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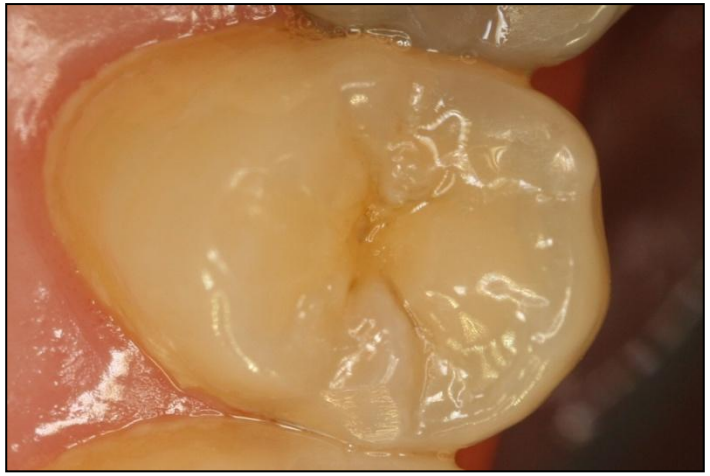
Class II.

Location:

Defects affecting one or both proximal surfaces of posterior teeth.



Proximal surface in posterior area

- Proximal surface is caries danger area (below the contact point) – high plaque accumulation

- Interdental space is infilled with interdental palilla, that moves apically during the time and the space is open

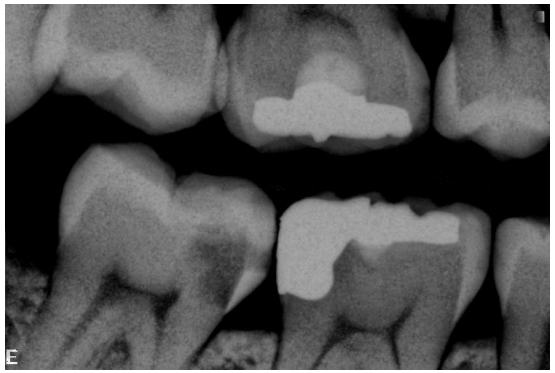
- Dental caries originates below the contact point.

Class II.

Origin:

Proximal surface below the contact point

Propagation of dental caries from the occlusal surface



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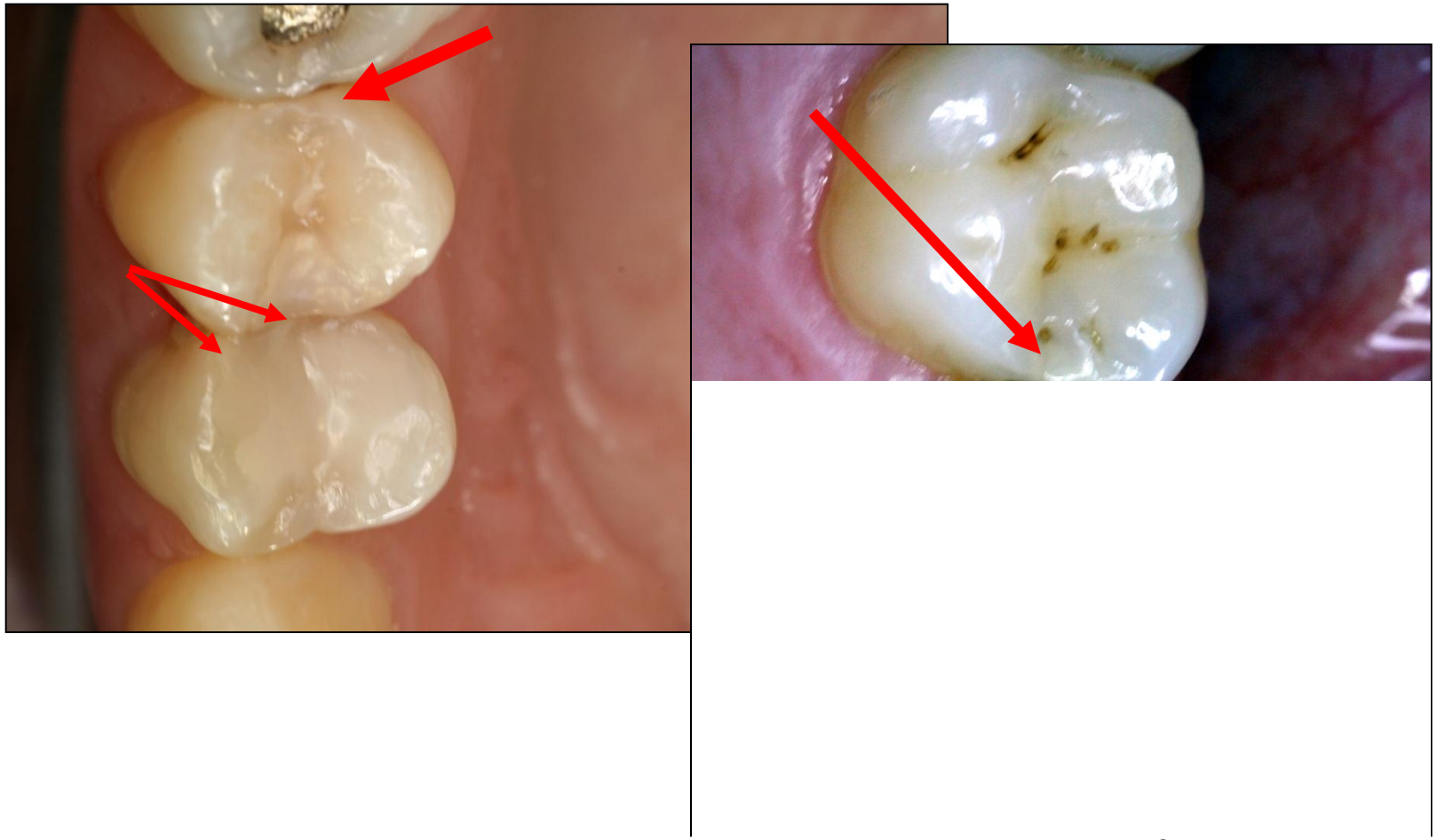
Symptoms

- No symptoms
- Increased sensitivity (cold, sweet)
- Retention of food
- Defect (carious lesion is open – the enamel is broken)
- Bite sensitivity (when carious lesion is open)

Diagnosis

- Visual changes of tooth structure (chalk white colour).
- Transillumination (white light, or Diagno Cam).
- Radiography



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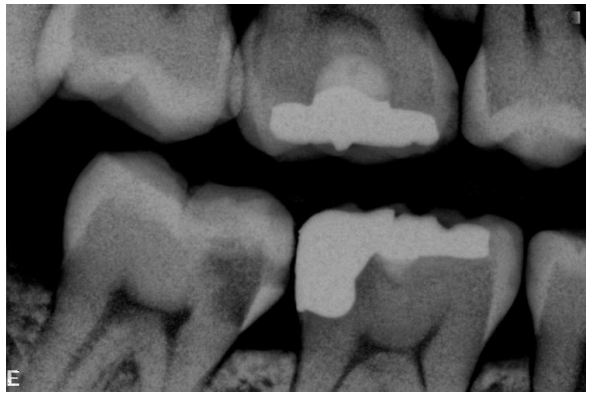
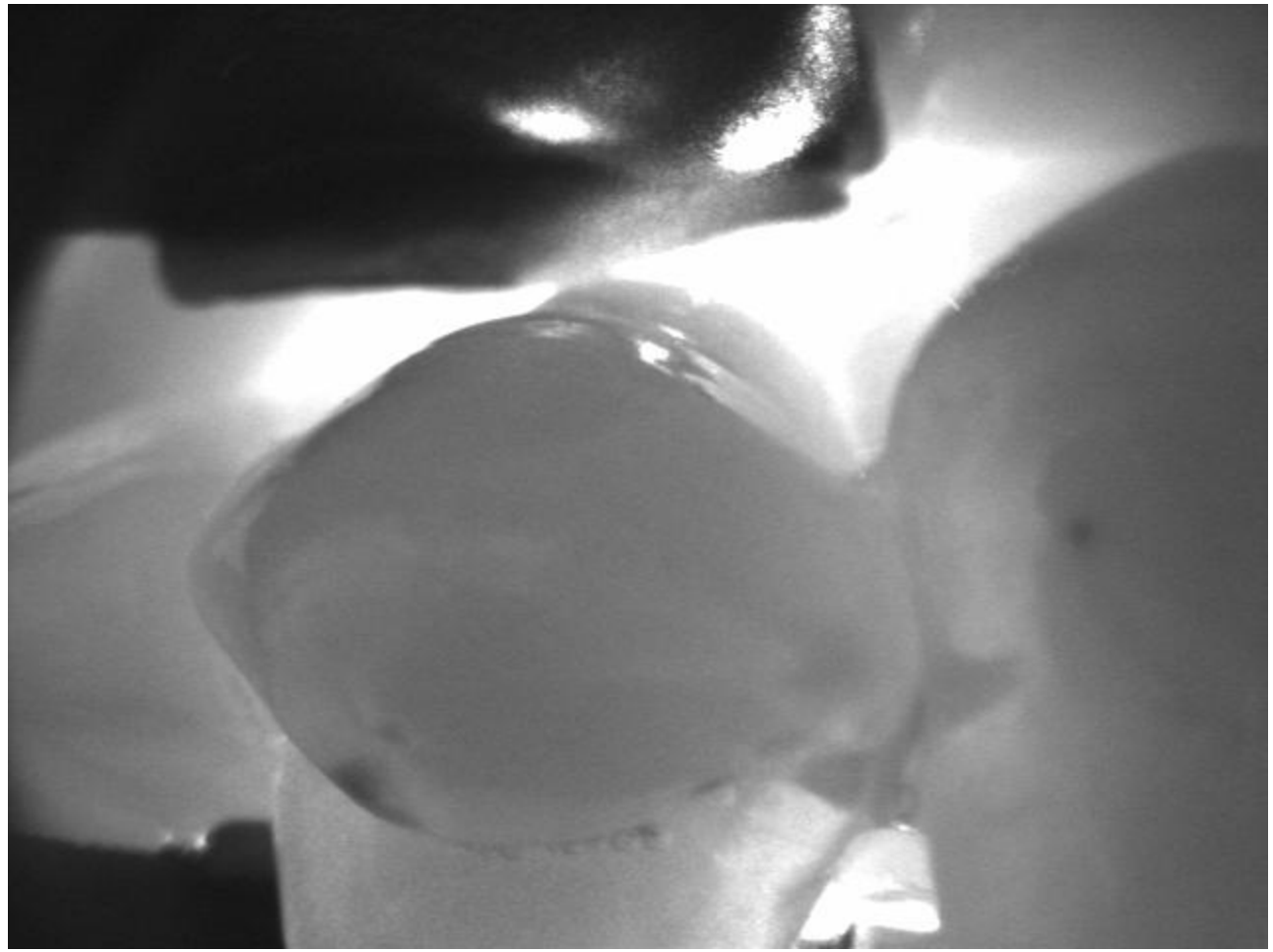
Bite wing projection

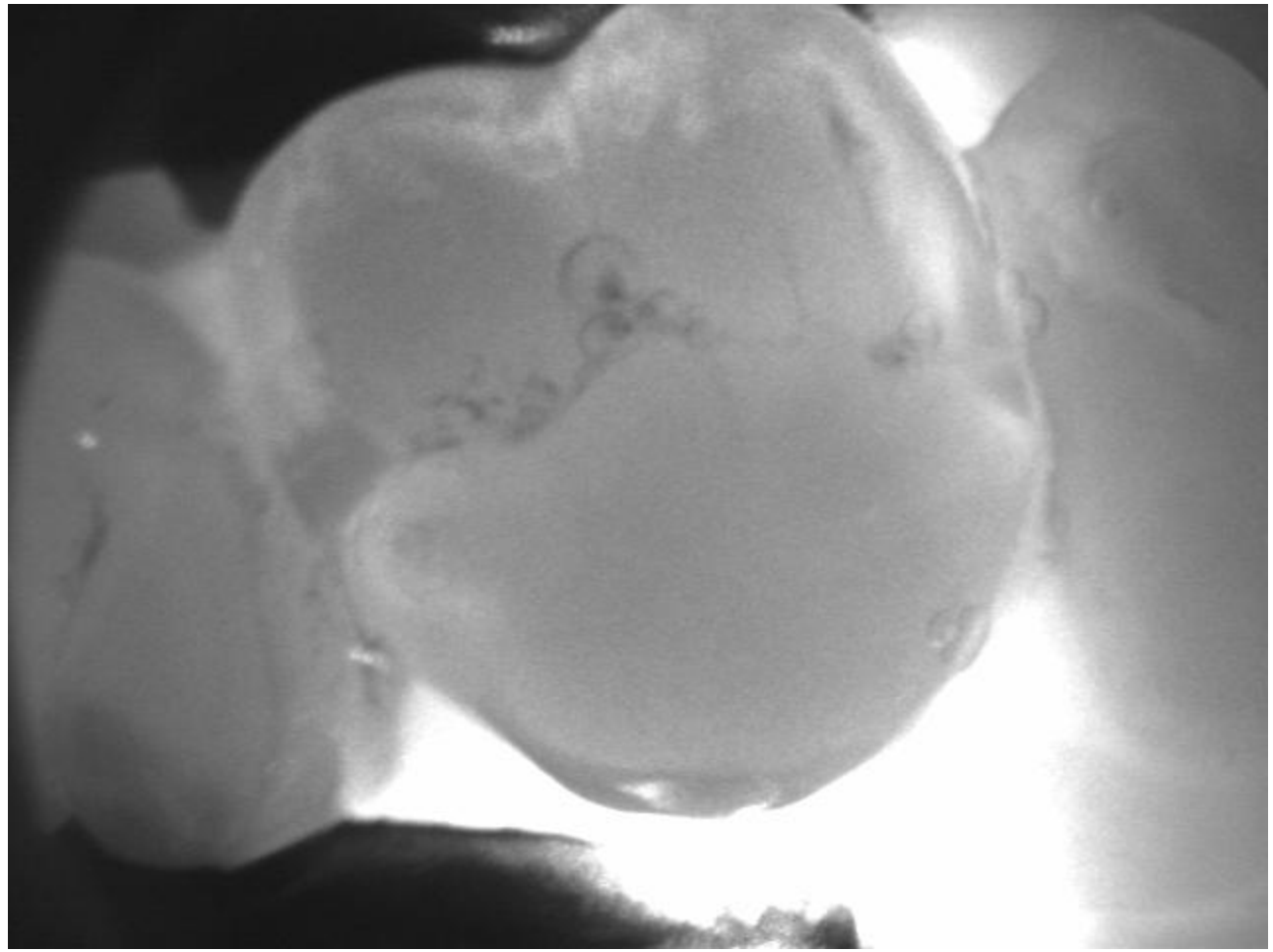
The sensor is placed in a special holder
Central beam goes perpendiculary
to the sensor as well as the long axis of the tooth
And parallel with interdental septa



DIAGNOCam

Transillumination using infrared transillumination – near infrared NIR





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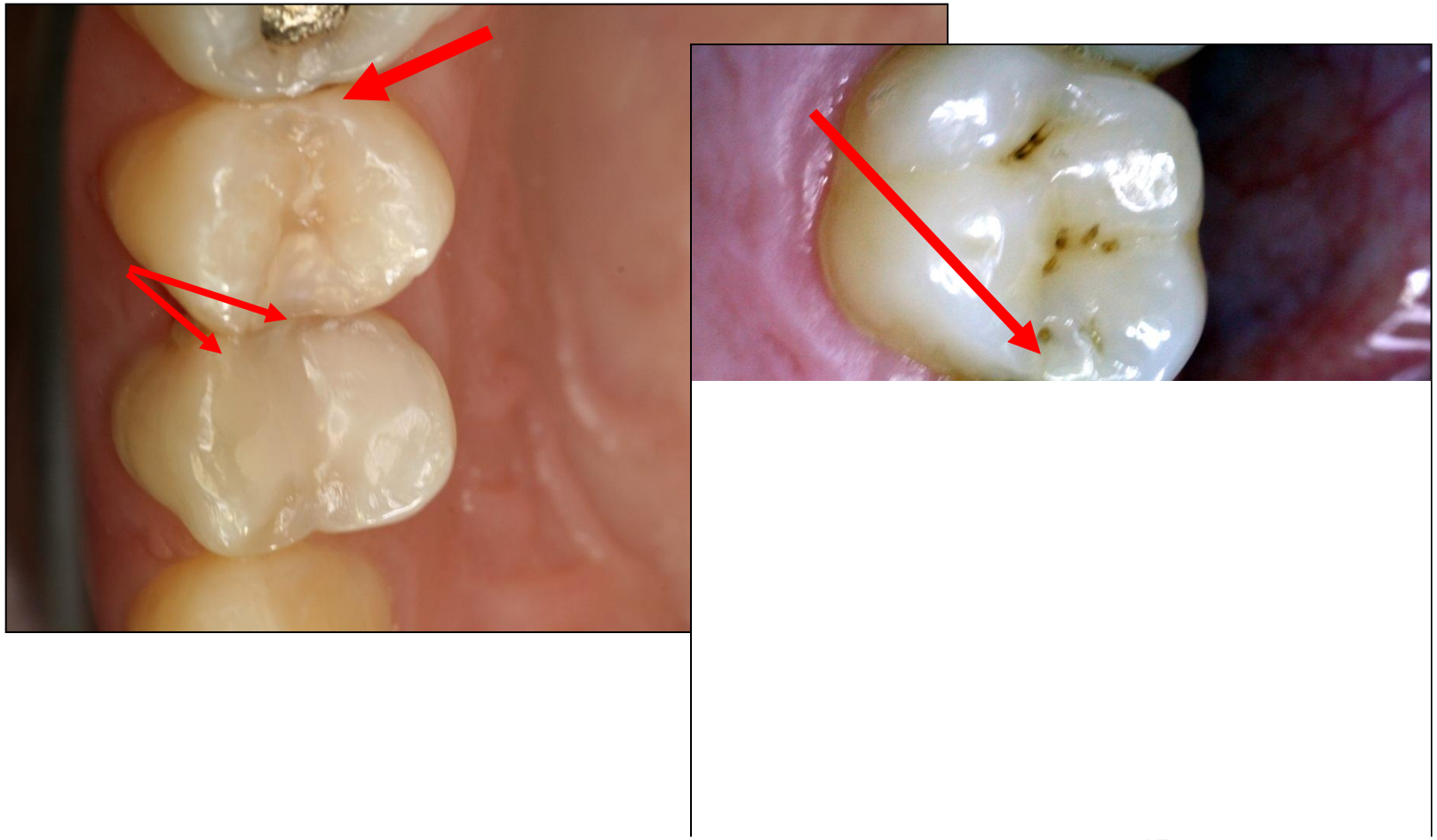

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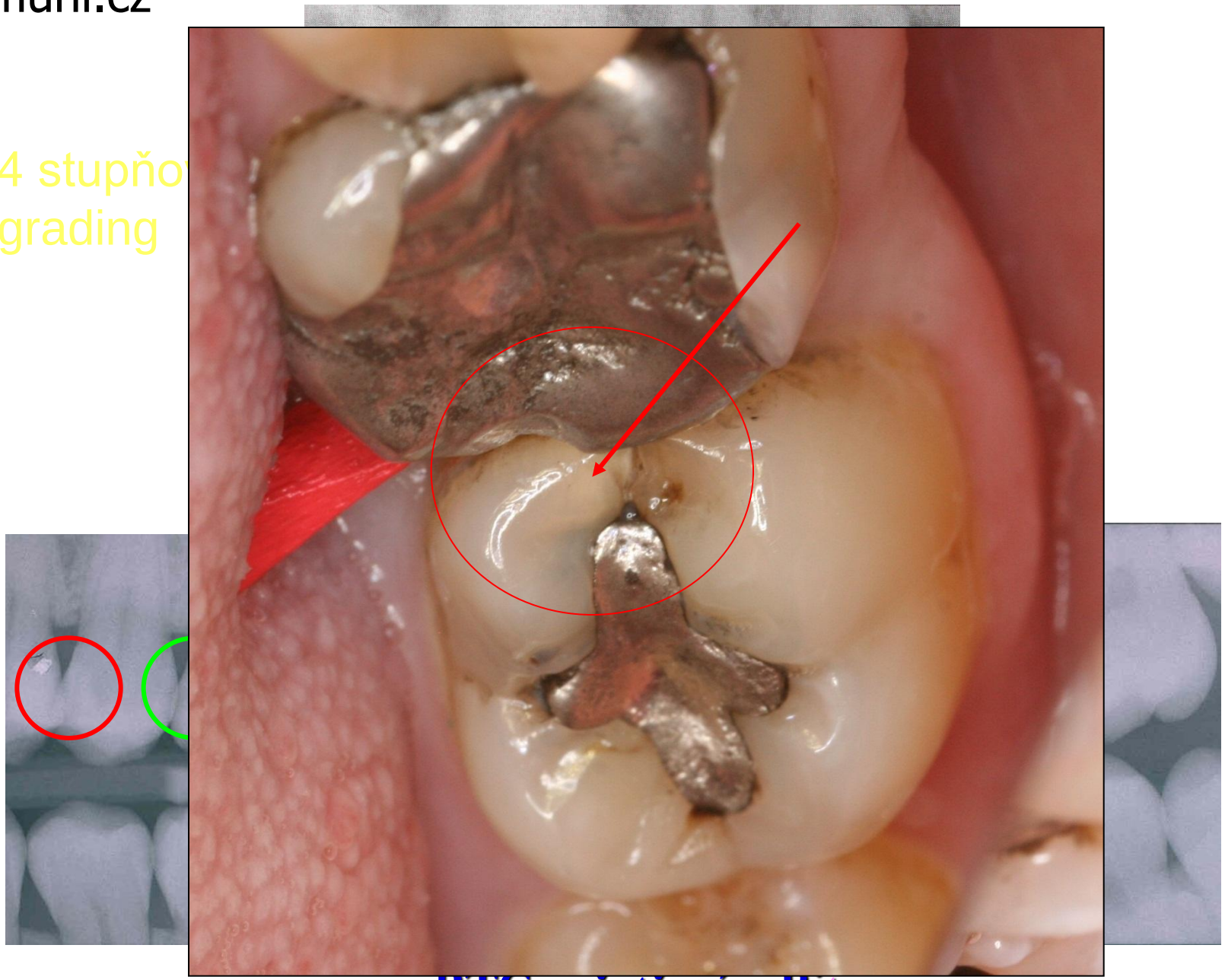
4 stupňo
grading



RTG vyšetření – Bite Wing

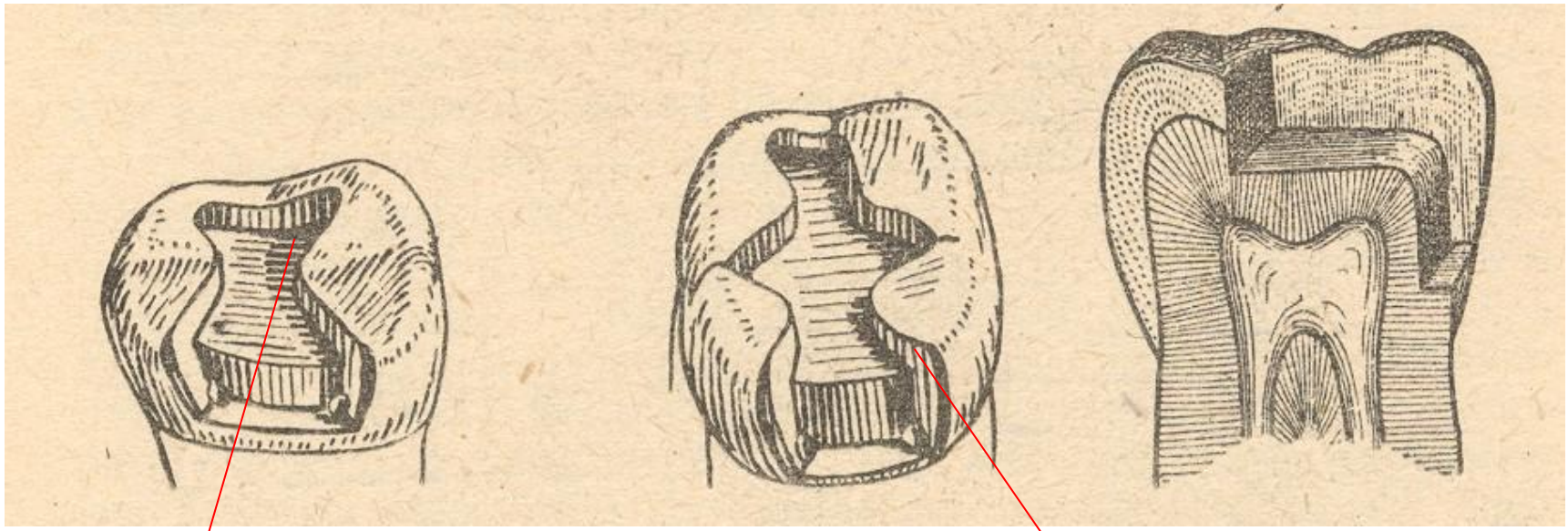
Preparation

- Conventional preparation
- Slot preparation
- Large preparation – cusp(s) involved

Preparation - adhesive materials (composites, glass ionomers)

- Conventional preparation for composites
- Adhesive slot
- Tunnel preparation

Conventional preparation amalgam



Occlusal cavity

Proximal cavity - box

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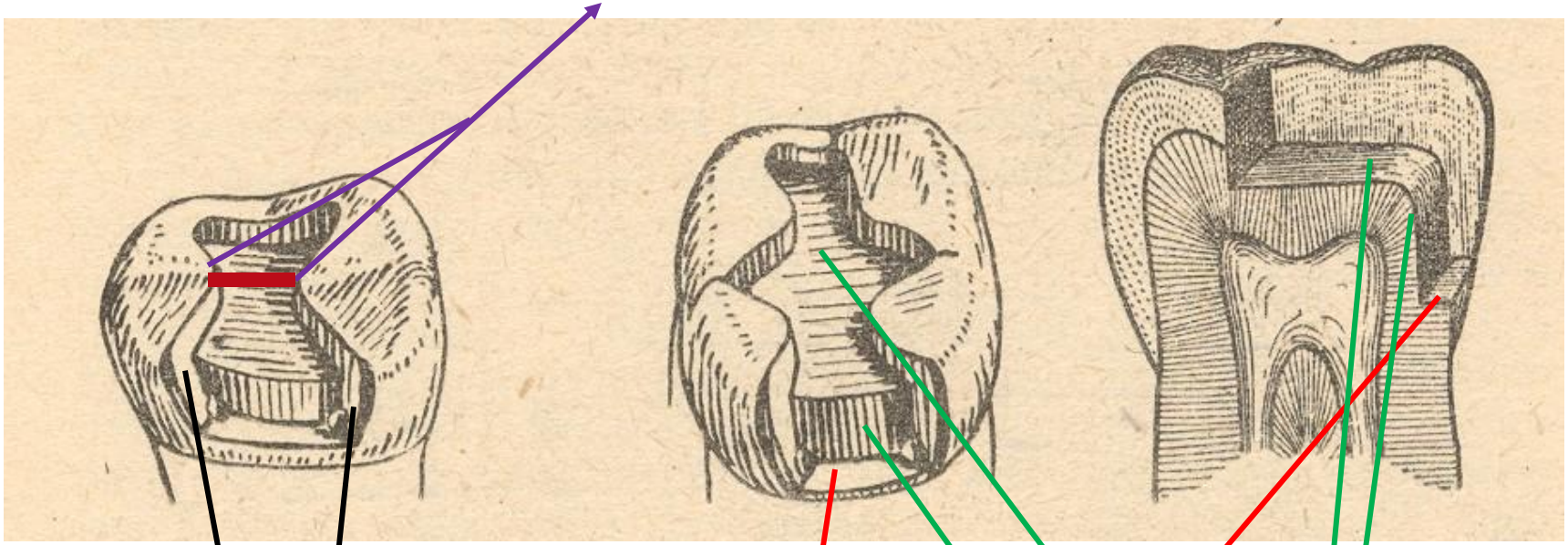

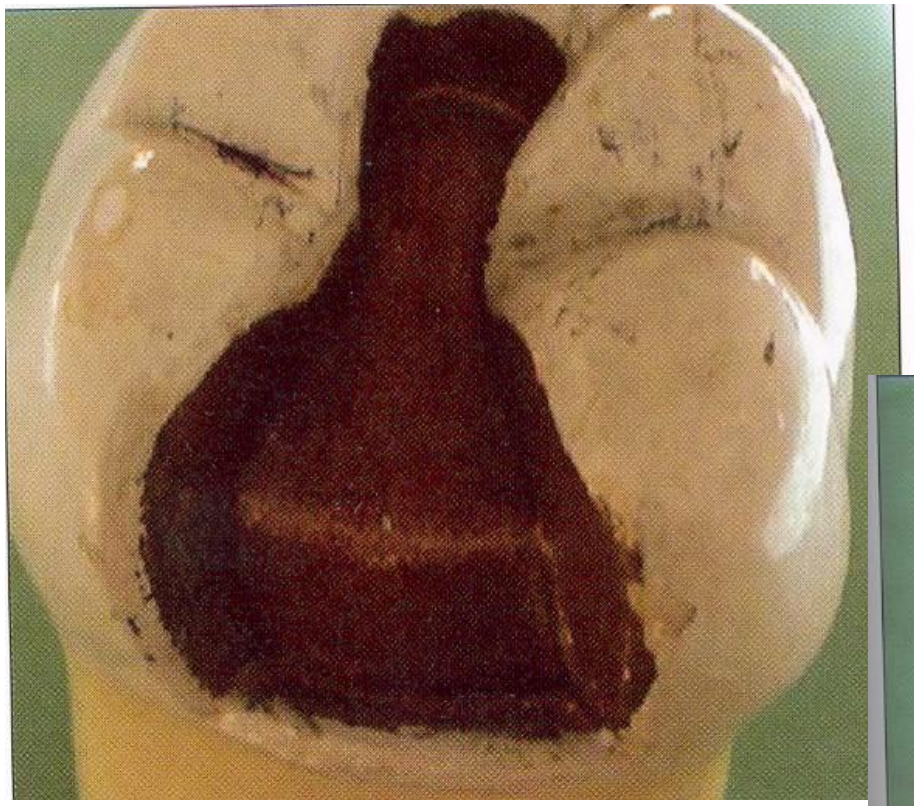

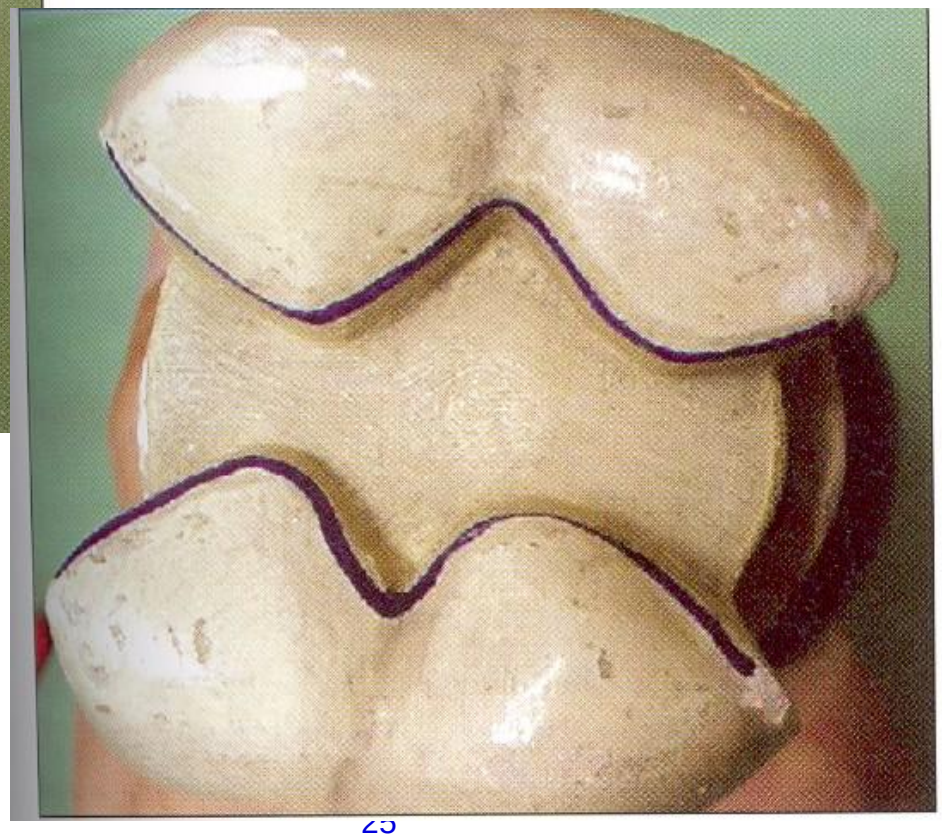

MO, OD: one proximal surface affected – mesio occlusal distoocclusal

MOD: mesiodistoocclusal

Access to the cavity

From the occlusal surface

Through the undermined enamel

Separation using wooden wedges is useful

Pre op

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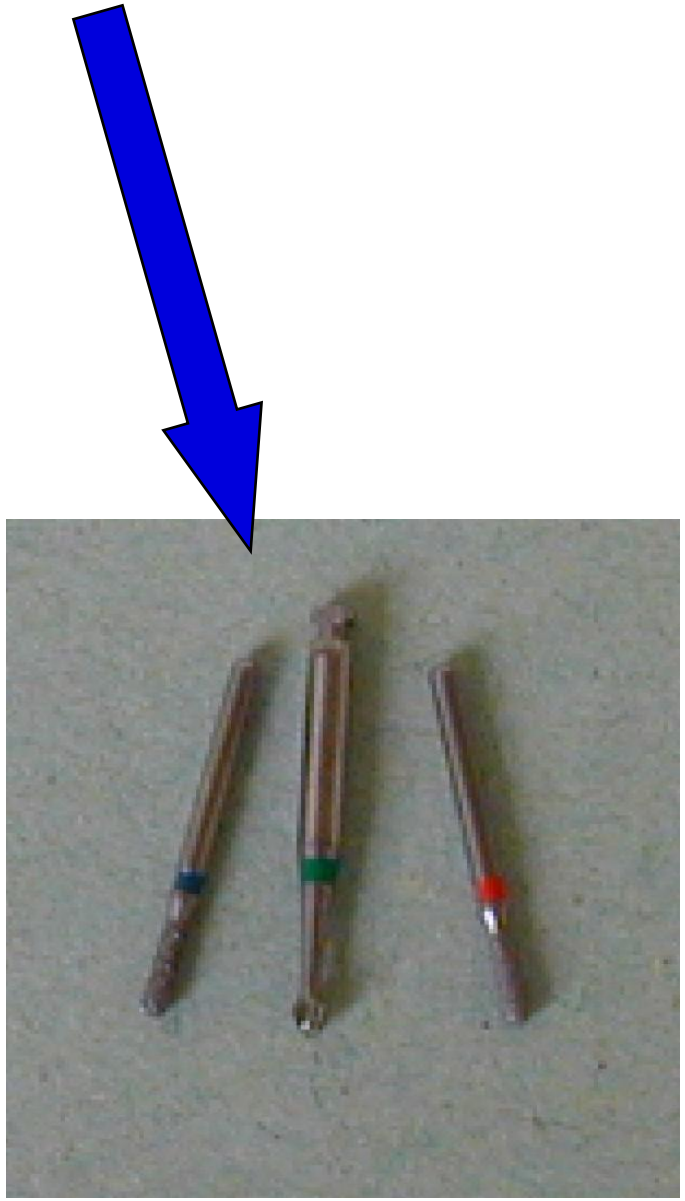

Access to the cavity

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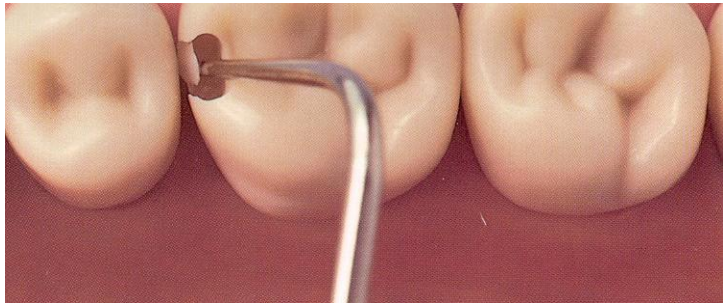
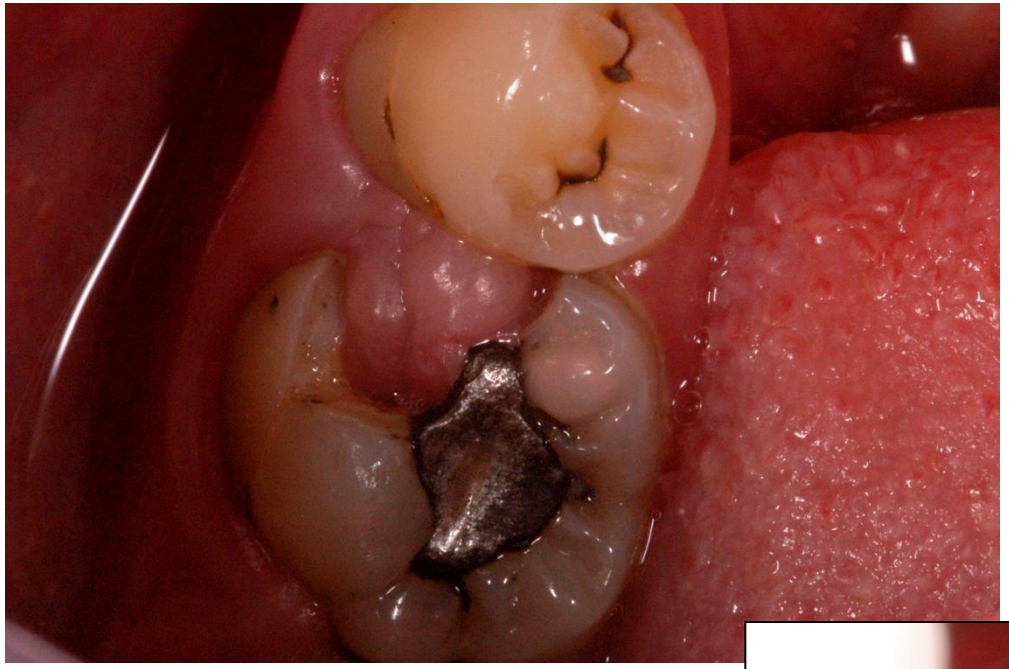
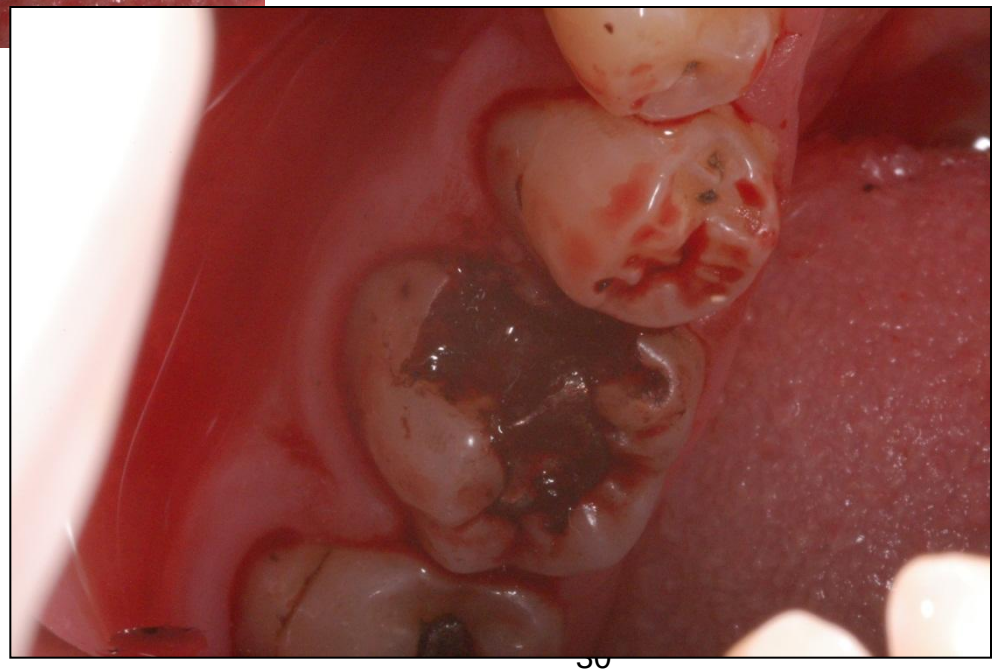
Wooden wedge



Breaking the thin enamel layer out of the cavit



➢ Remove of the gingiva that grows into the cavity



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Cavosurface margin and extention for prevention

Proximal box:

Vestibullary and orally – axial walls (the border between the oral/vestibular and proximal surface.

Below the free gingiva (0,5 mm)

Occlusal

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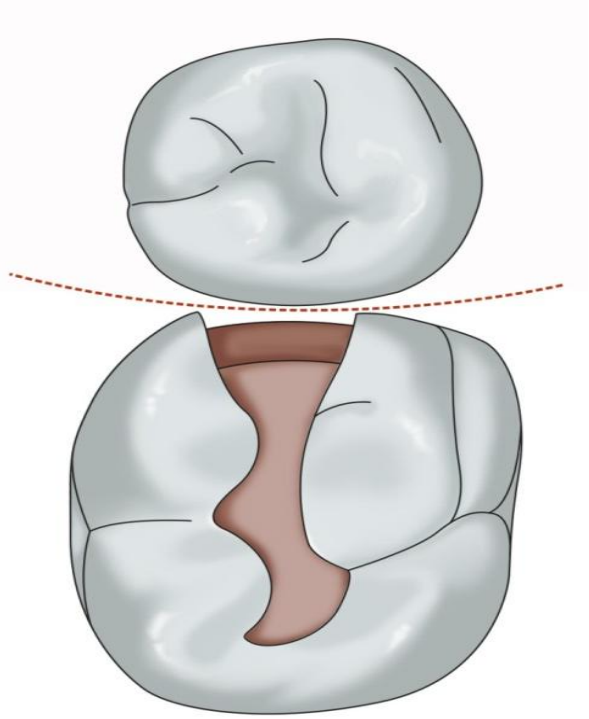
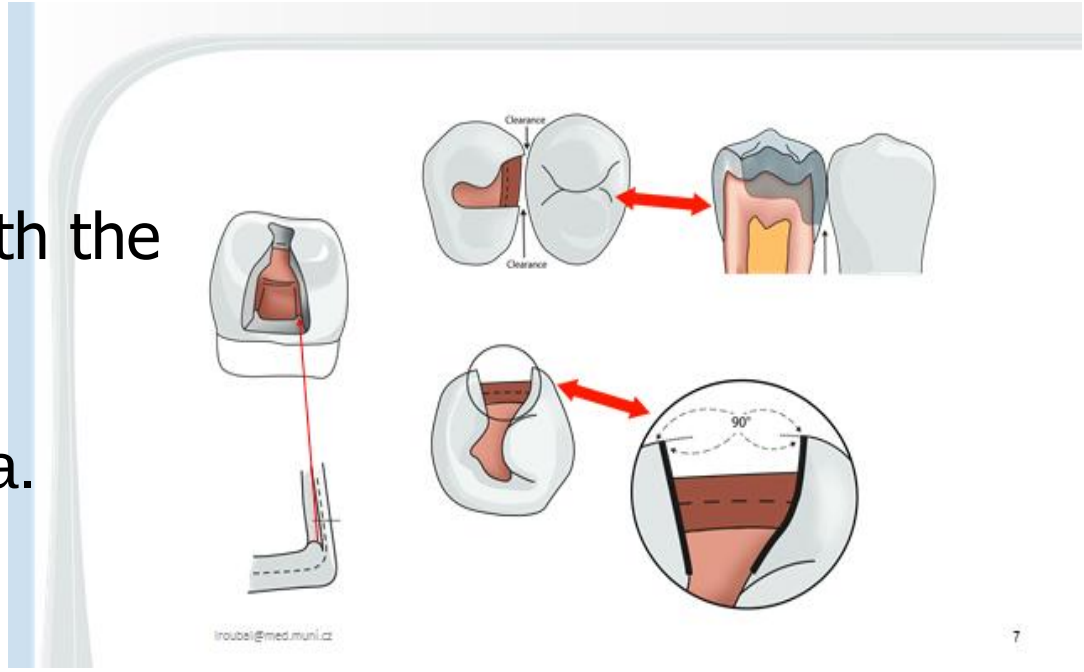


Axial walls

Study the contact area (contact point):
The axial walls (cavosurface margins) are approx. o 0,5 mm vestibulary and orally
Over this area.
The contact of the treated tooth is made of the restorative materials.

Gingival wall is parallel with the cementoenamel junction
and it is situated appr.
0,5 mm below free gingiva.



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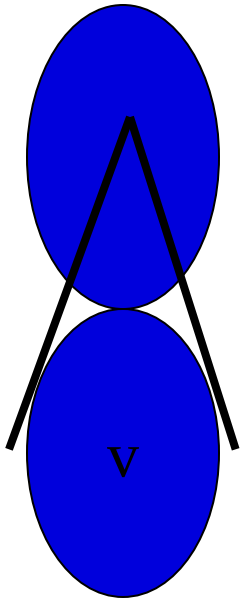
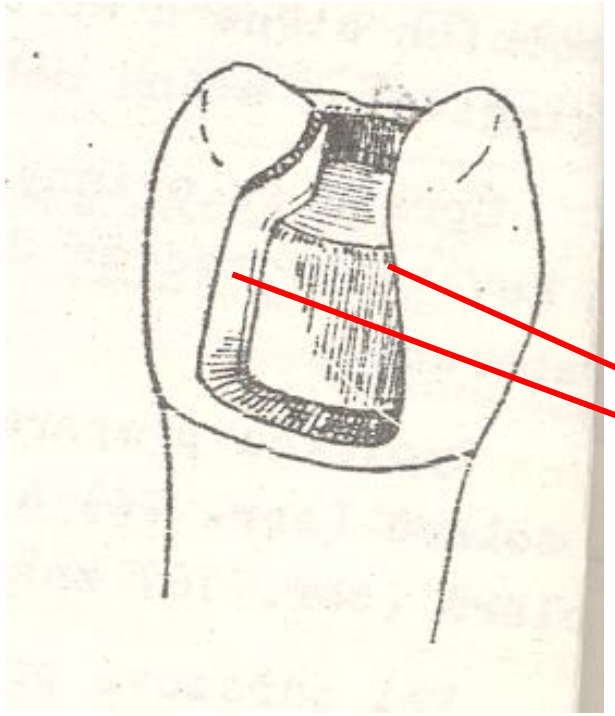
American rule

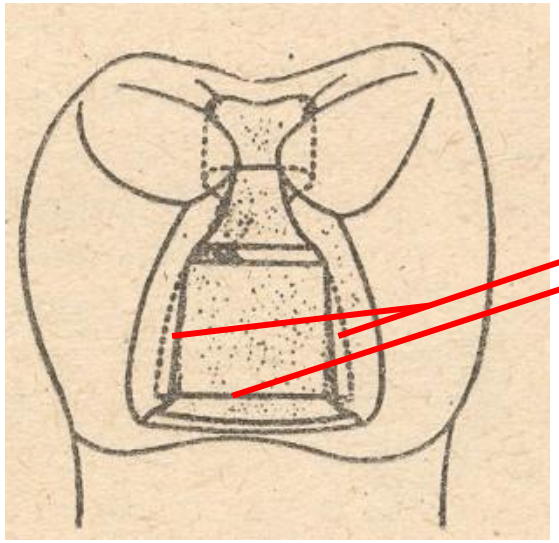


Tangents from the middle of treated tooth
to the next tooth – where these cross the treated
Tooth there are borders of the preparation

Retention - macroretention for amalgam

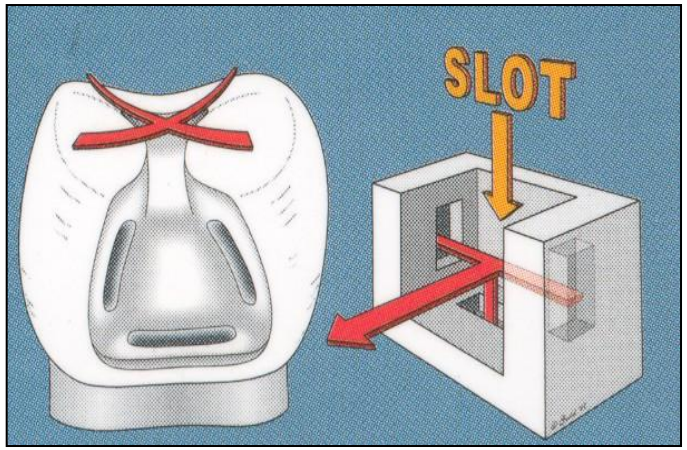
- Occlusal cavity
- Undercuts
- Grooves





Proximal cavity – box

Slight divergency of axial walls
Gingival wall follows the cementoenamel junctio
Gingival wall is below free gingiva



Autoretention

Grooves

For amalgam only !

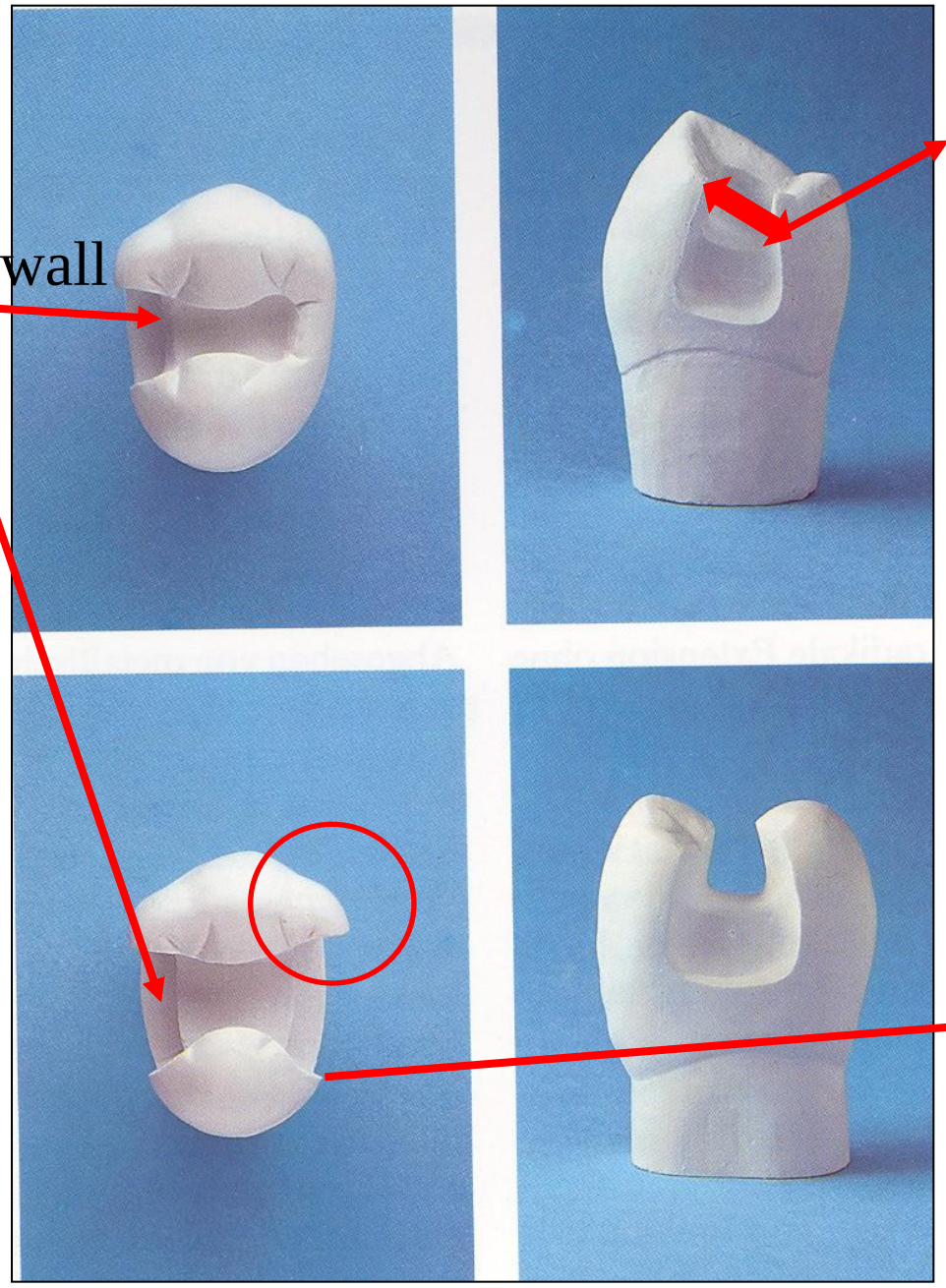
Retention - microretention for composite

- Removal of the aprismatic enamel
- Bevel enamel on axual walls and outer edge of the gingival wall
- Do not bevel the enamel in the occlusal cavity

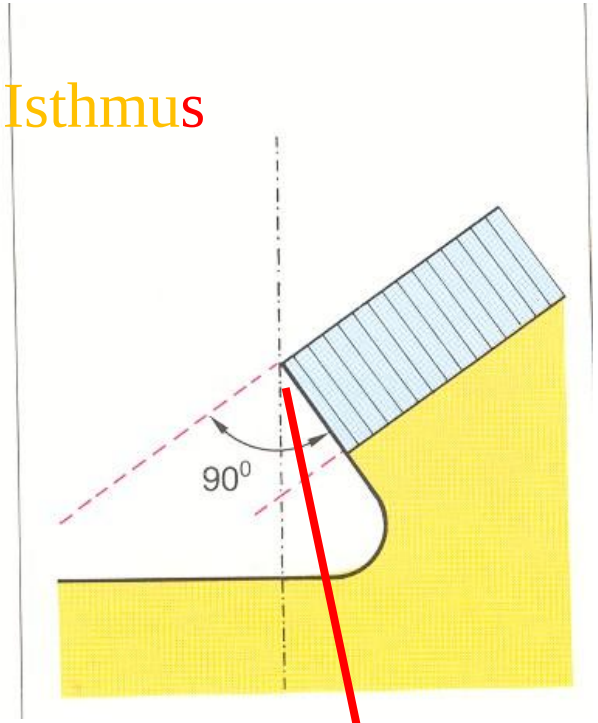
Resistance

- No undermined enamel
- No sharp edges
- Isthmus is 1/3 – 1/4 intercuspidal distance
- Angle between axial and gingival wall: 90°, or 85°
- Width of gingival wall is 1 mm at least
- Thickness of the filling 2 – 4 mm (4mm if cusp replacing)

Gingival wall



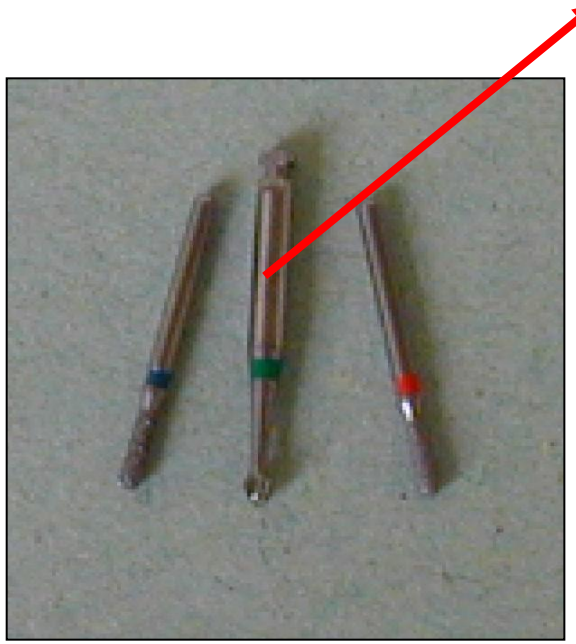
Isthmus



Cavosurface angle

Excavation of carious dentin

Rounded bur



(Caries Detector, Kuraray, Japonsko; Caries Marker, VOCO,Německo)

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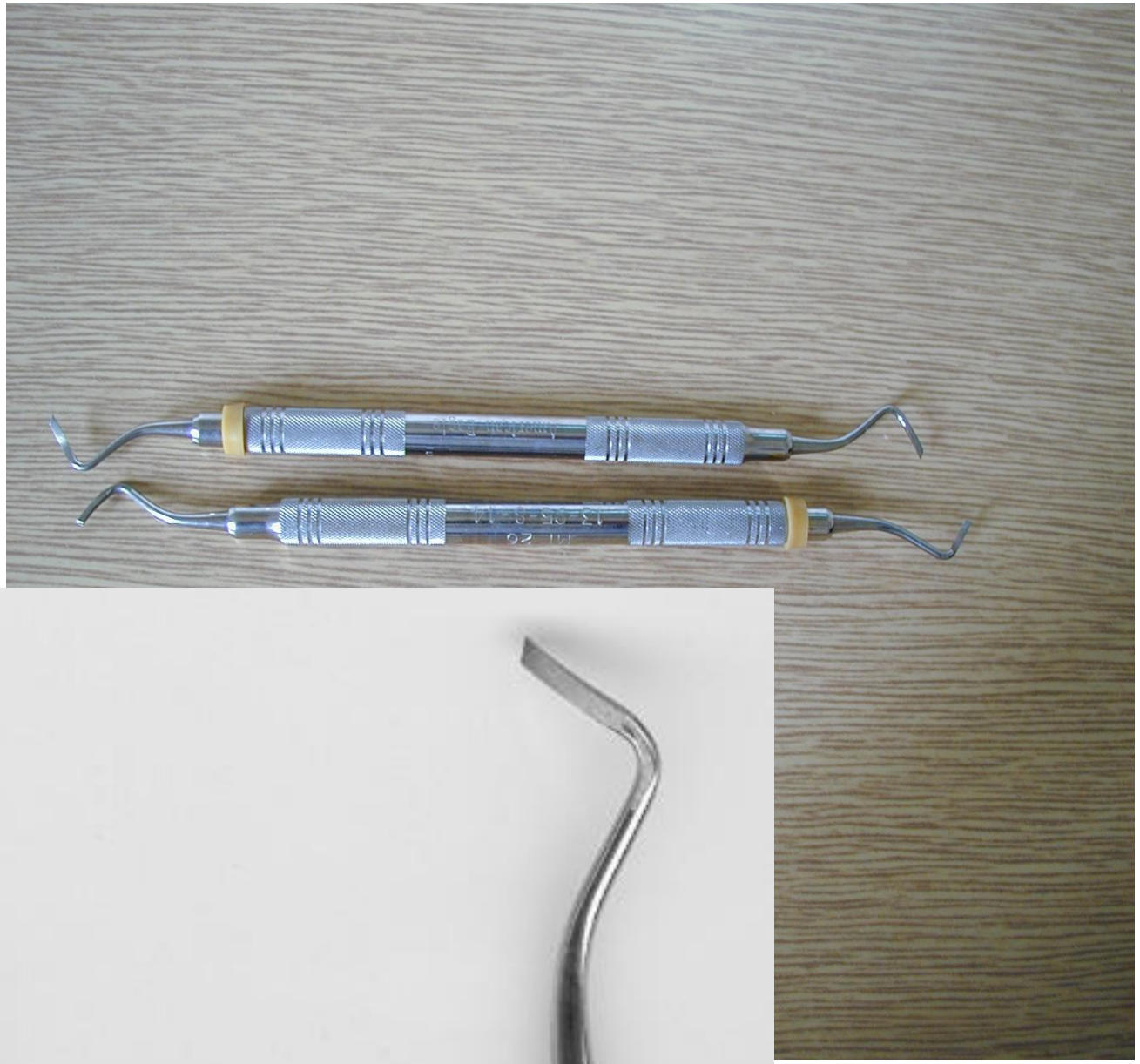
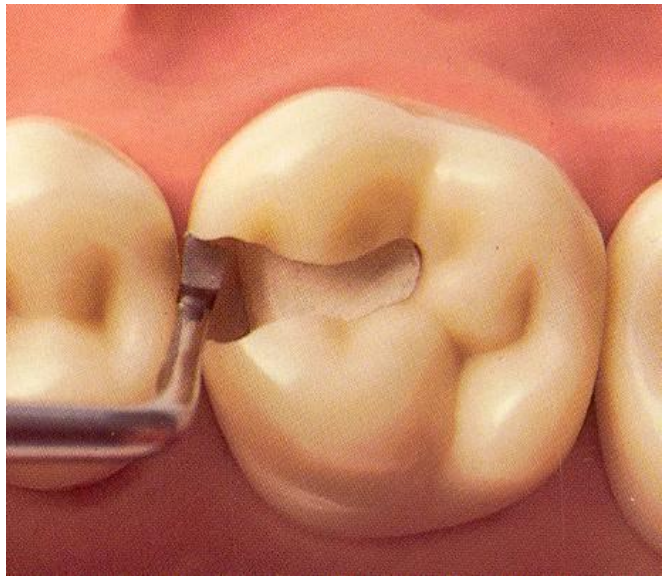
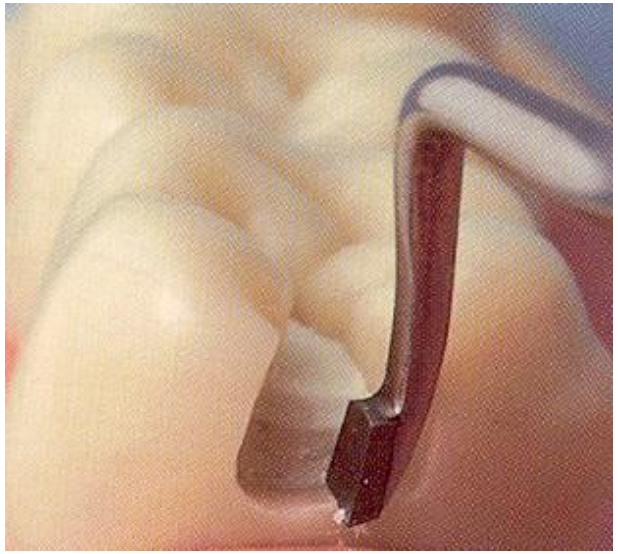
Finishing of the walls of the cavity

- Red coded diamond bur
- Chisel on the gingival wall (if in enamel)







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Final check

- Goog light, miror

For cavities where more than one wall is missing we need matrix

- Matrix is a small tool that replace a missing wall (walls) and enable to gice the filling the proper contour

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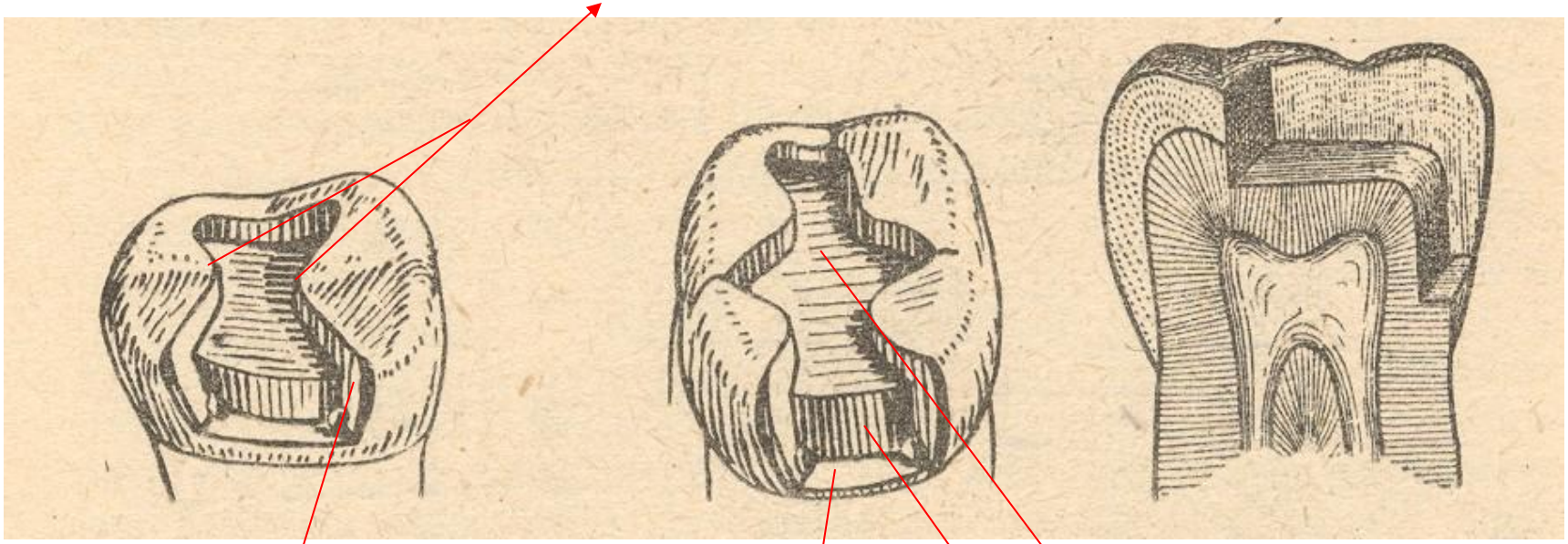

Isthmus

Axial wall

Gingival wall

Pulpal wall

Matrix

➢Matrix primarily is used when a proximal surface is to be restored

The objectives:

- Provide proper contact
- Provide proper contour
- Confine the restorative material
- Reduce the amount of excess materiál

In some cases id important for good setting of the material

Matrices for II.nd class

Circular and sectional matrices

- Circular matrices round the tooth

They are used in combination with the matrix retainer.

- Sectional matrices do not round the tooth, the proximal surface only.

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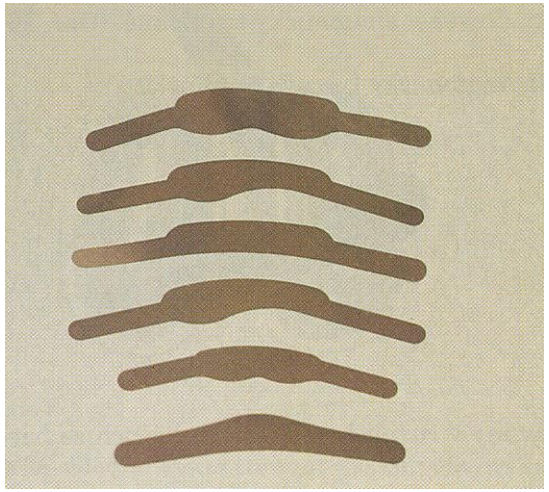
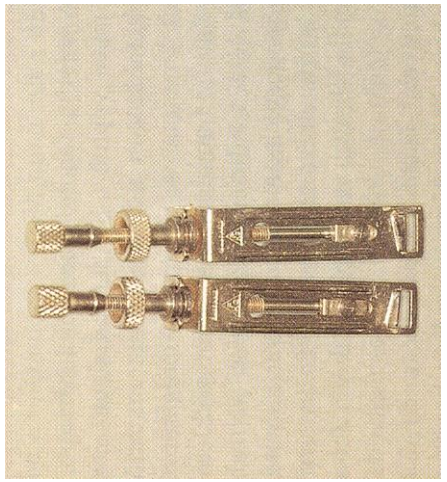
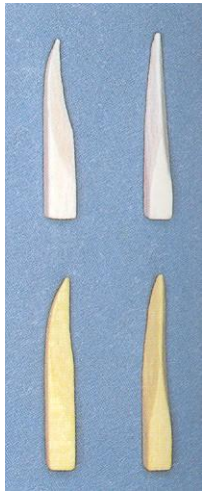
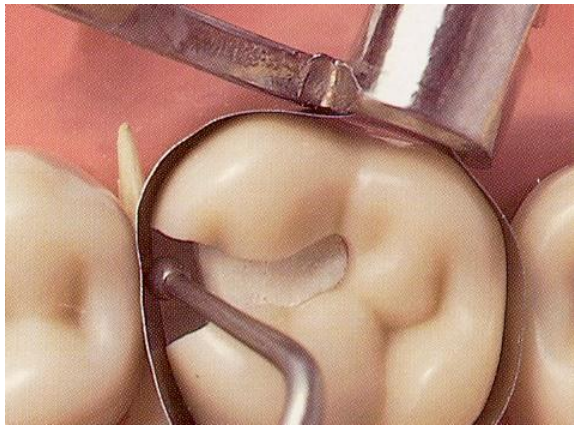
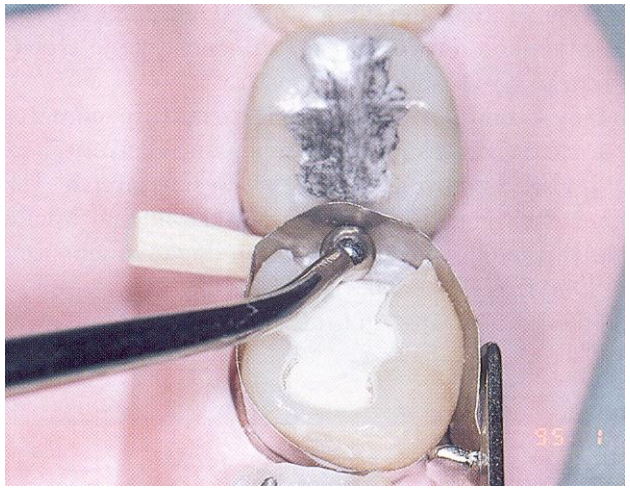
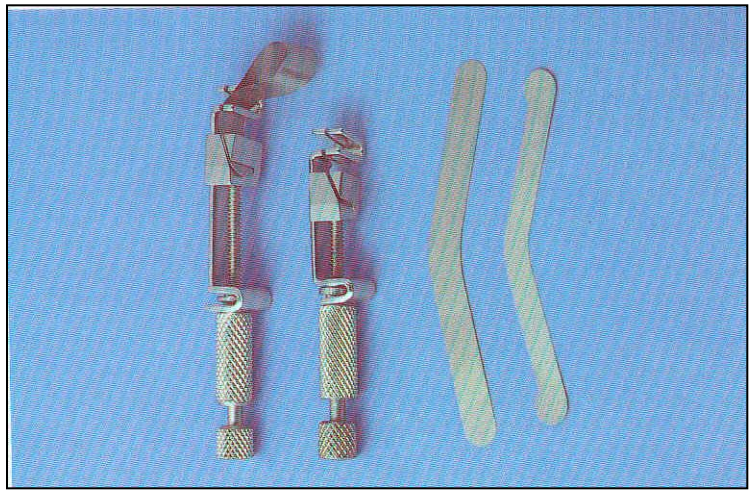


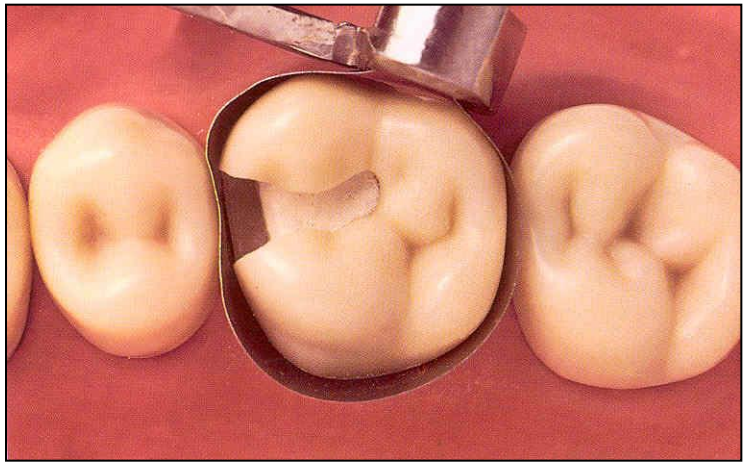


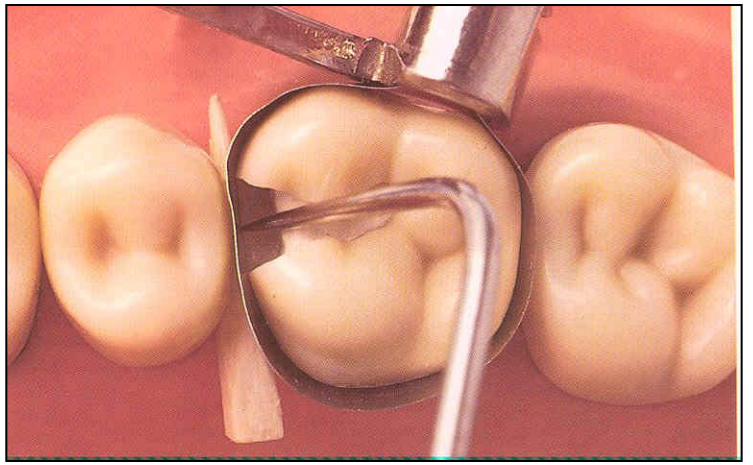








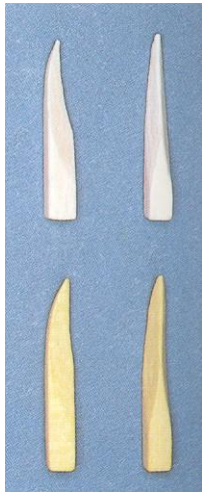




Wedges

- Wooden wedges

  - tighten the matrix band
  - compress the gingiva
  - separate the teeth



Wedging

- Slip the matrix band over the tooth (apical to the gingiva margin – 0,5, - 1 mm)
- Tighten the matrix, check it with probe
- Place a wedge
- Turn the retainer ¼ counterclockwise
- Contour the band

lroubal@med.muni.cz

Sapin

lroubal@med.muni.cz

Discoid-cleoid

Composites - indication

– Small – moderate cavities

- Good level of oral hygiene
- No heavy occlusal stress
- Dry operating field

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Preparation for adhesive materials – composites

- Not too bug extension for prevention (adhesion)
- No grooves
- No undercuts
- Rounded box
- Bevel the axial walls and the outer edge od the gingival wall
- Small isolated cavities are possible

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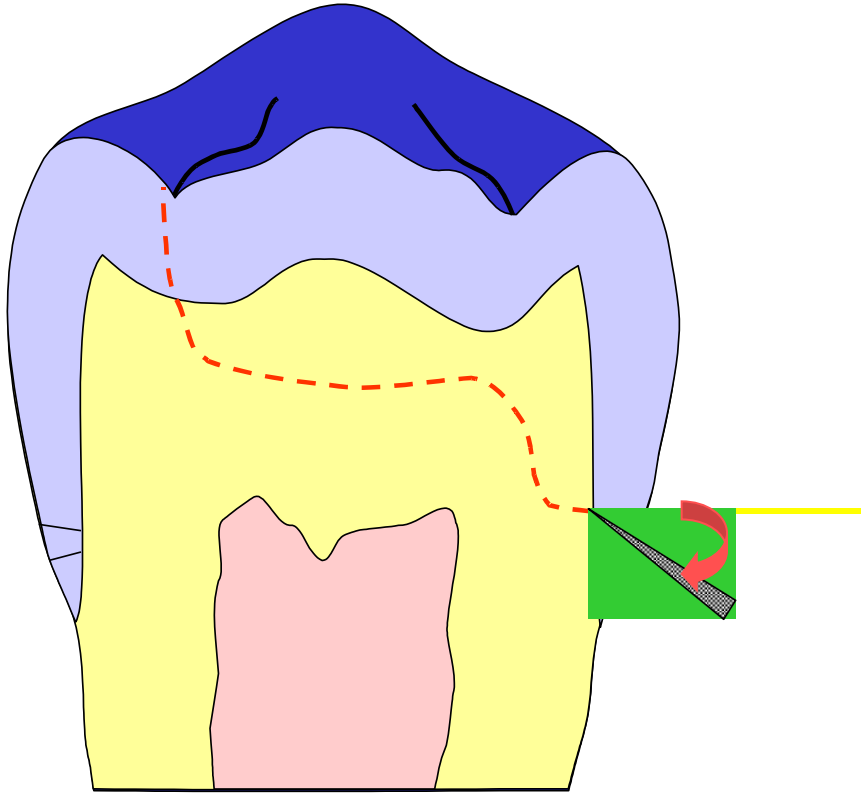
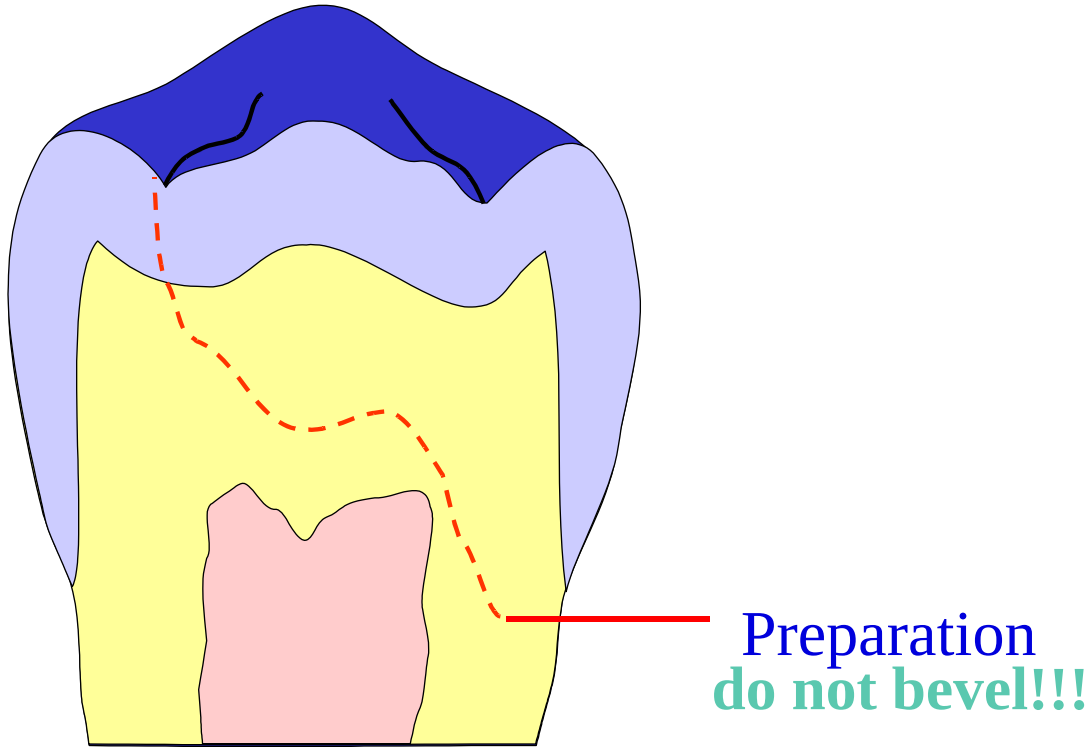
Cavity for amalgam

Cavity for composite

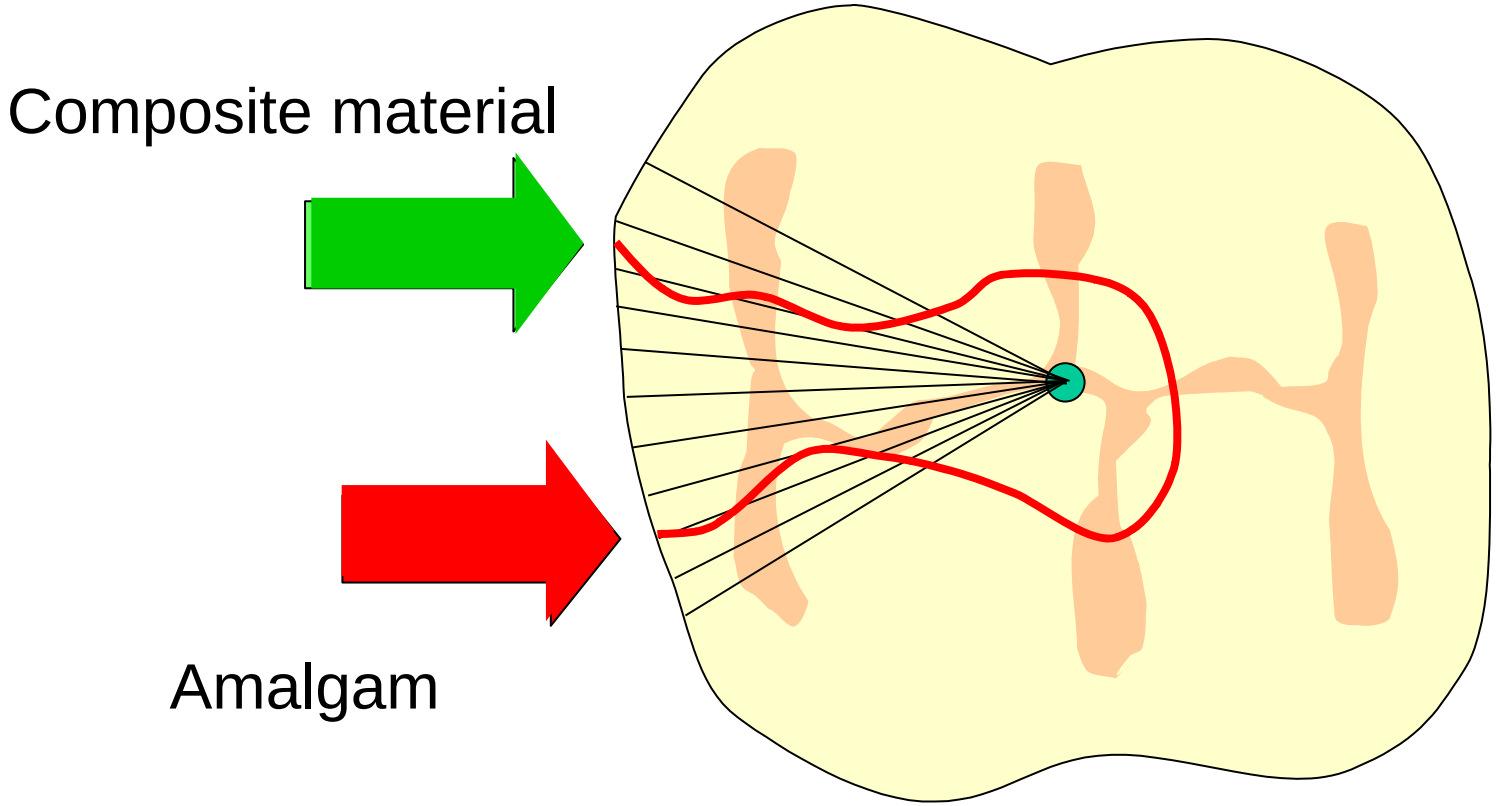
Bevel on the gingival wall



If out of enamel



Bevel of enamel on axial walls



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Matrices for composites in class II.

- Matrix band + matrix retainer (circular matrices – see above)

- Segmental matrix (sectional matrices) + separator

Forceps for handling

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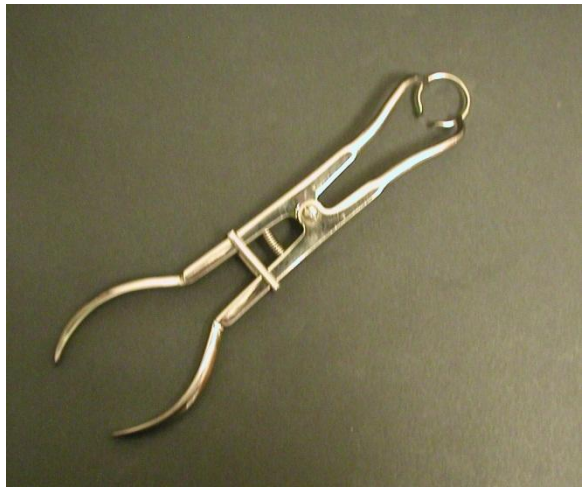
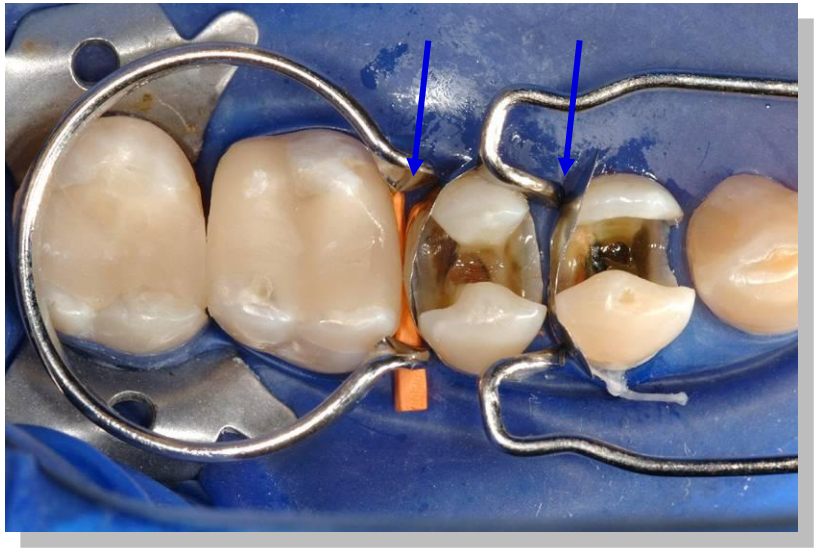
Composi-Tight 3D XR

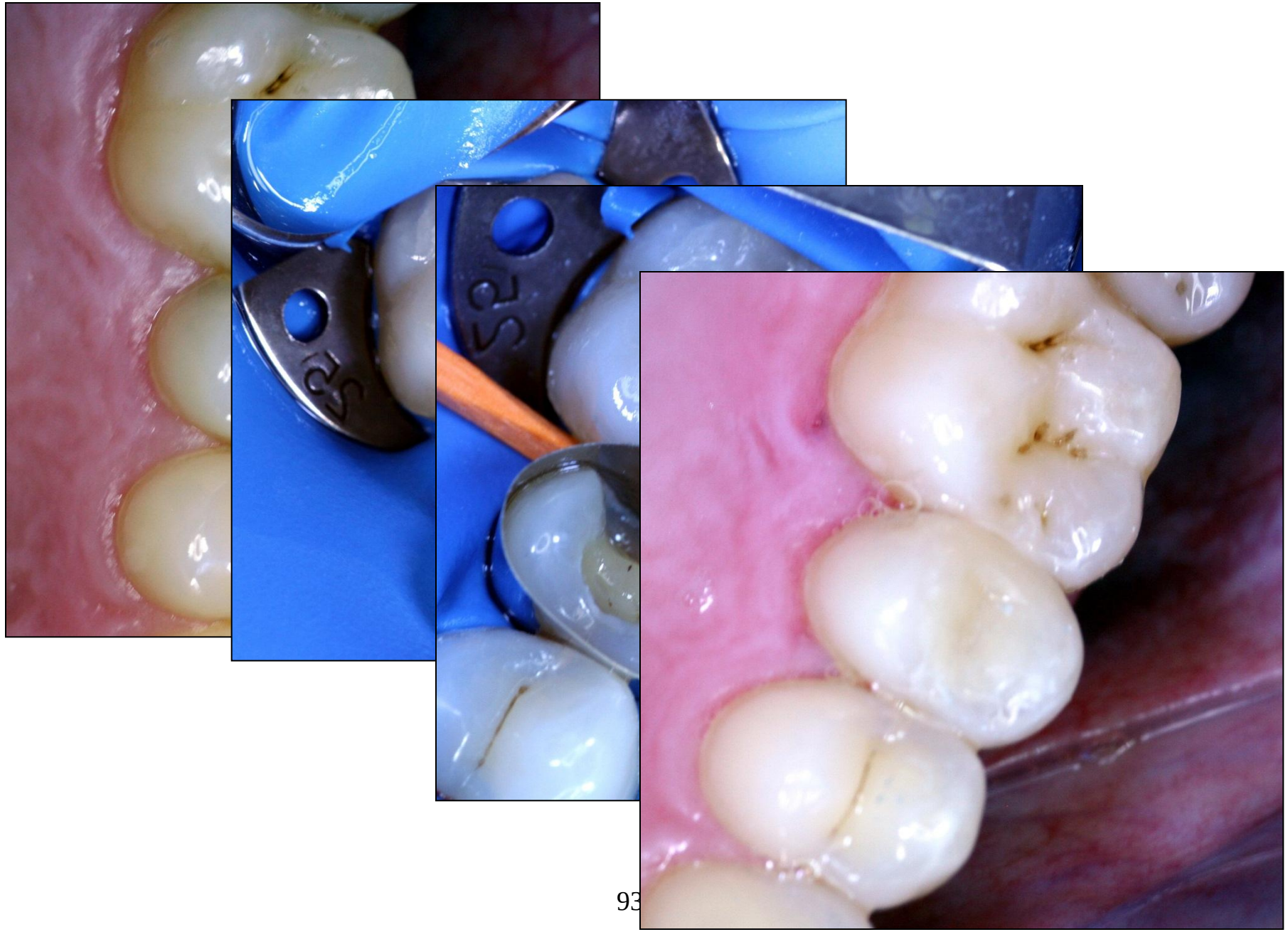


Sectional matrices

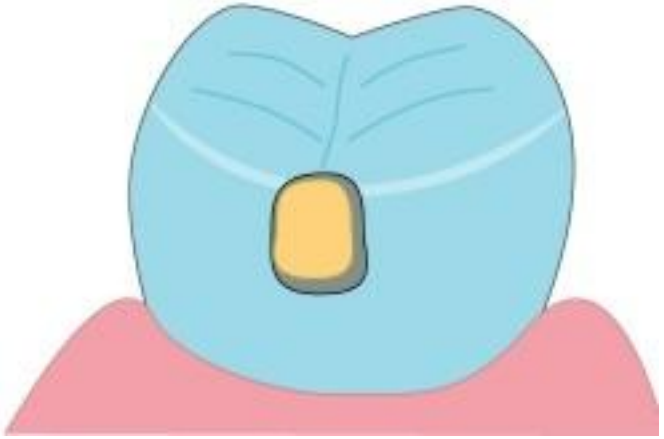


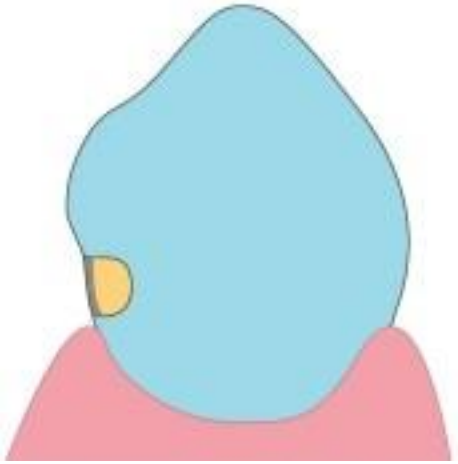
Sequence of operation

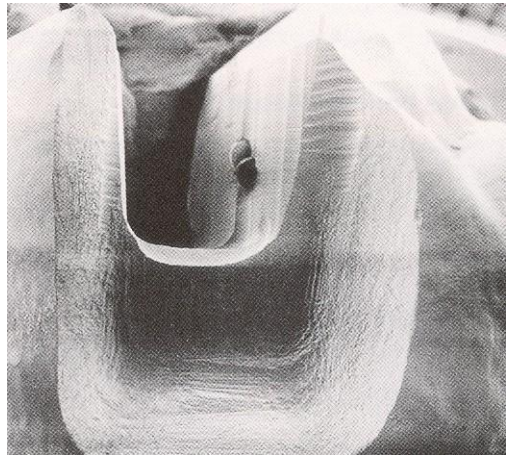
- Preparation
- Bevel the enamel on axial walls and outer edge of gingival wall (if located in enamel)
- Placement of the matrix
- Adhesive procedure (acid etching, washing, priming and bonding)
- Placement of the composite materiál layer by layer
- Curing
- Finishing and polishing



Alternative preparation – adhesive slot
Fissures are not involved







Tunnel preparation