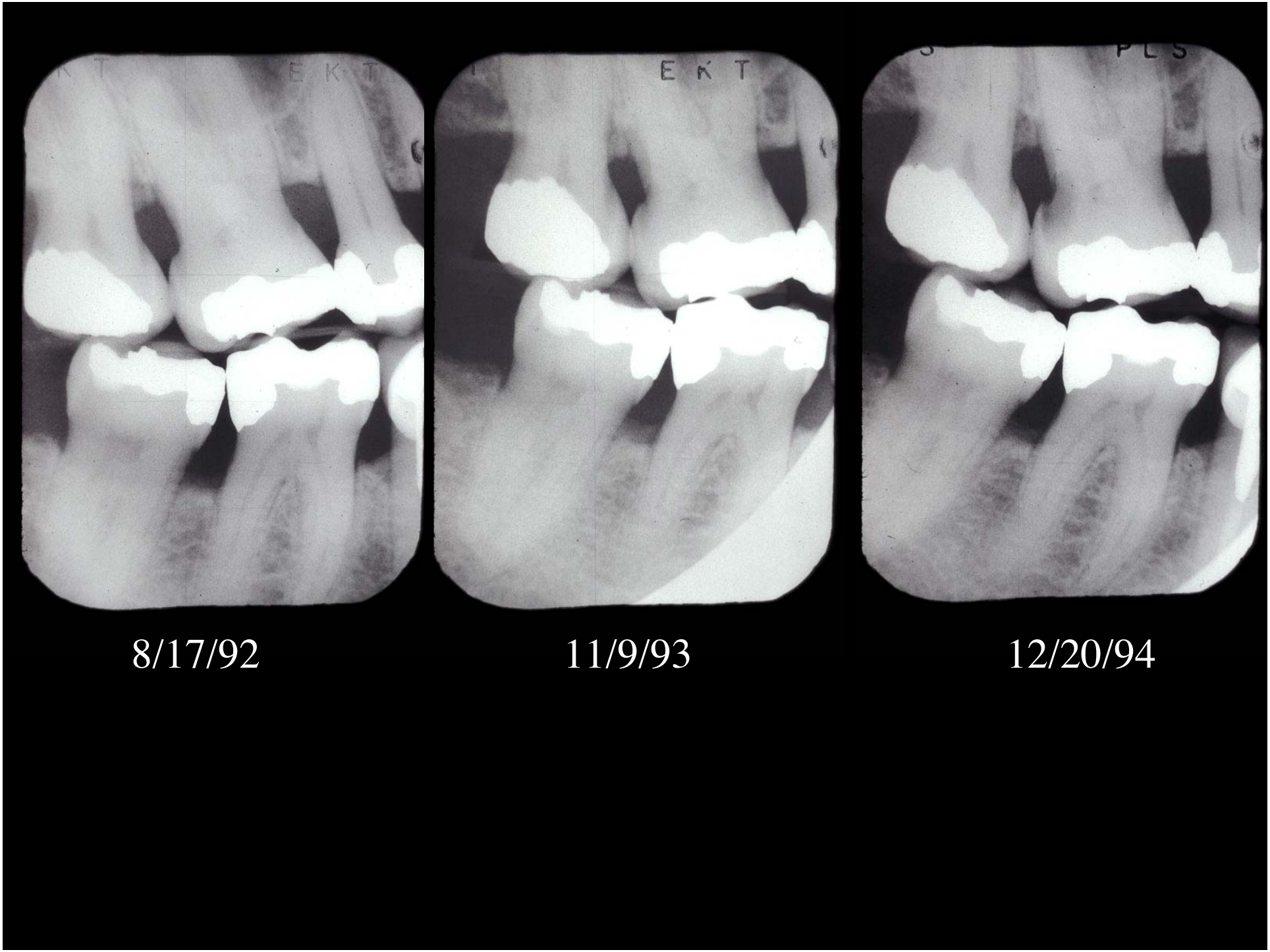

ROOT
SURFACE
RESTORATION

# ROOT CARIES PREVALENCE WILL INCREASE BECAUSE …

- PROPORTION OF ELDERLY INCREASING
- TEETH BEING RETAINED LATER IN LIFE
- GINGIVAL RECESSION INCREASES WITH AGE
- XEROSTOMIC MEDICATIONS ARE NUMEROUS



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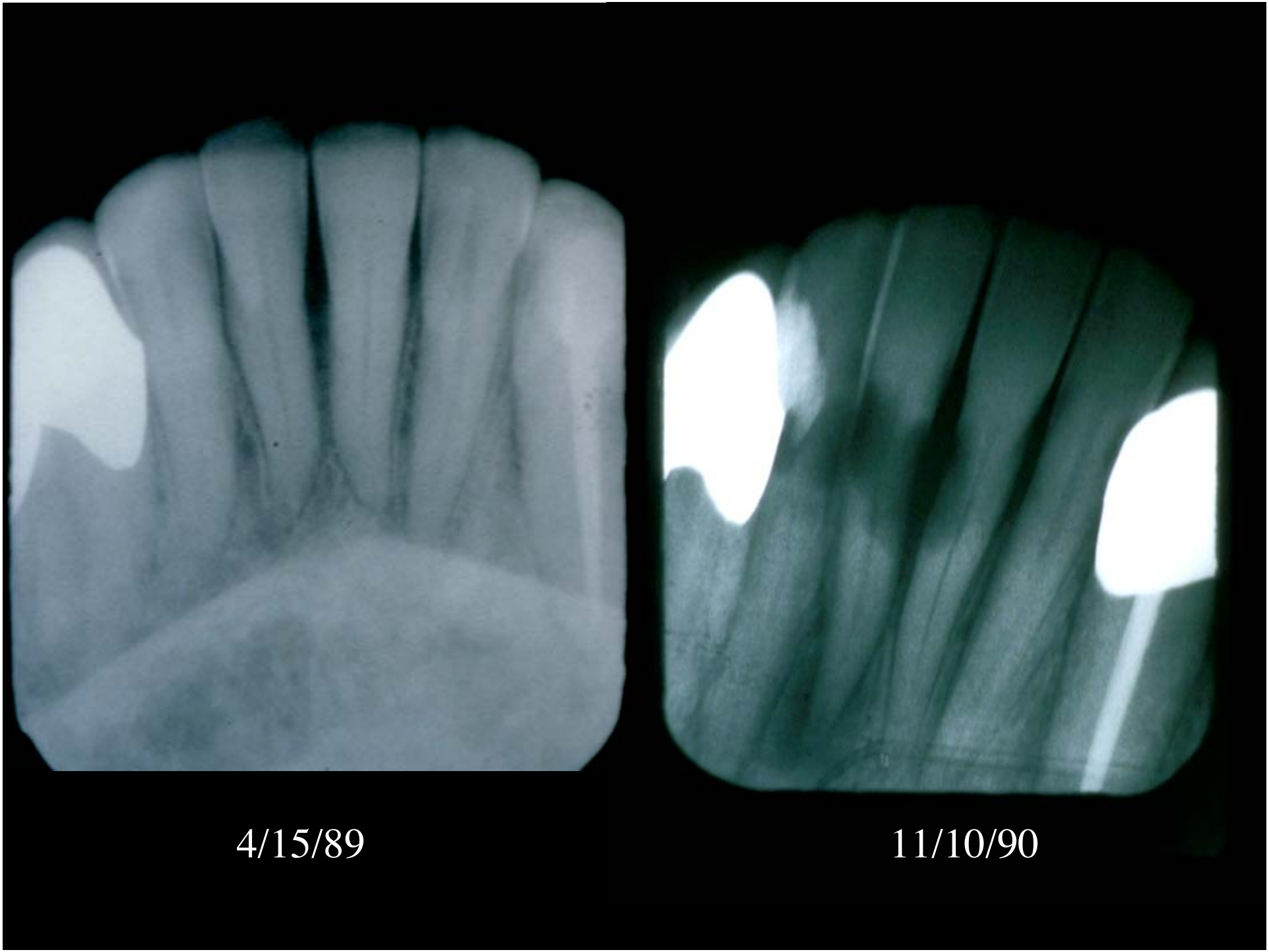
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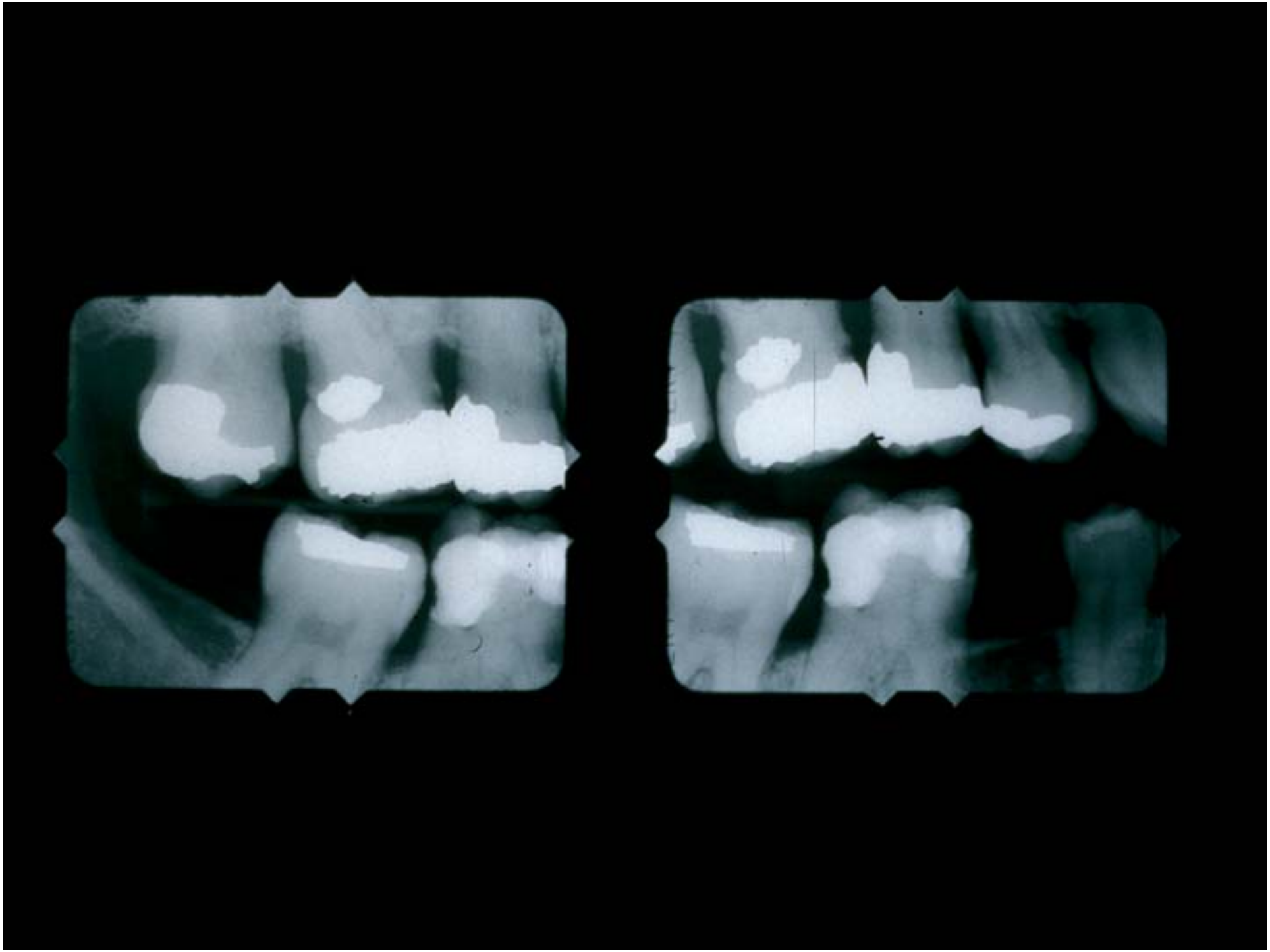
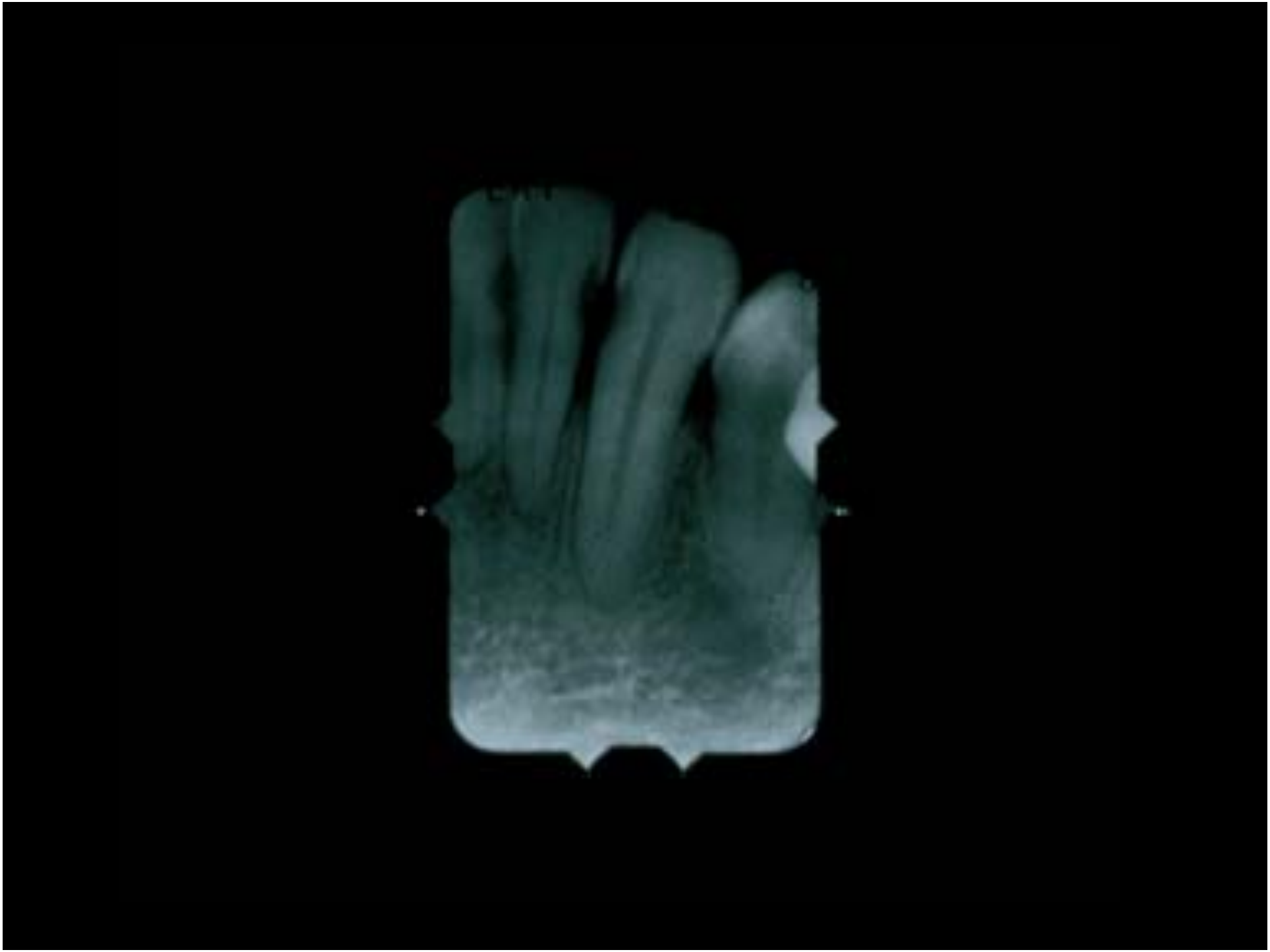
11/10/90

# CERVICAL BURNOUT

- RADIOGRAPHIC ARTIFACT PRODUCED BY A LOCALIZED RELATIVE RADIOLUCENCY
- BOUNDED BY CEJ, CREST OF ALVEOLAR BONE, LIP LINE, OR CALCULUS





# ROOT CARIES
## VS.
# CERVICAL BURNOUT

- ACQUIRE RADIOGRAPHS WITH GOOD CONTRAST
- ASSESS IF BOUNDARIES OF RADIOLUCENCY CORRESPONDS TO ANY ANATOMICAL FEATURES
- INSPECT TEETH CLINICALLY TO BACK UP RADIOGRAPHIC INTERPRETATION

# Root Caries
# Diagnostic Criteria

- Soft, Leathery, Tacky Area
- at CEJ or on Root Surface
- Discolored (Varying Degrees)
- Undermines Adjacent Enamel
- Usually Asymptomatic

# Differential Diagnosis

- Active Root Caries Lesion
- Inactive Root Caries Lesion
- Exposed Resorptive Defect
- Root Surface Erosion
- Root Surface Abrasion
- Normal Anatomic Features

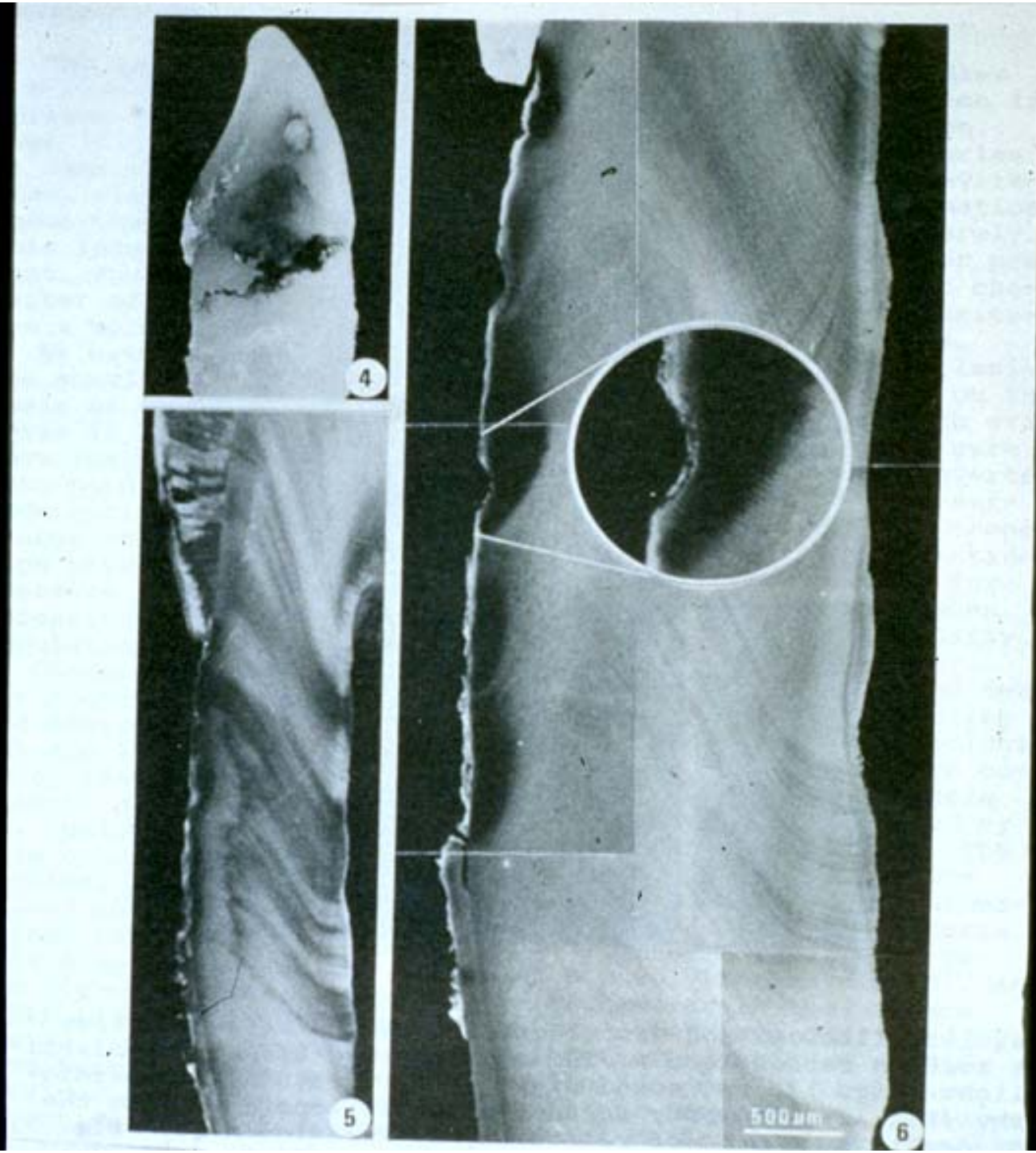
# ROOT CARIES

## ACTIVE

- YELLOW TO BROWN
- SURFACE DEFECT POSSIBLE
- TACKY, LEATHERY


## INACTIVE

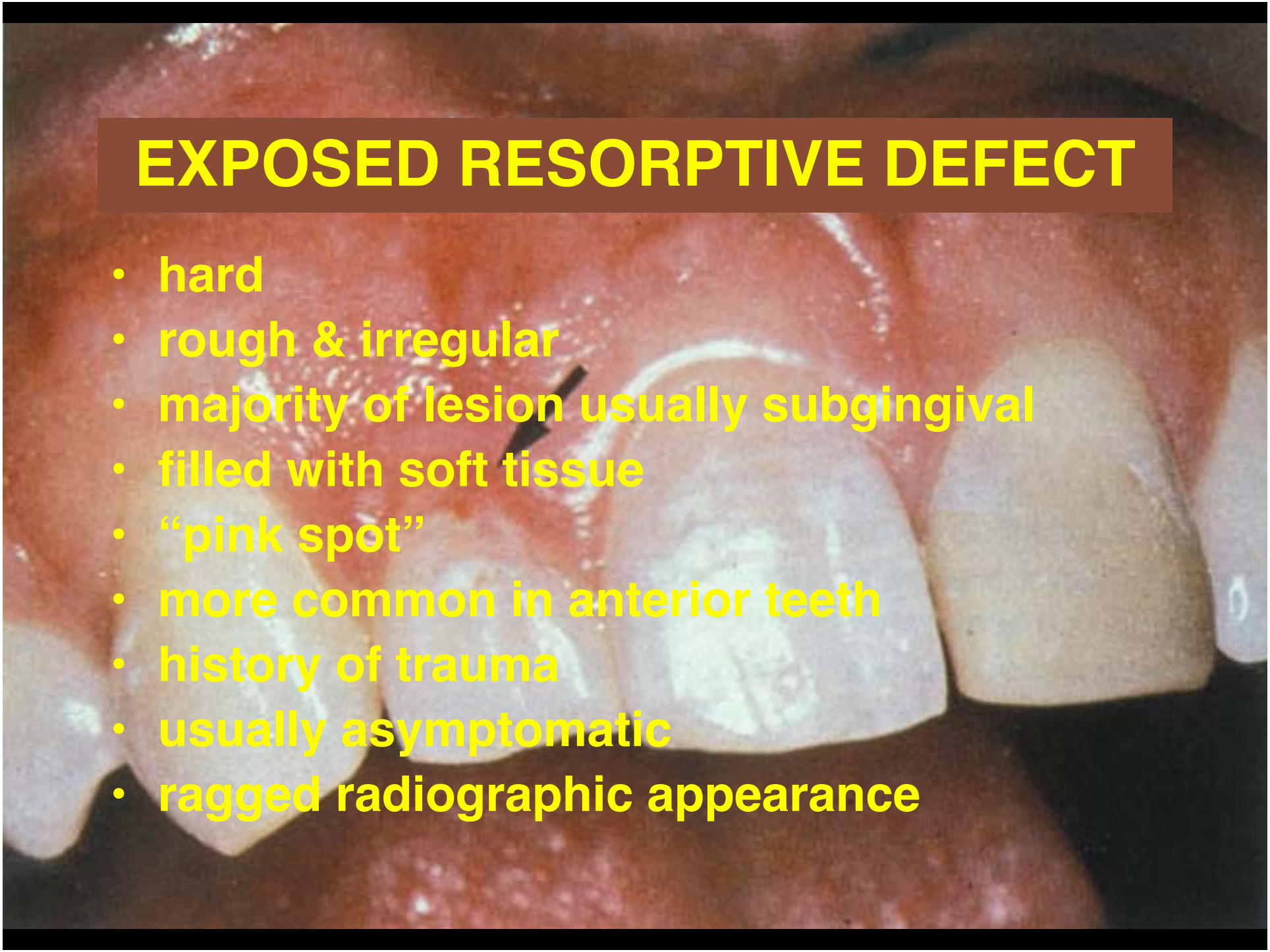
- DARK BROWN TO BLACK
- SURFACE DEFECT POSSIBLE
- HARD, GLASSY


4
5
500 μm
6


17


18


19



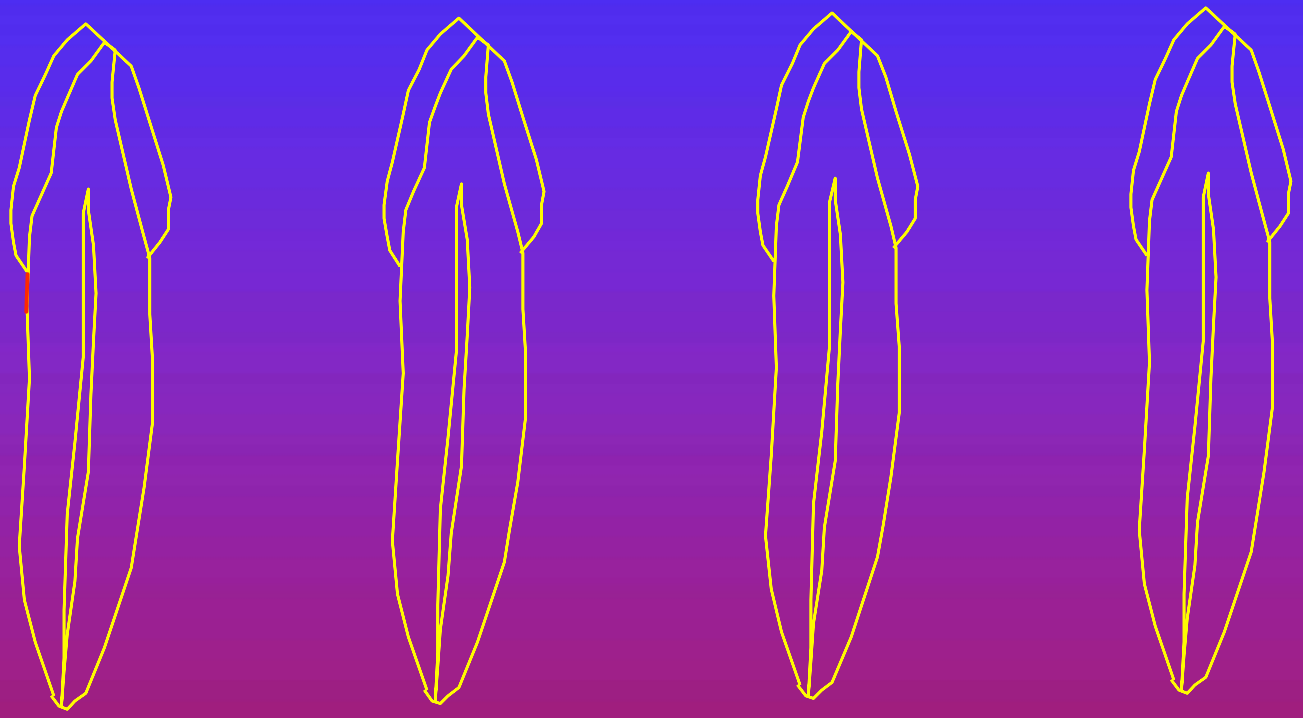
# EXPOSED RESORPTIVE DEFECT

- hard
- rough & irregular
- majority of lesion usually subgingival
- filled with soft tissue
- “pink spot”
- more common in anterior teeth
- history of trauma
- usually asymptomatic
- ragged radiographic appearance

# NORMAL ANATOMIC FEATURES THAT MAY MIMIC ROOT CARIES

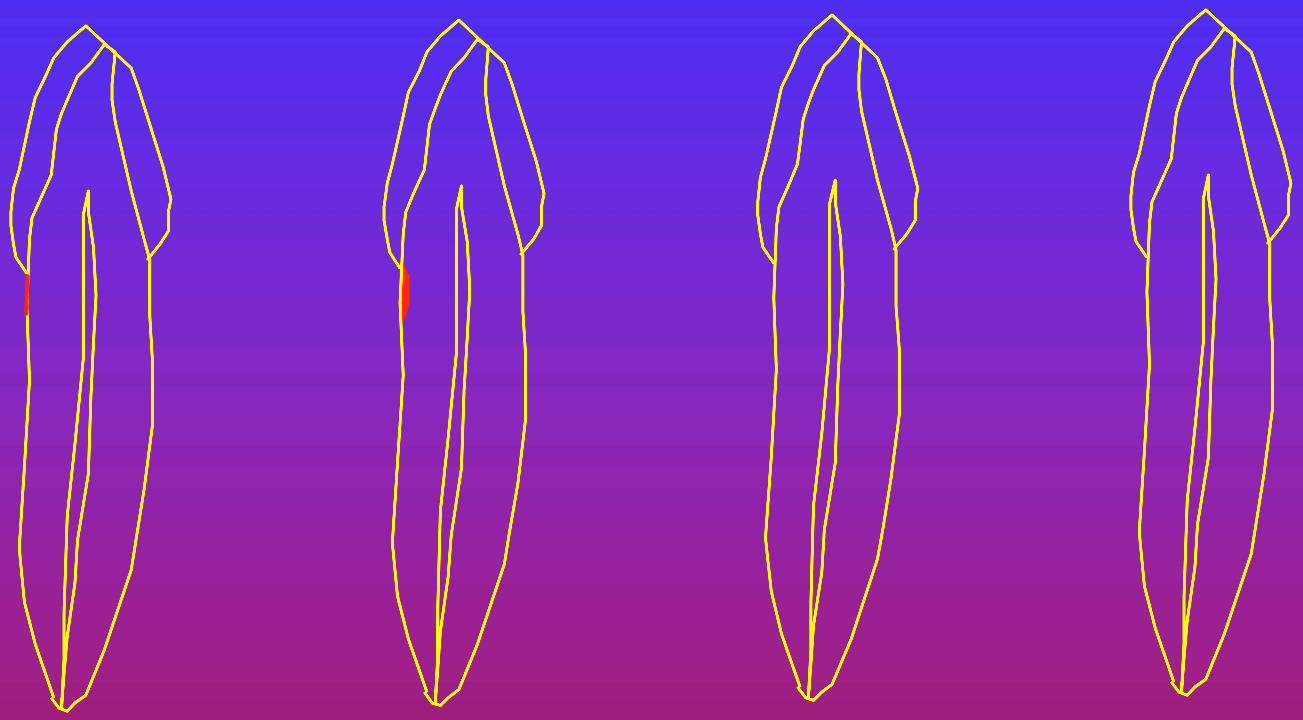
- ROOT CONCAVITIES AND FURROWS
- FURCATIONS
- INVAGINATED GROOVES

# Root Caries Severity Index of Billings



Grade 1
INCIPIENT
no surface defect

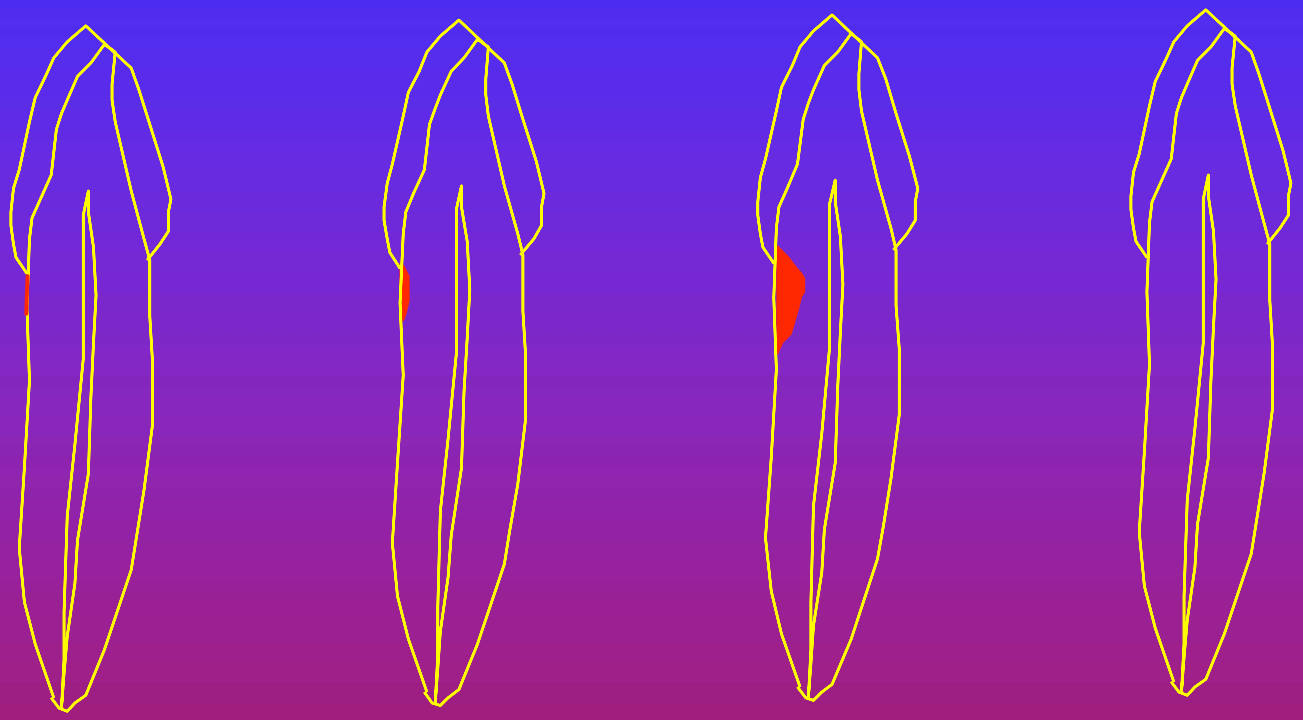
# Root Caries Severity Index of Billings



Grade 1
INCIPIENT

Grade 2
SHALLOW
surface defect <0.5mm

# Root Caries Severity Index of Billings

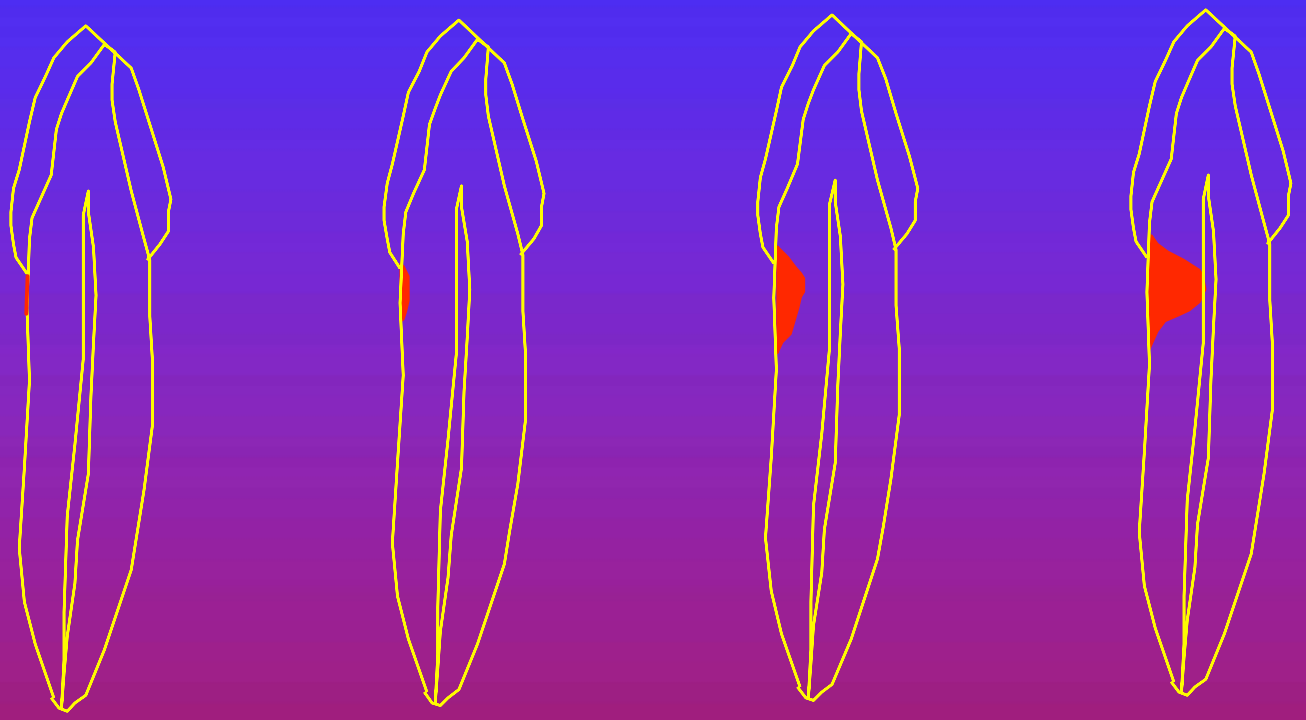


Grade 1
INCIPIENT

Grade 2
SHALLOW

Grade 3
CAVITATED
surface defect >0.5mm

# Root Caries Severity Index of Billings



Grade 1
INCIPIENT

Grade 2
SHALLOW

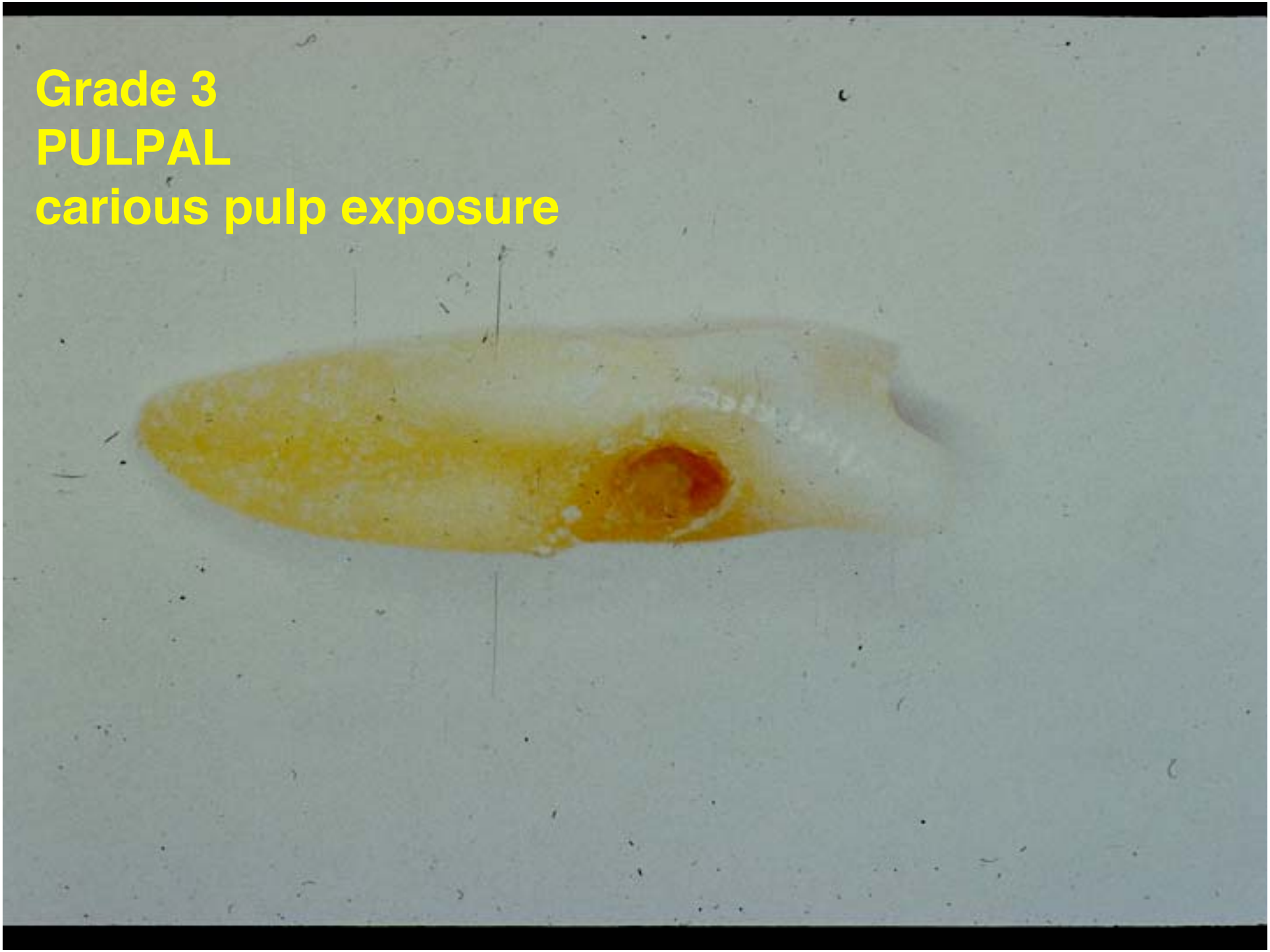
Grade 3
CAVITATED

Grade 3
PULPAL
carious pulp exposure


Grade 1
INCIPIENT
no surface defect


Grade 2
SHALLOW
surface defect <0.5mm


Grade 3
CAVITATED
surface defect >0.5mm


Grade 3
PULPAL
carious pulp exposure

CONTROL STRATEGIES

# Remineralization Therapy

- High-Intensity Fluoride Treatment
- Xylitol Chewing Gum
- Chlorhexidine
- Remineralization Rinse

# Remineralization Therapy

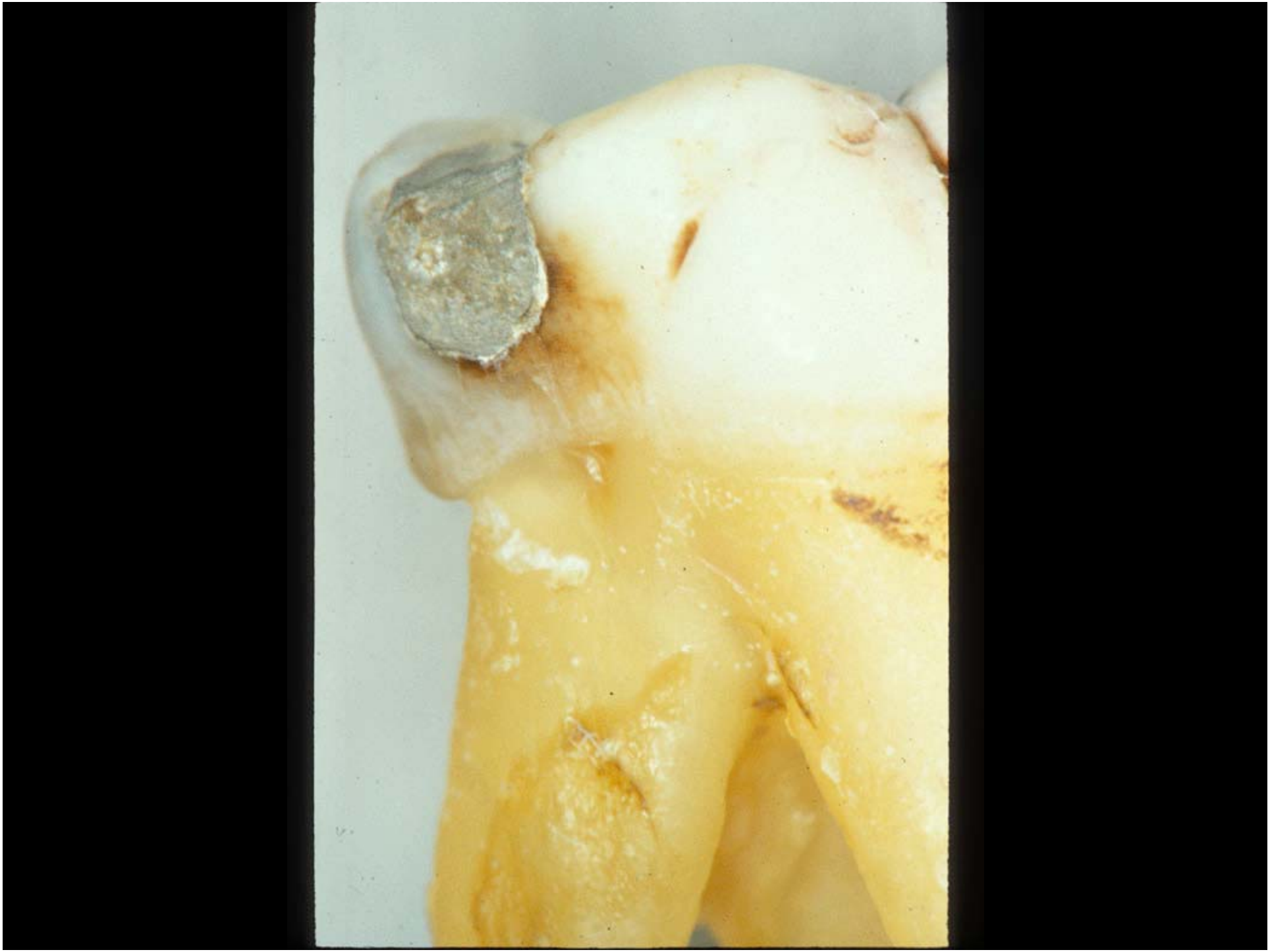
**Objective:** **to convert active lesion into inactive lesion and avoid invasive procedures**

**Indications:** **bitewing enamel "notch," superficial *white spot*, Grade 1 root surface lesion**

# RECONTOURING

- OBJECTIVE: TO REMOVE SOFT, CARIOUS DENTIN & PROVIDE A SMOOTH, NON-RETENTIVE ROOT SURFACE CAPABLE OF RESISTING FURTHER CARIOUS ATTACK

- INDICATIONS: GRADE 2 (SHALLOW) LESIONS



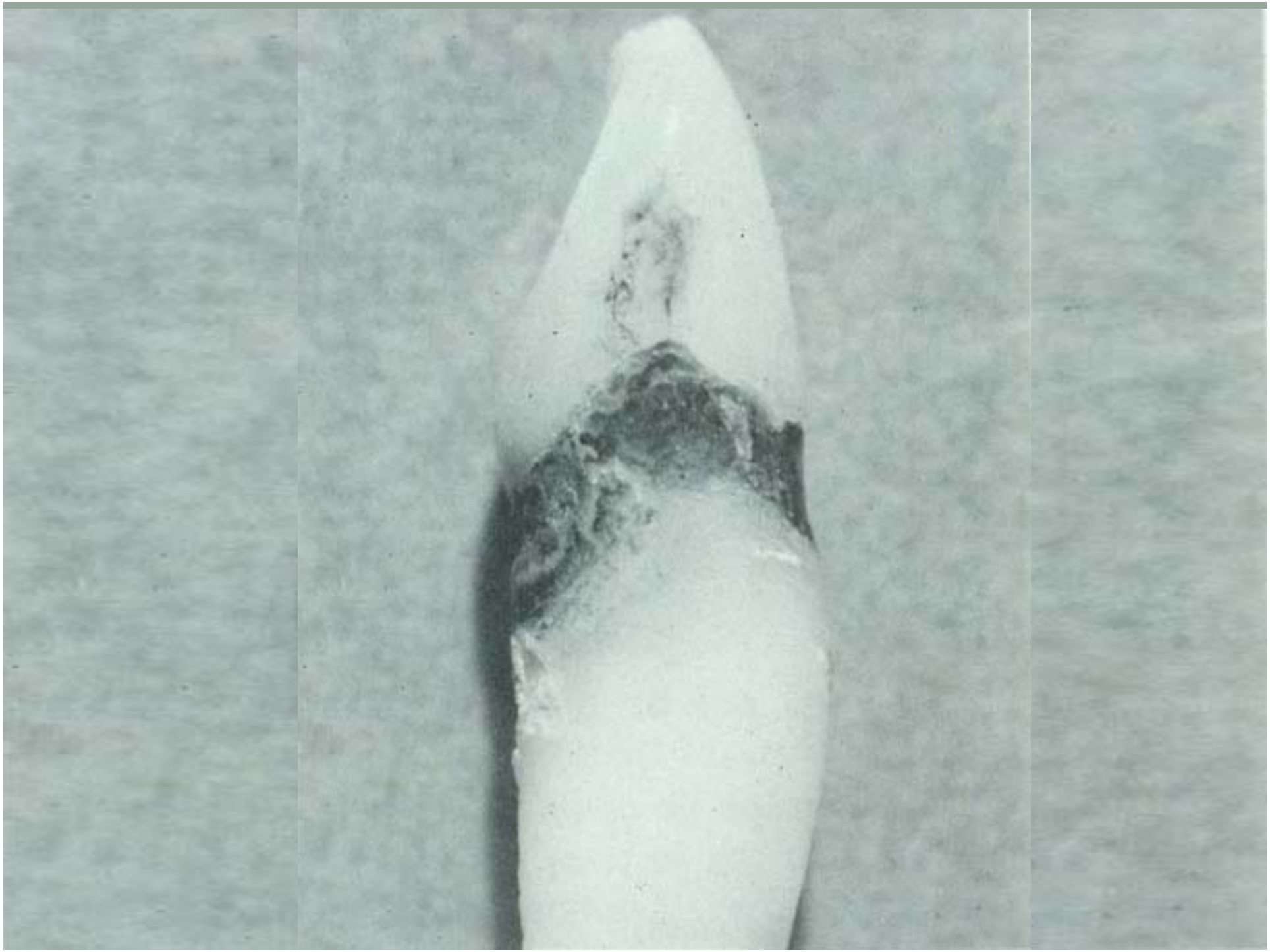
# ROOT CARIES RESTORATIVE TREATMENT

**OBJECTIVE:** TO RESTORE LOST ROOT STRUCTURE, PROTECT THE PULP, & IMPEDE FURTHER CARIOUS ATTACK

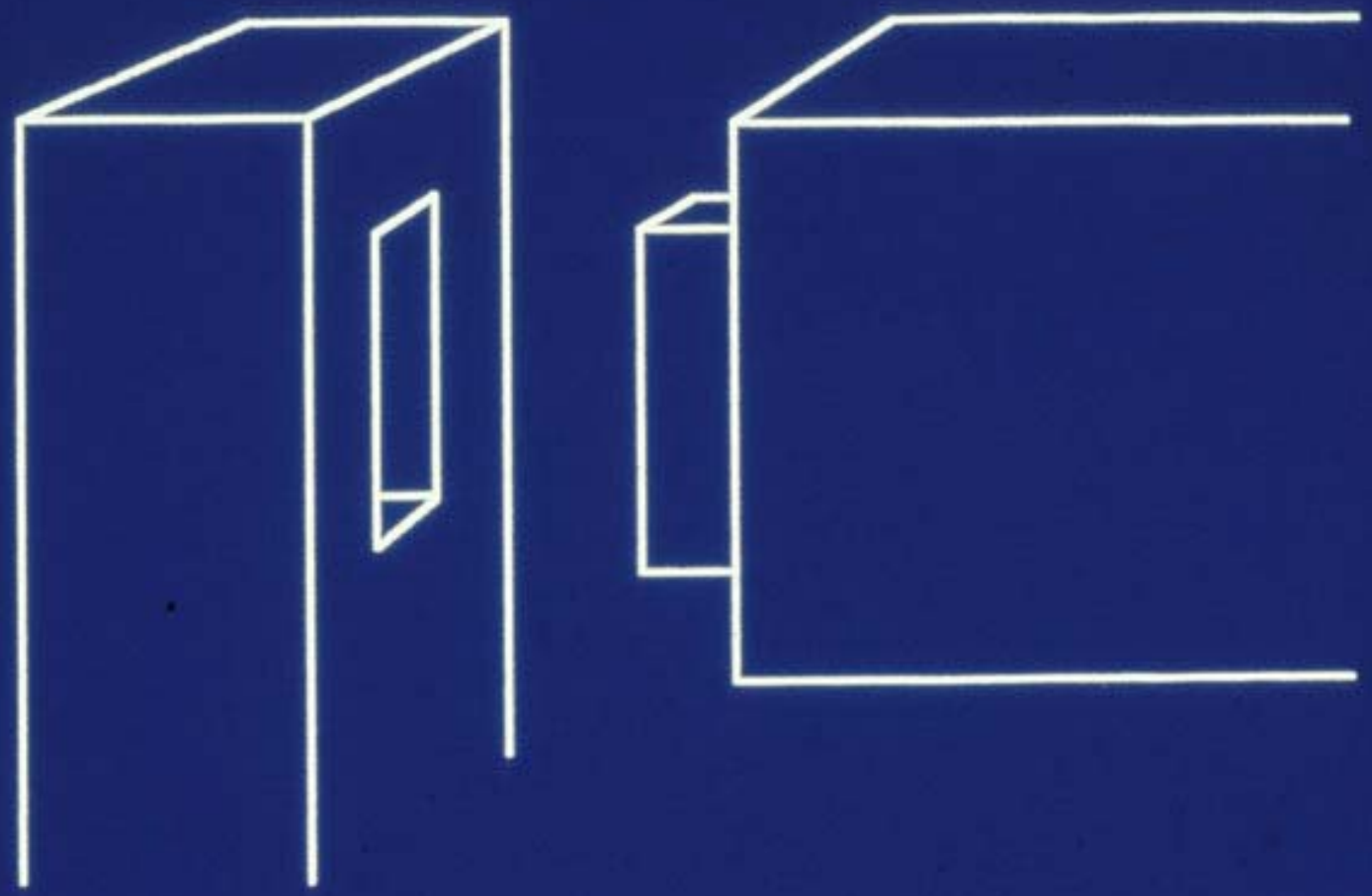
**INDICATIONS:** GRADE 3 (CAVITATED) LESIONS & UNESTHETIC SHALLOW LESIONS

# ROOT CARIES
# RESTORATIVE DIFFICULTIES

- PERIODONTAL CONCERNS
- ISOLATION
- PULPAL CONCERNS
- RETENTION
- WEAKENING OF TOOTH
- LATERAL EXTENSION
- ACCESS
- VISIBILITY
- ANATOMY
- RECURRENT CARIES
- POST OPERATIVE SENSITIVITY



# MORTISE & TENON JOINT



# AMALGAM

## ADVANTAGES

- LOW LONG-TERM MICROLEAKAGE RATES
- MOST TOLERANT OF MOISTURE CONTAMINATION

## DISADVANTAGES

- REQUIRES MECHANICAL RETENTION (EVEN BONDED)
- REQUIRES MORTISE FORM
- MOISTURE CONTAMINATION REDUCES LONGEVITY
- NOT ESTHETIC
- BONDING REQUIRES STRICT ISOLATION

# COMPOSITE RESIN

## ADVANTAGES

- CAN BOND TO ENAMEL & DENTIN
- REQUIRES NO MECHANICAL RETENTION
- DOES NOT REQUIRE MORTISE FORM
- ESTHETIC

## DISADVANTAGES

- CONTAMINATION BY ORAL FLUIDS CAN PREVENT BONDING
- POST OPERATIVE SENSITIVITY
- REQUIRES ACCESS FOR LIGHT
- BOND TO DENTIN NOT AS STRONG AS ENAMEL

# RESIN-MODIFIED GLASS IONOMER CEMENT

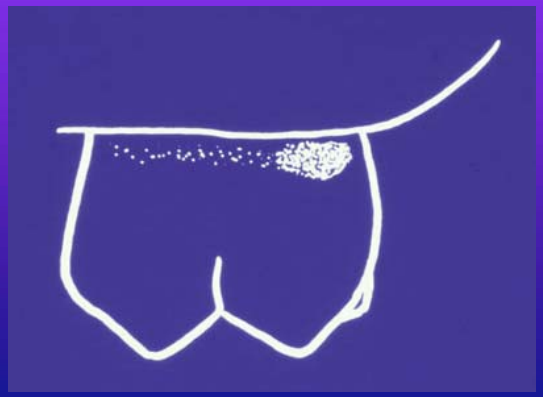
## ADVANTAGES

- CHEMICAL BOND TO DENTIN
- REQUIRES NO MECHANICAL RETENTION
- REQUIRES NO MORTISE FORM
- FLUORIDE RELEASE
- MODERATE ESTHETICS

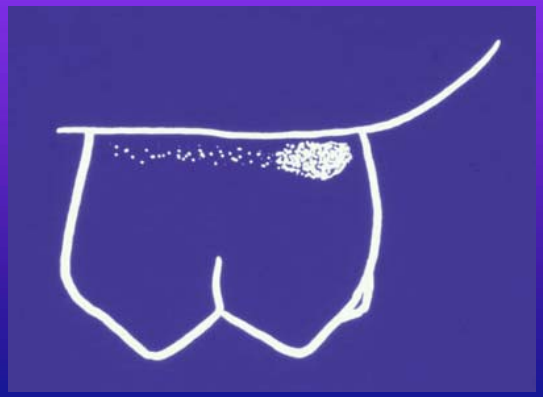
## DISADVANTAGES

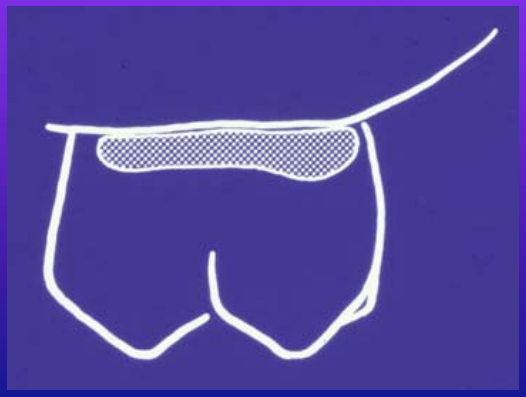
- REQUIRES STRICT ISOLATION
- NOT AS ESTHETIC AS COMPOSITE RESIN
- WEAKER THAN COMPOSITE RESIN

# extension on root surfaces



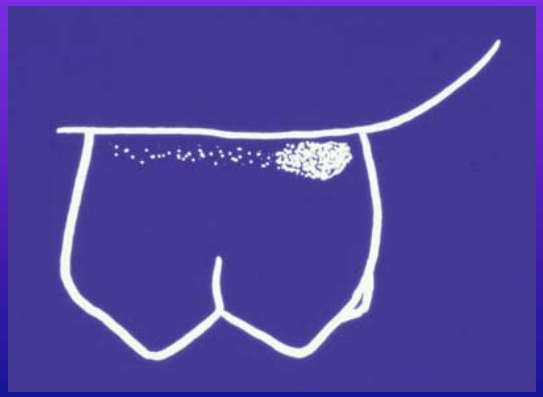
# extension on root surfaces

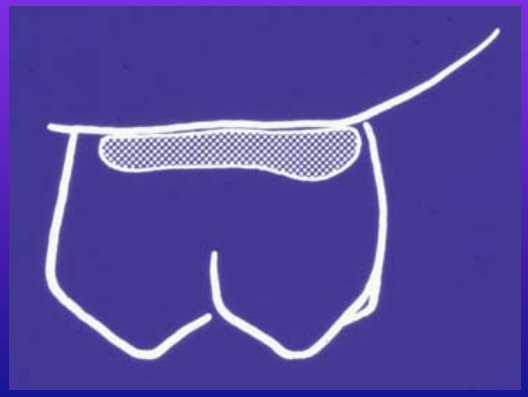


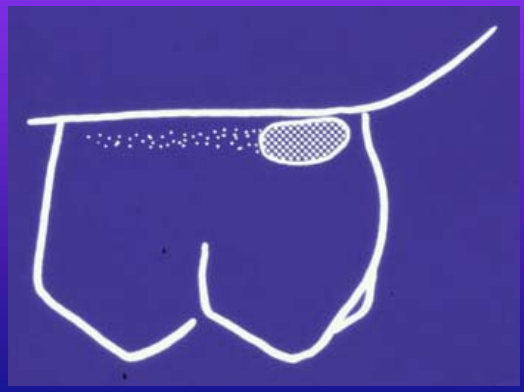


# extension on root surfaces

- view cut wall
- extend until decalcification superficial
- treat superficial decalcification with recontouring & remineralization



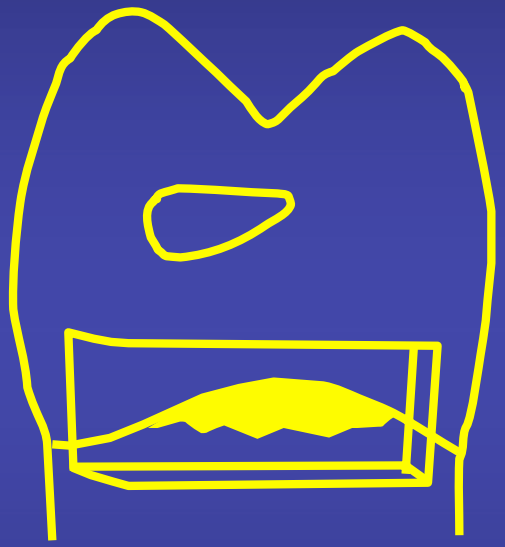




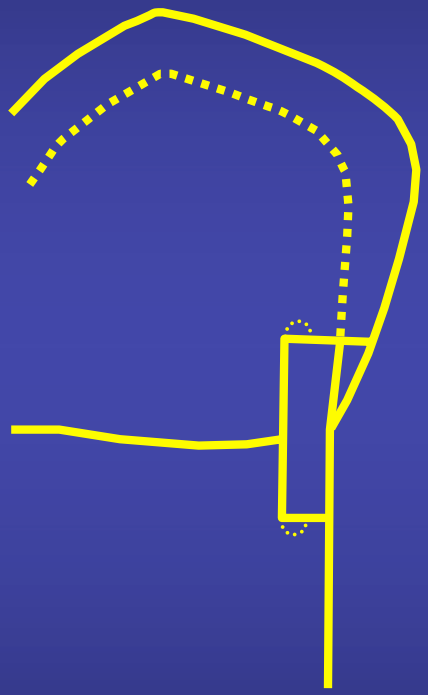
# THE SLOT PREPARATION

**INDICATIONS:** PROXIMAL ROOT CARIES LESION ON POSTERIOR TOOTH APICAL TO SOUND MARGINAL RIDGE OR ADJACENT TO OTHERWISE SOUND CAST CROWN

# SLOT PREPARATION AT CEJ FOR AMALGAM

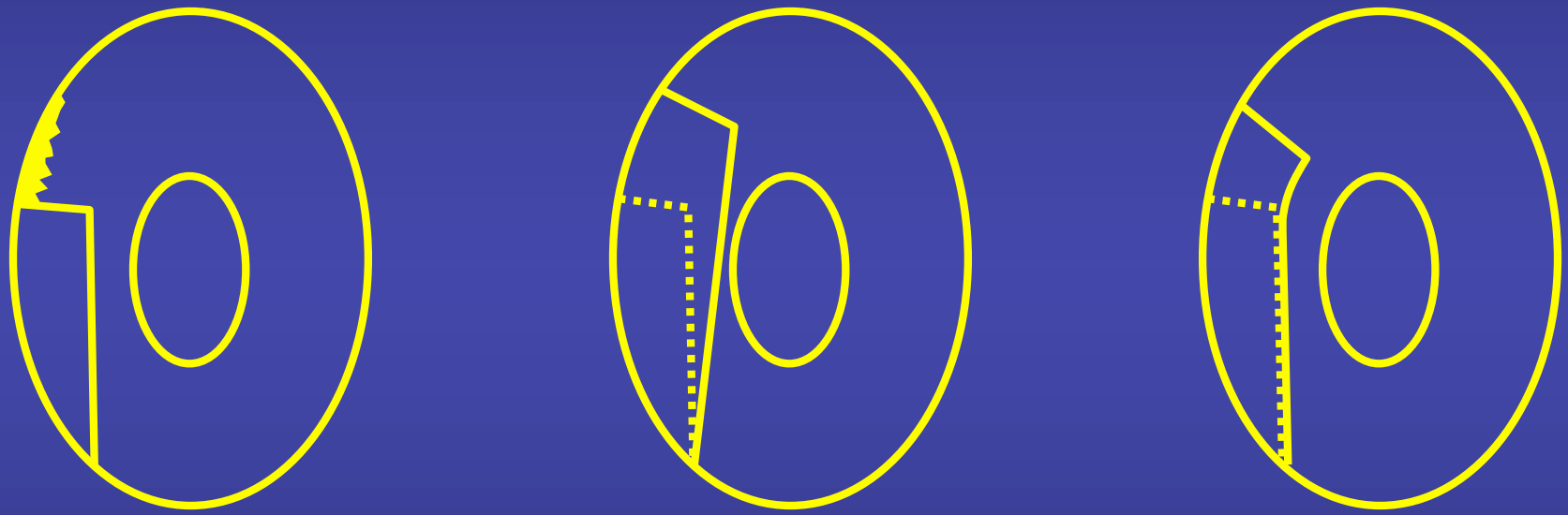


PROXIMAL VIEW

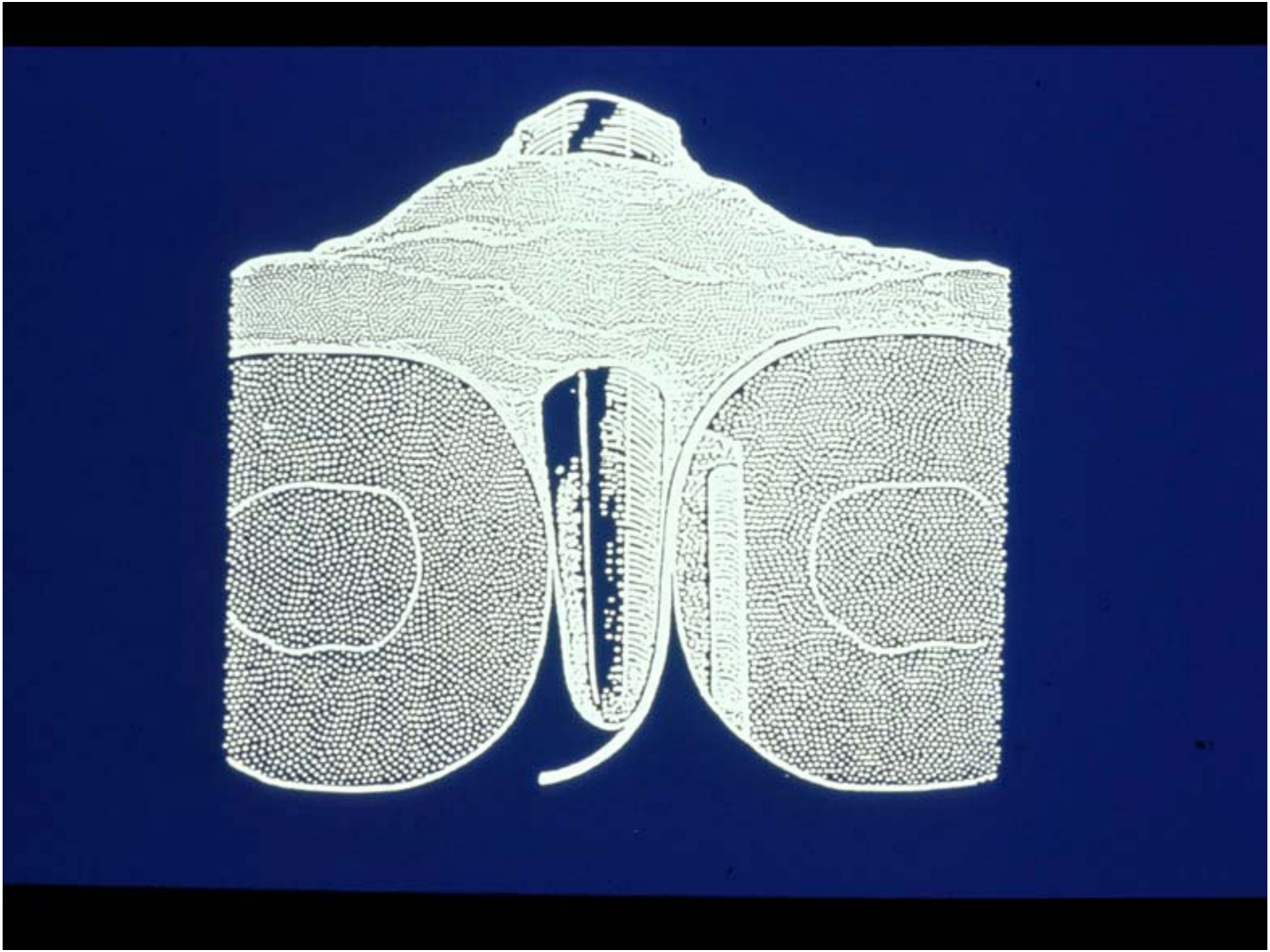


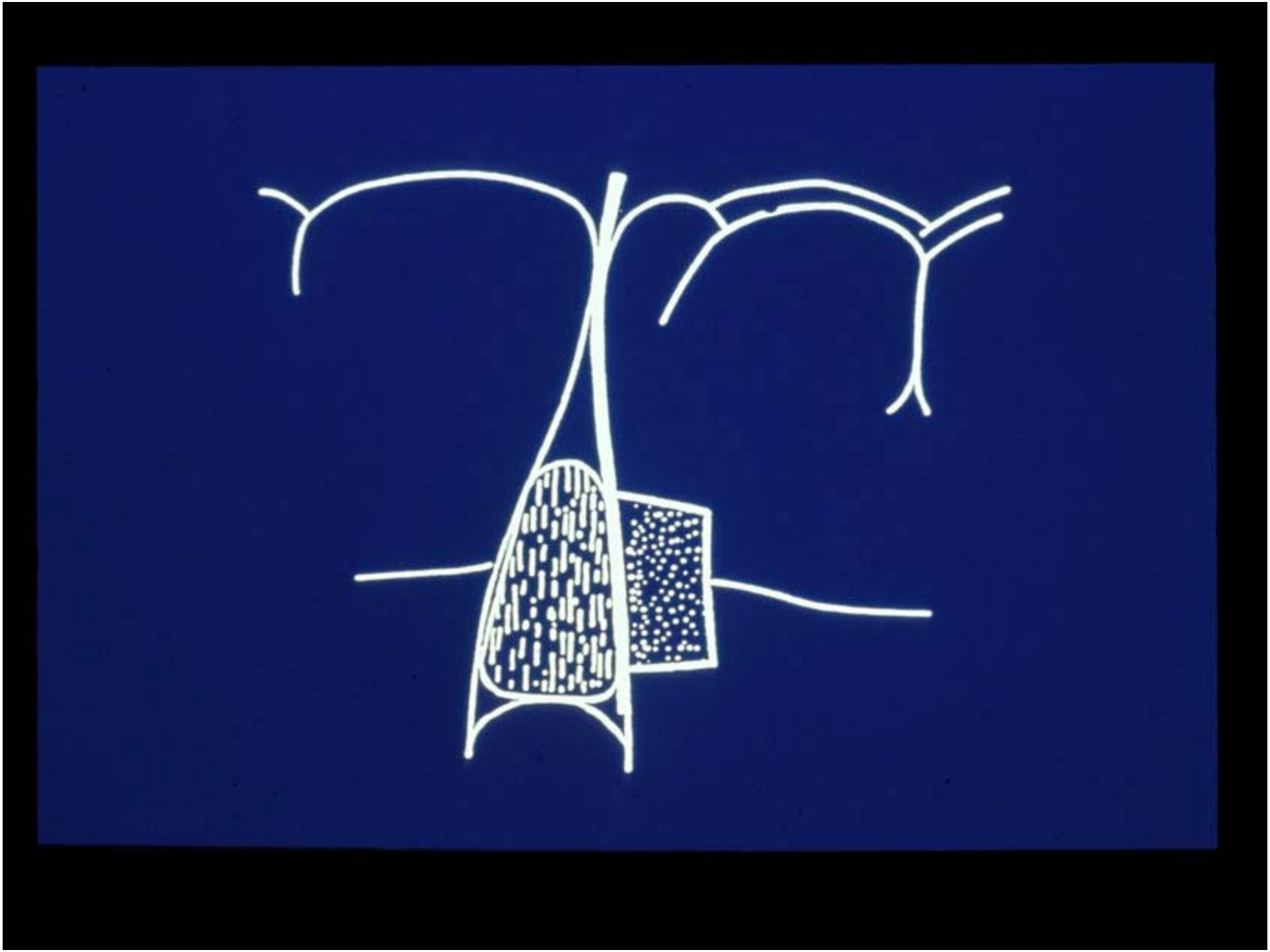
BUCCAL VIEW

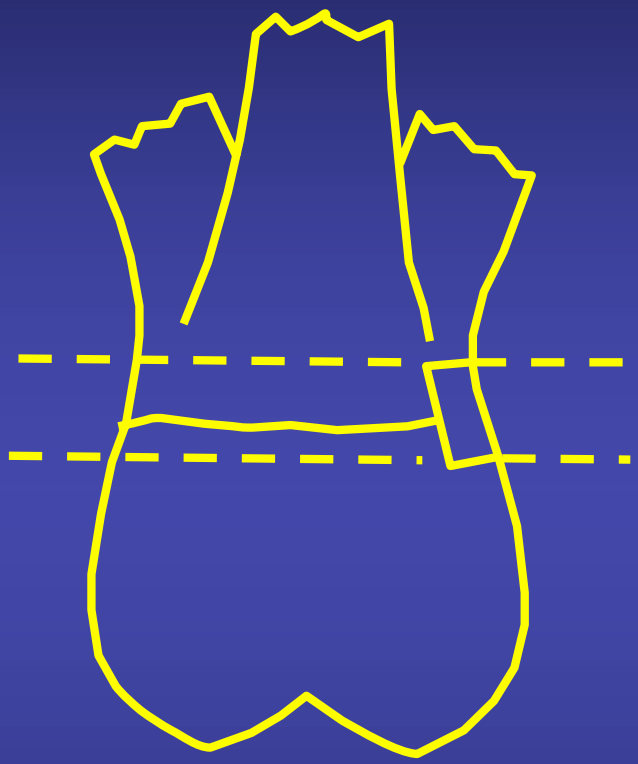
HORIZONTAL
CROSS SECTION

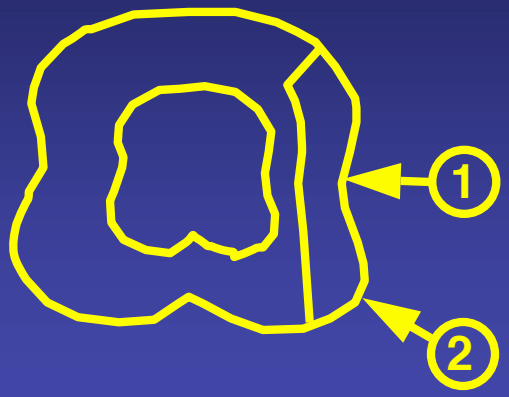


# FACIAL DOVETAIL





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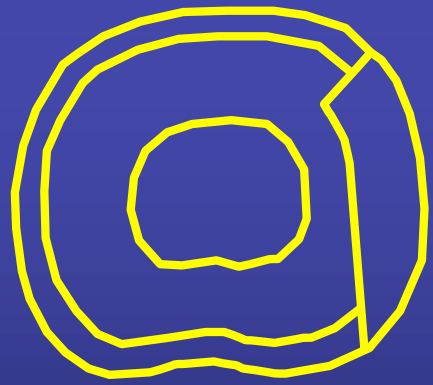
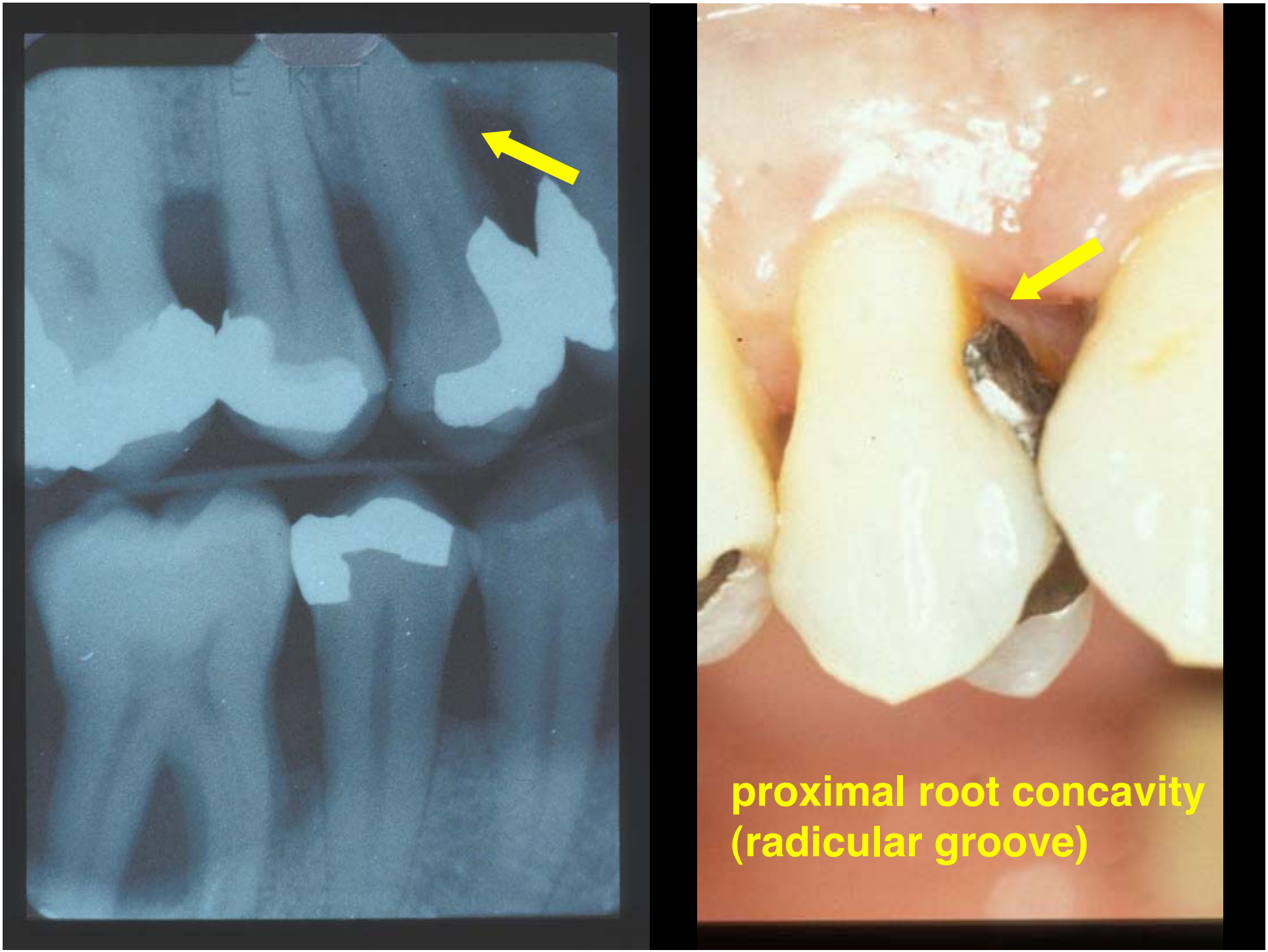
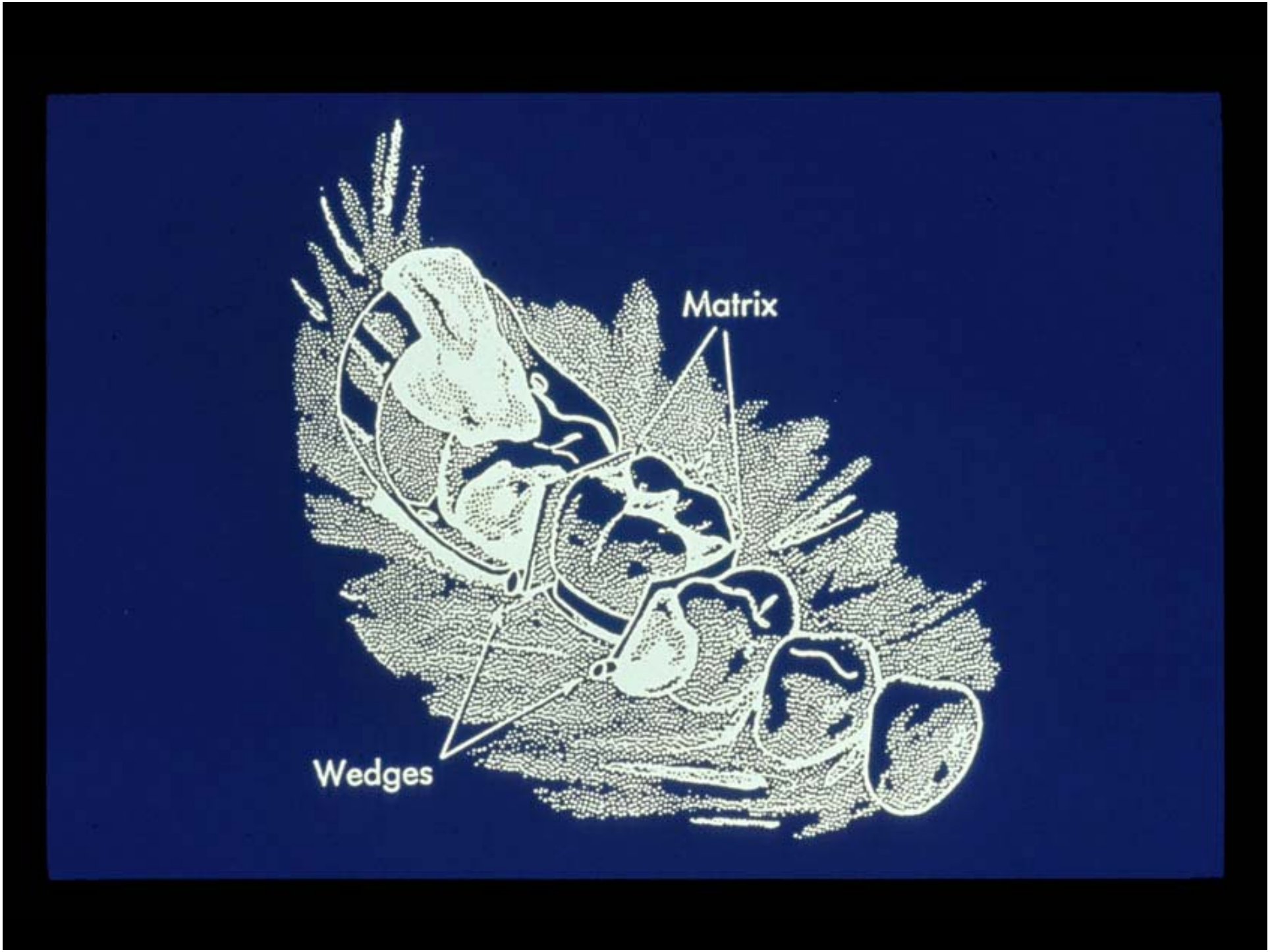
2



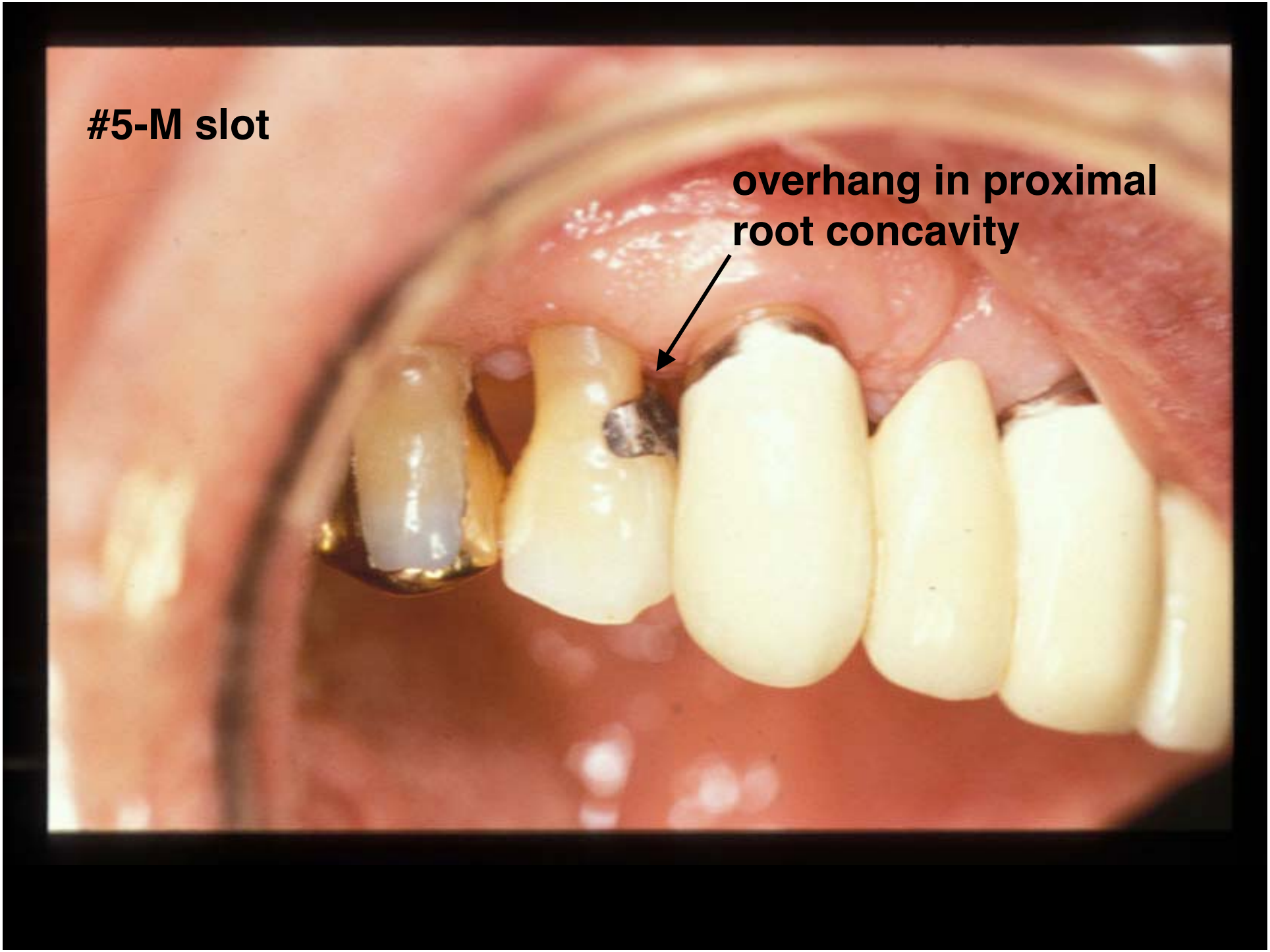

proximal root concavity
(radicular groove)

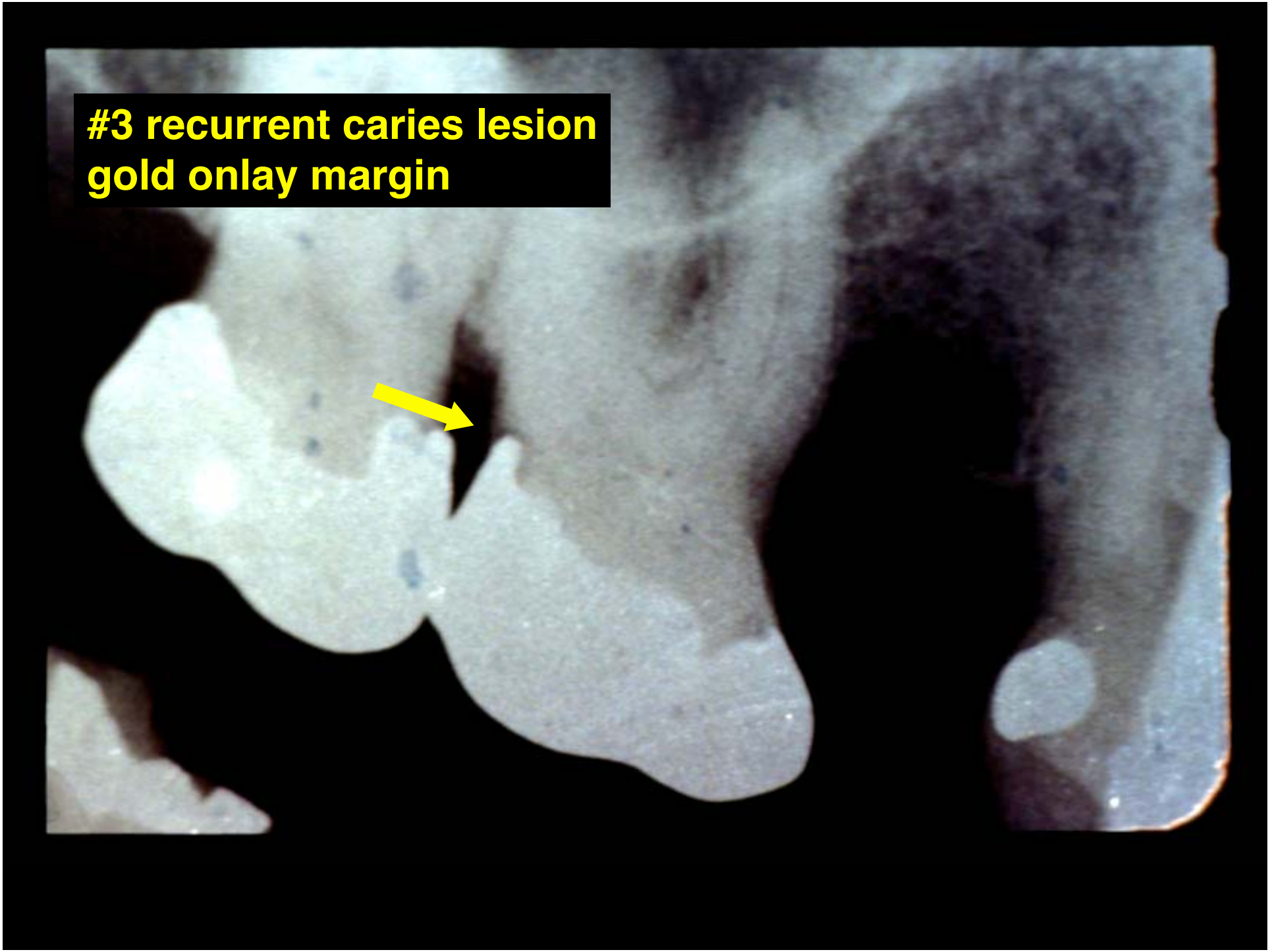
# THE SLOT / CLASS V COMBINATION

**INDICATIONS:** WRAPAROUND ROOT CARIES LESIONS (SOMETIMES SEEN ON CROWN MARGINS)


Matrix
Wedges


#5-M slot


#5-M slot
overhang in proximal
root concavity


#3 recurrent caries lesion
gold onlay margin