Lesions in the cervical area of the tooth

DR. KÁROLY BARTHA

We know lesions caused by:

- Caries
- Abrasion
- Overload
- Erosion

- Caries
- Abrasion
- Overload
- Erosion

- Saliva
- Critical pH value
- Poor oral hygiene
- Good oral hygiene

- Caries
- Abrasion
- Overload
- Erosion

The *poor oral hygiene* can cause caries, if we found caries on the palatal cervical area of upper molars it indicates very poor oral hygiene

The *good oral hygiene* extend the life-time of teeth in the mouth. So the risk of dental caries is higher.

At age 65 approximately 75% have evidence of root surface caries.

The use of fluoride toothpaste reduces both enamel and root surface caries. The reduction is about 40%.

In the cervical area we know two types of dental caries

- **Class V. caries**

  Cavities beginning in the gingival thirds of buccal and oral surfaces of all teeth, excluding pits and fissures

- **Root surface caries**

  Cavities beginning on the root surface covered by cementum

Class V. caries

The prepared cavity is surrounded with enamel

Root surface caries

The cavity is surrounded with enamel and cementum

Is it so simple?

Dental Caries

The Disease and its Clinical Management

Edited by
Ole Fejerskov and Edwina Kidd

Blackwell
Munksgaard

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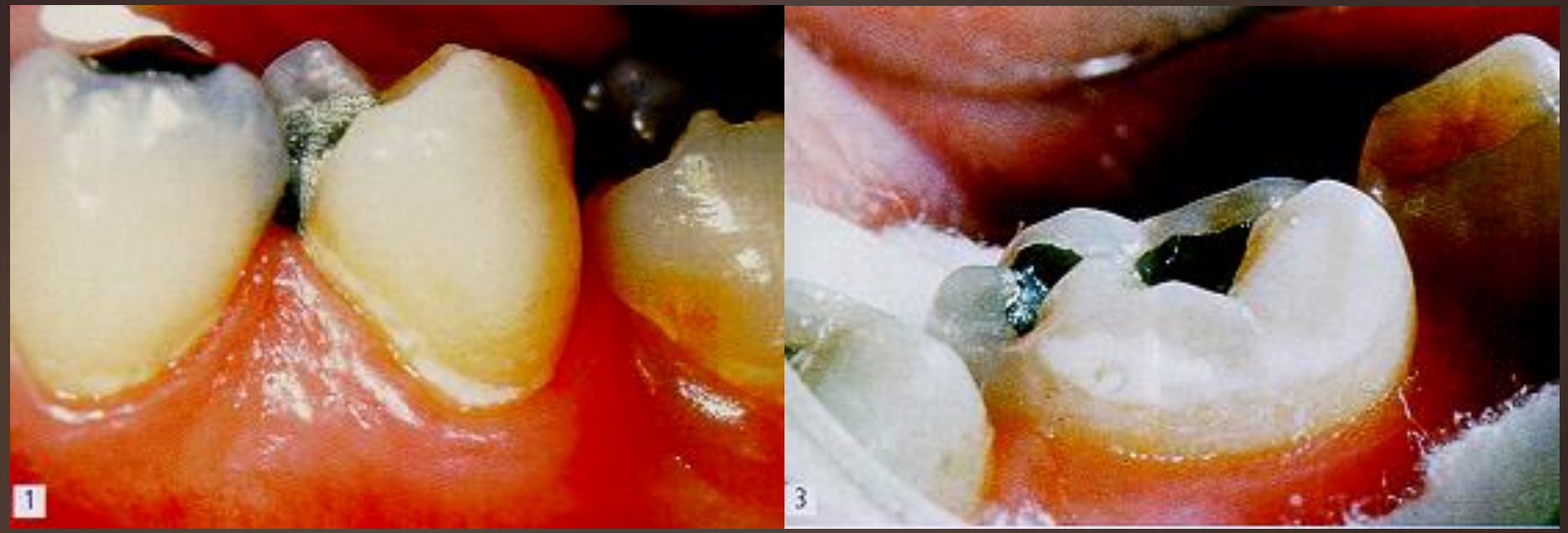
Lesion covered by dental plaque

Plate 7.1 Lower canine and incisor (a) before and (b) after plaque removal. removed with an explorer.

White spot lesion



The role of orthodontic therapy

Impaired enamel maturation

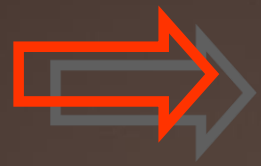
Active lesion

Types of dental caries:

- Active lesion
- Inactive lesion

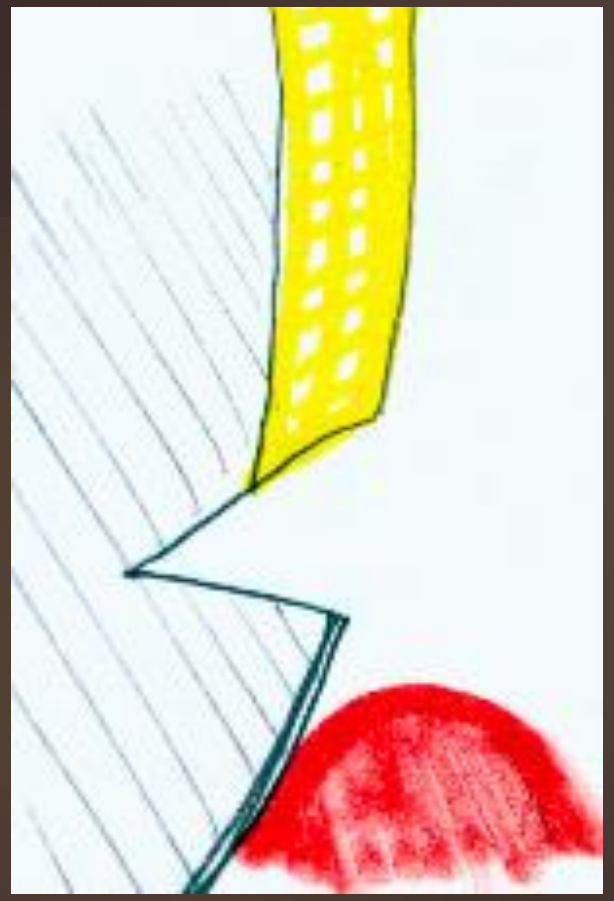
Active cavitated lesions filled with dental plaque are shown in part 5. The dark brown appearance of the lesion is the result of discoloration of the softened dentin. This is obvious when most of the dental plaque is removed with a toothbrush, as in part 6.

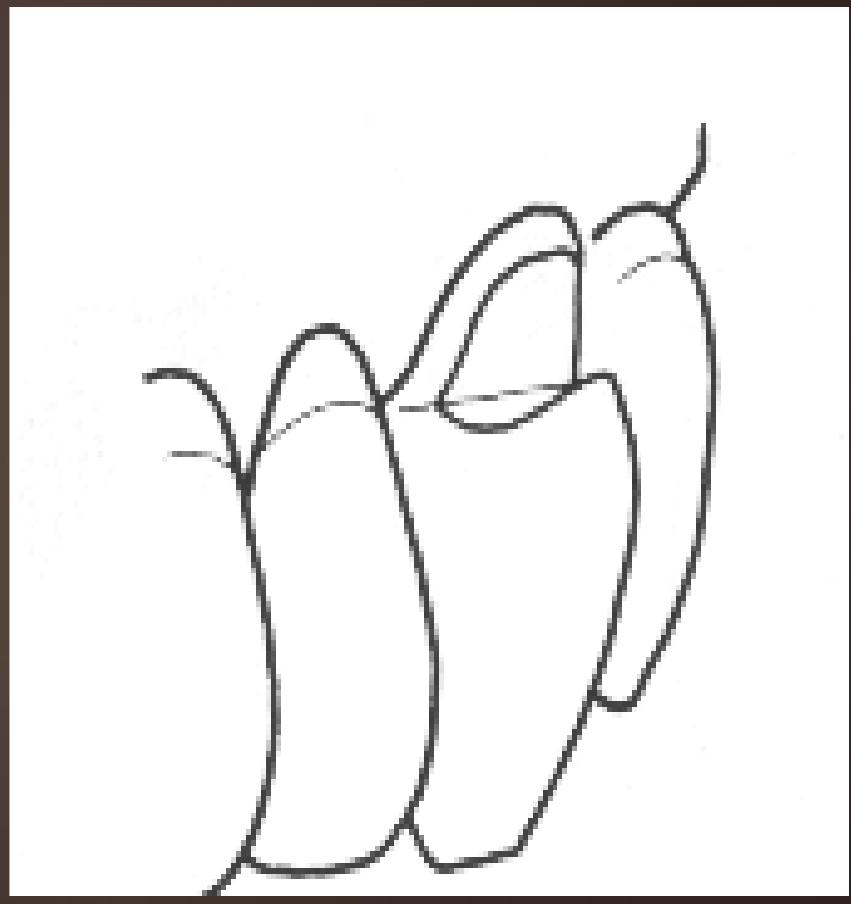
- Caries
- Abrasion
- Overload
- Erosion



Too hard toothbrush, wrong tooth brushing techniques too abrasive toothpaste could damage the tooth

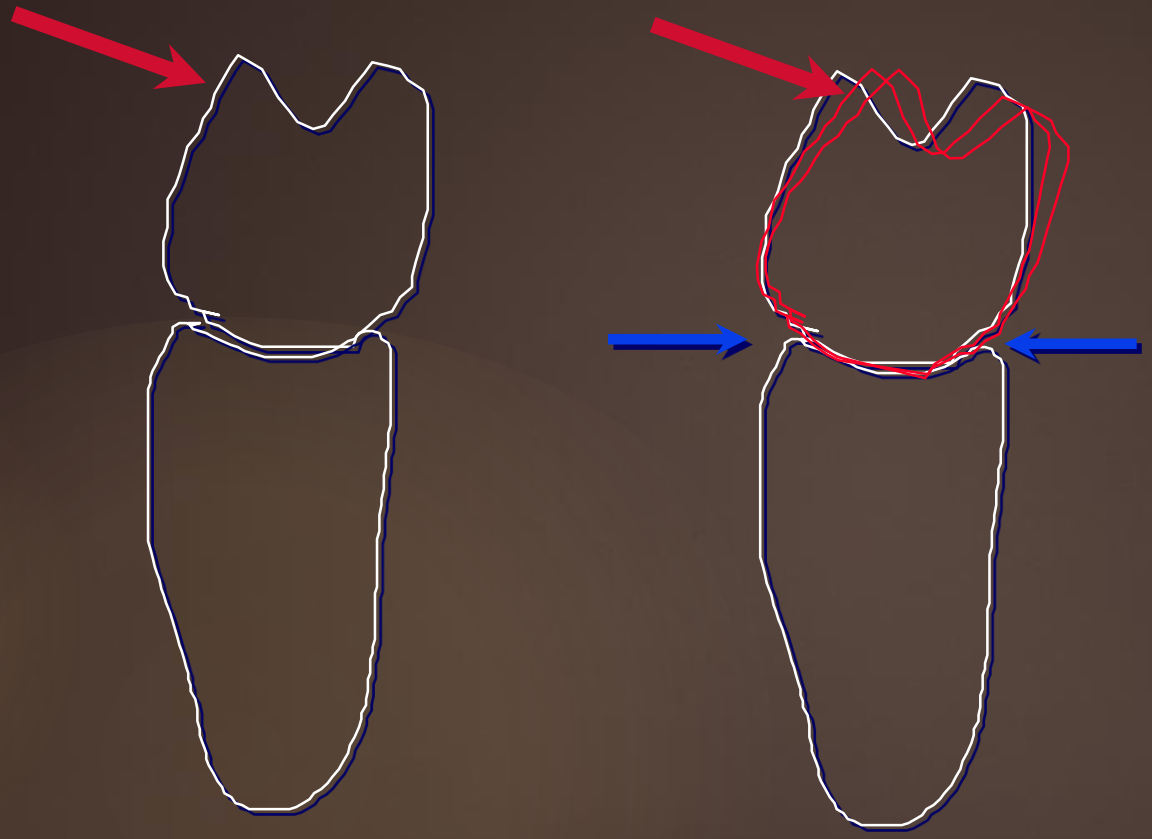
The V-shaped lesion





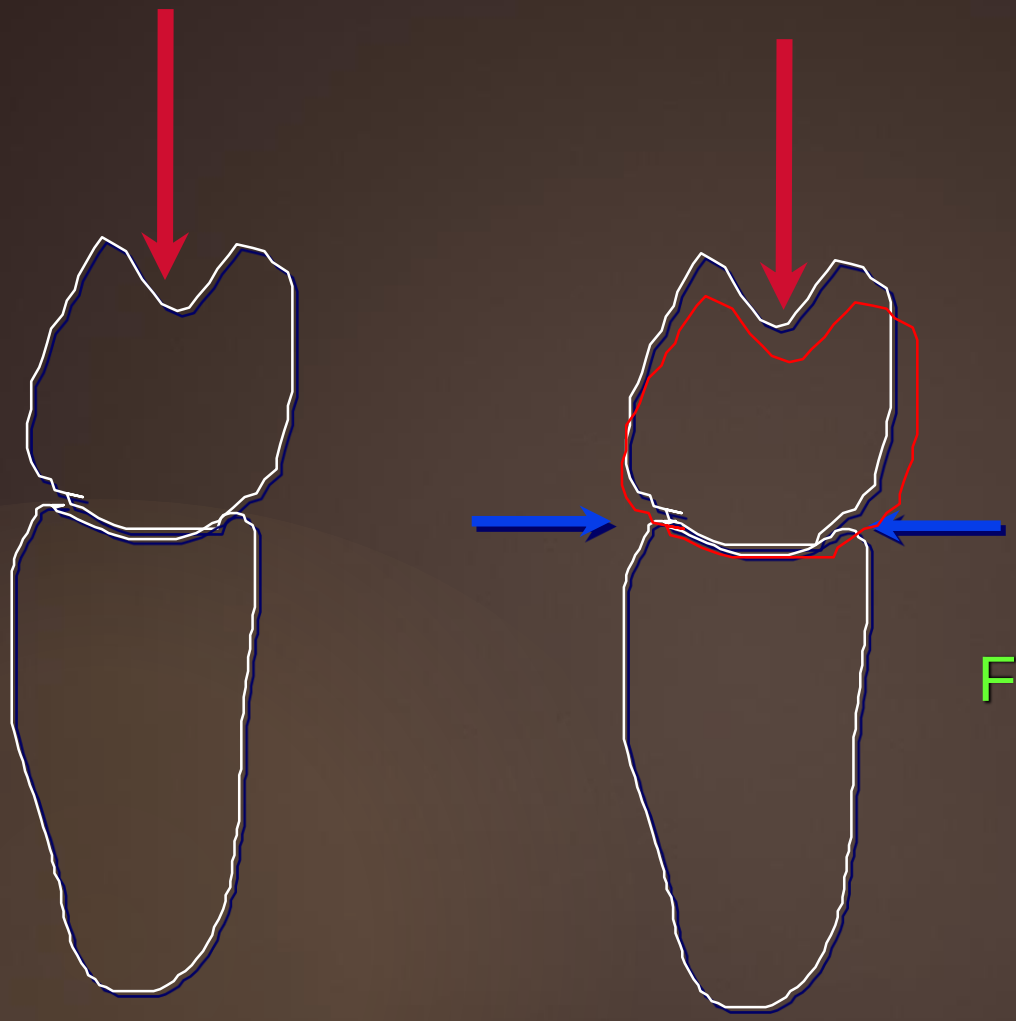
- Caries
- Abrasion
- Overload
- Erosion

The overload e.g. the bruxism can damage the cervical area of the tooth because the tooth is flexible.
The crown could move considering the root.



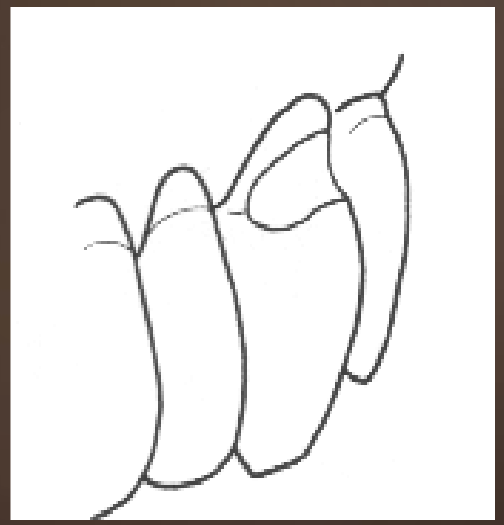
The loading causes first gaps then the enamel-prisms brake out

V-shaped lesion



Flat saucer-shaped lesion

- Caries
- Abrasion
- Overload
- Erosion



Caused by acids which can dissolve the hard tissues (e. g. gastric acid in case of reflux, coke)

Flat saucer-shaped lesion

What are the complaints of the patient?

Sensitivity on:

- sweetness
- salt
- cold
- warm
- touch

What will be our therapy?

- In existence of sensitivity
  - *we eliminate or reduce it*
- In existence of caries
  - *observation?*
  - *remineralization?*
  - *restoration?*

The sensitivity can be reduced using special toothpaste

Advantages

- made at home by the patient
- simple method

Disadvantages

- this toothpaste is expensive
- effective only after some time
- the effect may be temporary and uncertain

In the consulting room

Against sensitivity

- (fluoride)varnish
- bonding systems of composite restoratives
- light-cured filled resin (Seal and Protect /DeTreyDentsply)
- glass ionomer cement

Remineralization

Remineralization and Observation

Root surface caries

Plate 5.7 Root-surface caries.
Parts 1–4 show non-operative treatment of active cavitated root caries lesions on the buccal surfaces of the lower first and second premolars and examples of the effect of preventive non-operative treatment. The illustrations depict the clinical appearance of the lesions after 2, 4 and 10 years. Successful treatment was achieved through careful daily plaque removal with a fluoride toothpaste. After 4 years an overhanging rim of unsupported enamel at the occlusal aspect of the lesion was removed to facilitate cleaning.

Restoration is indicated when:

- Hypersensitivity is persistent
- The lesion reaches into the dentin
- The pulp is endangered
- The lesion is progressing (this decision requires an observation period of months)
- There are esthetic reasons

We make restorations:

- *With cavity preparation*

  The amalgam filling needs macro retention, the correct cavity is necessary

- With minimal-invasive preparation

  Some preparation is possible depending on the used restorative material

- Without cavity preparation

  Only cleaning

Restorative materials

- Dental amalgam
- Glass ionomer cements (self or light cured)
- Composite resins
- Flow composites
- Compomers
- Flow compomers

The extension of an amalgam filling

Amalgam filling

The cavity is prepared for macro retention

Glass ionomer cement filling (self cured)

Preparation in case of caries:

- margins are not beveled
- without macro retention
- carious dentin is removed with a steel bur

Conditioning – polyacrylic-acid

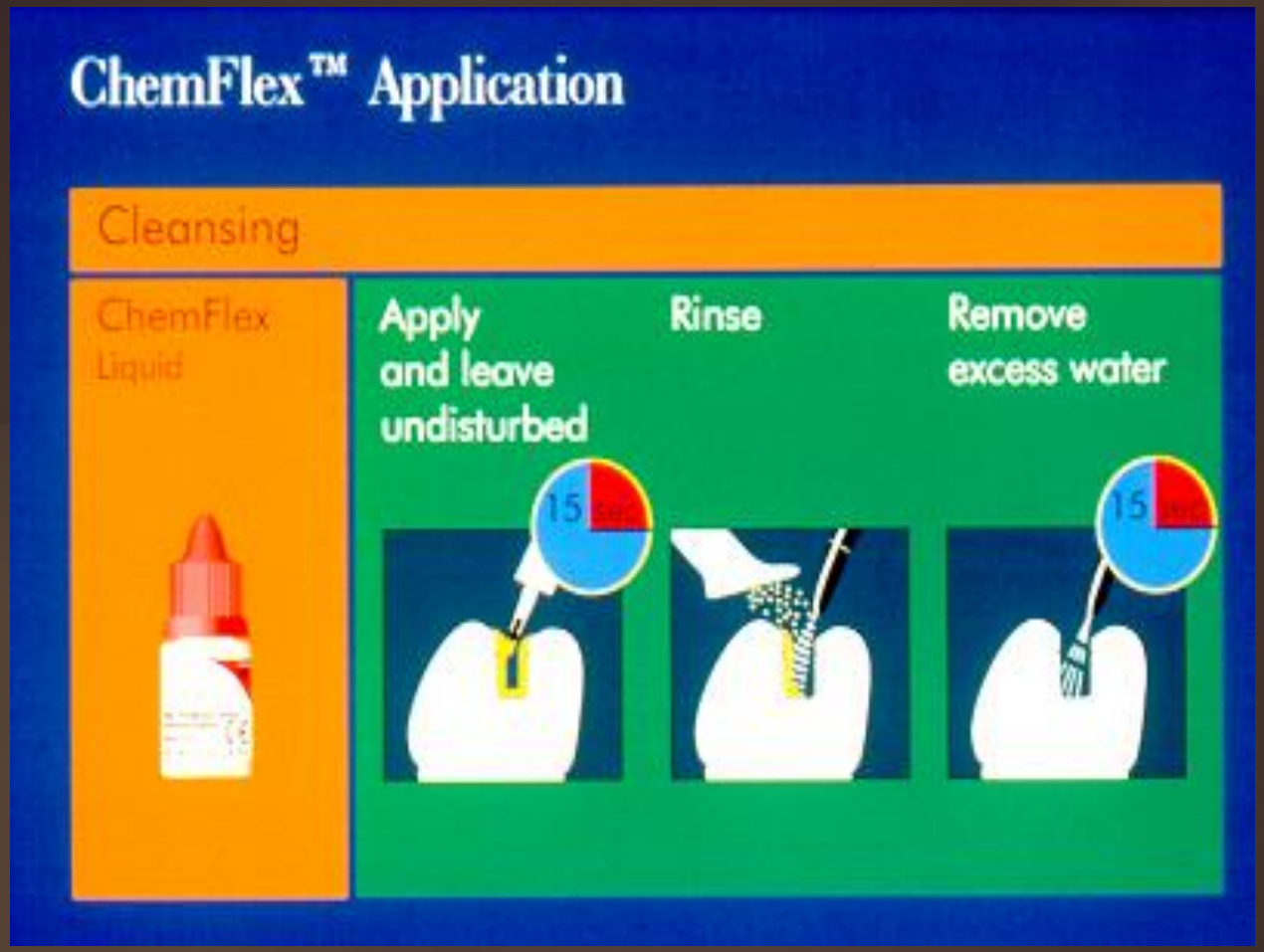
The inserted material is sensitive to water - Varnish

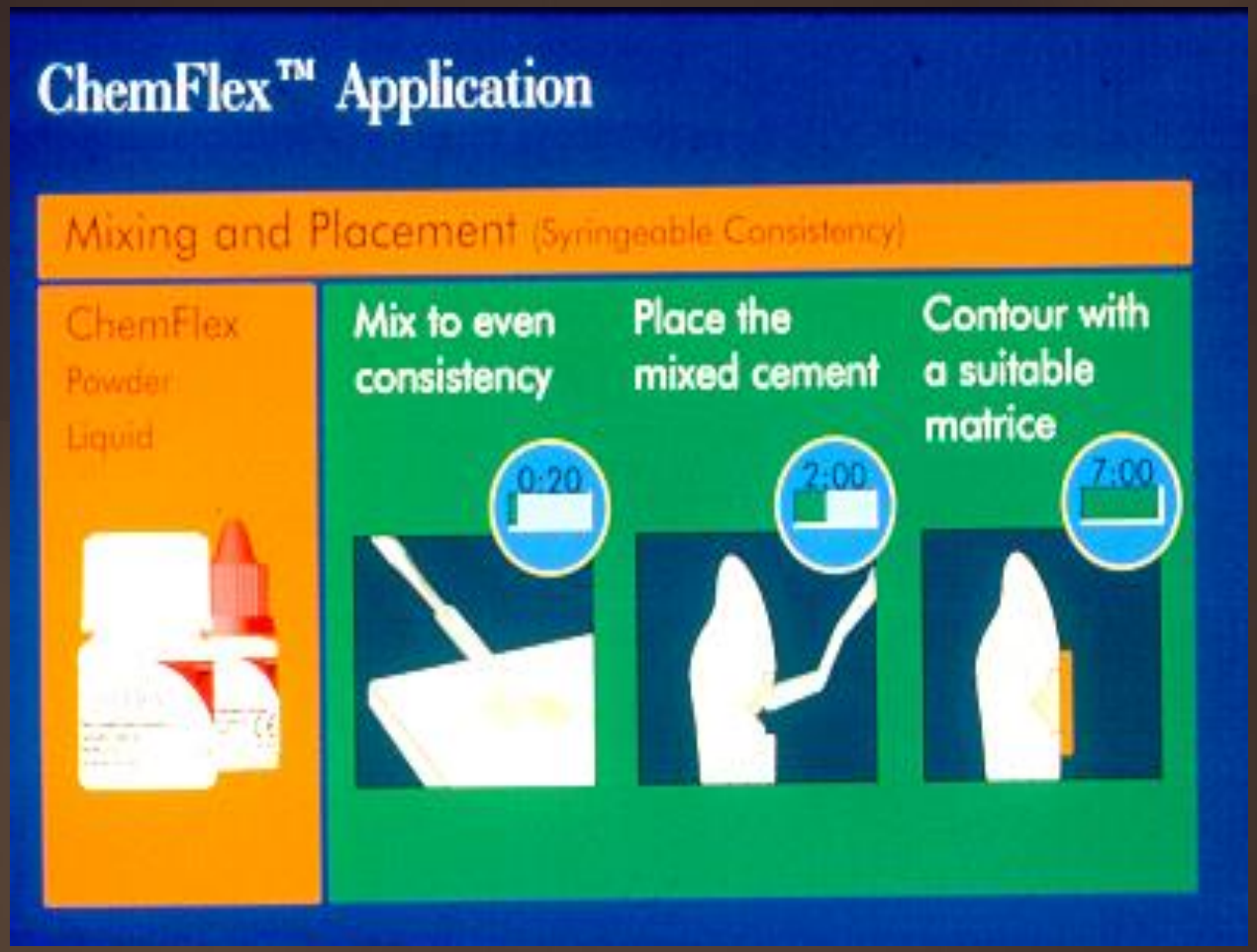
After setting - finishing and polishing

Varnish


ChemFlex
ChemFlex


ChemFlex™
Indications
• Class III, V
• Class I, II in deciduous teeth
• Fissure fillings (minimal Class I)
• Base / Core-build-up
• Class I, II long term temporary restorations*
• Atraumatic Restorative Treatment (ART) technique*
* Use condensable consistency only


ChemFlex™ Application
Cleansing
ChemFlex
Liquid
Apply
and leave
undisturbed
Rinse
Remove
excess water
15 sec
15 sec


ChemFlex™ Application
Mixing and Placement (Syringeable Consistency)
ChemFlex
Powder
Liquid
Mix to even consistency
0:20
Place the mixed cement
2:00
Contour with a suitable matrice
7:00

ChemFlex™ Application

Finishing and Protection

ChemVarnish

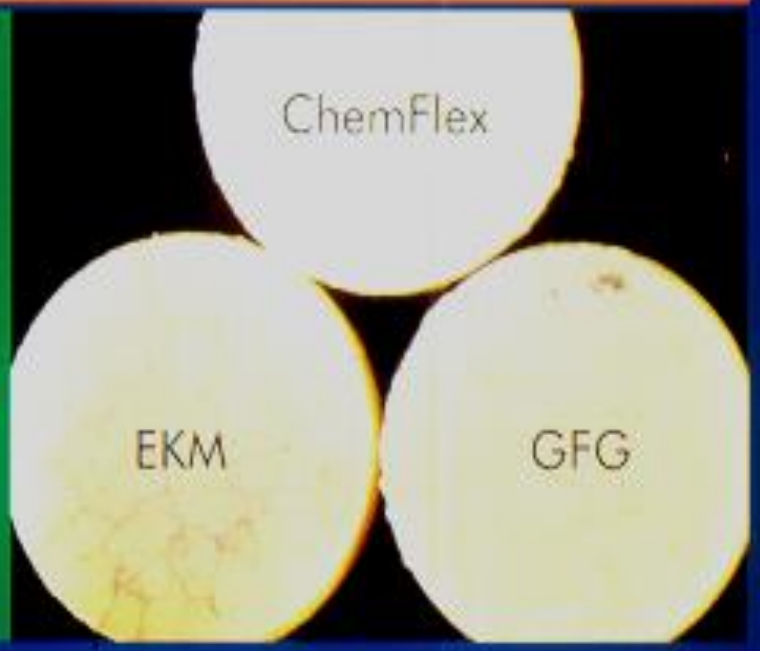
Do not start finish before complete set

Finally apply varnish

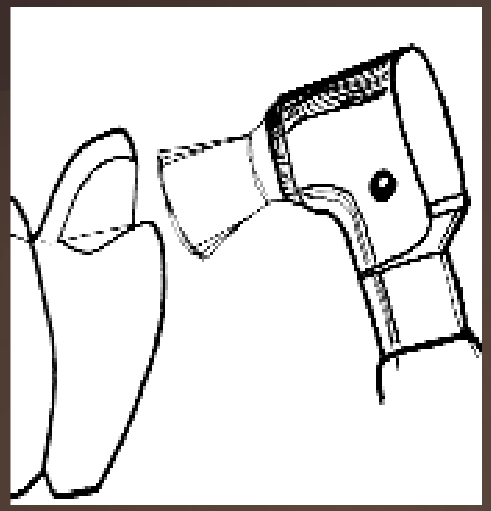
ChemFlex™

Dehydration

- use of varnish immediately after placing is not necessary
- finishing under water spray may be done immediately after setting

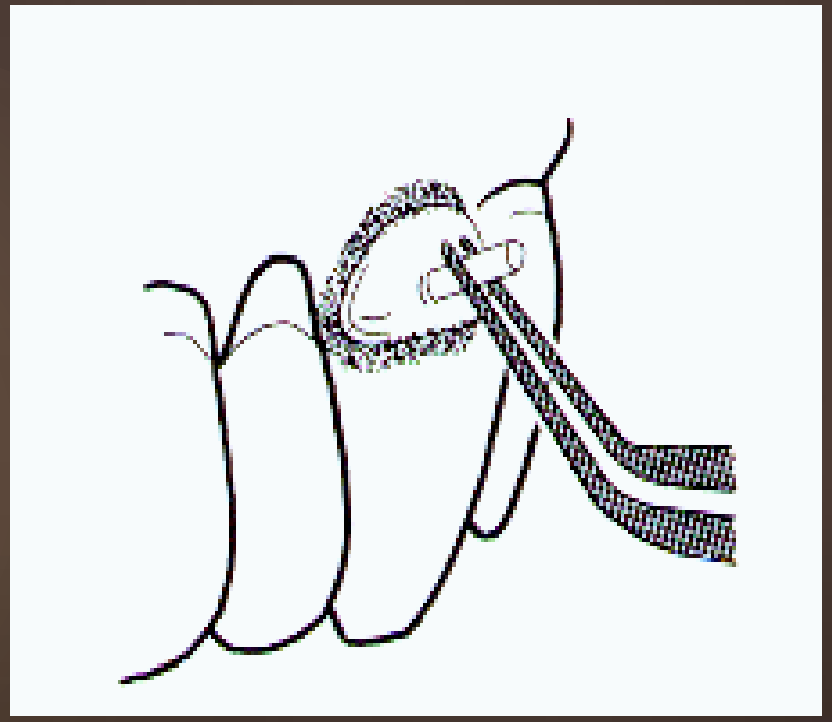


Glass ionomer cement filling in case of abrasion



Cavity preparation isn’t necessary. The removal of organic material with pumice is followed by washing and drying.

The use of a transparent matrix to protect the glass ionomer cement at the setting time against moisture.



Glass ionomer cement filling (light cured)

Preparation in case of caries:

- margins are not beveled
- without macro retention
- carious dentin is removed with a steel bur

Conditioning or using its own bonding system

Inserting the material then Light curing

Finishing and polishing

Gloss or Varnish

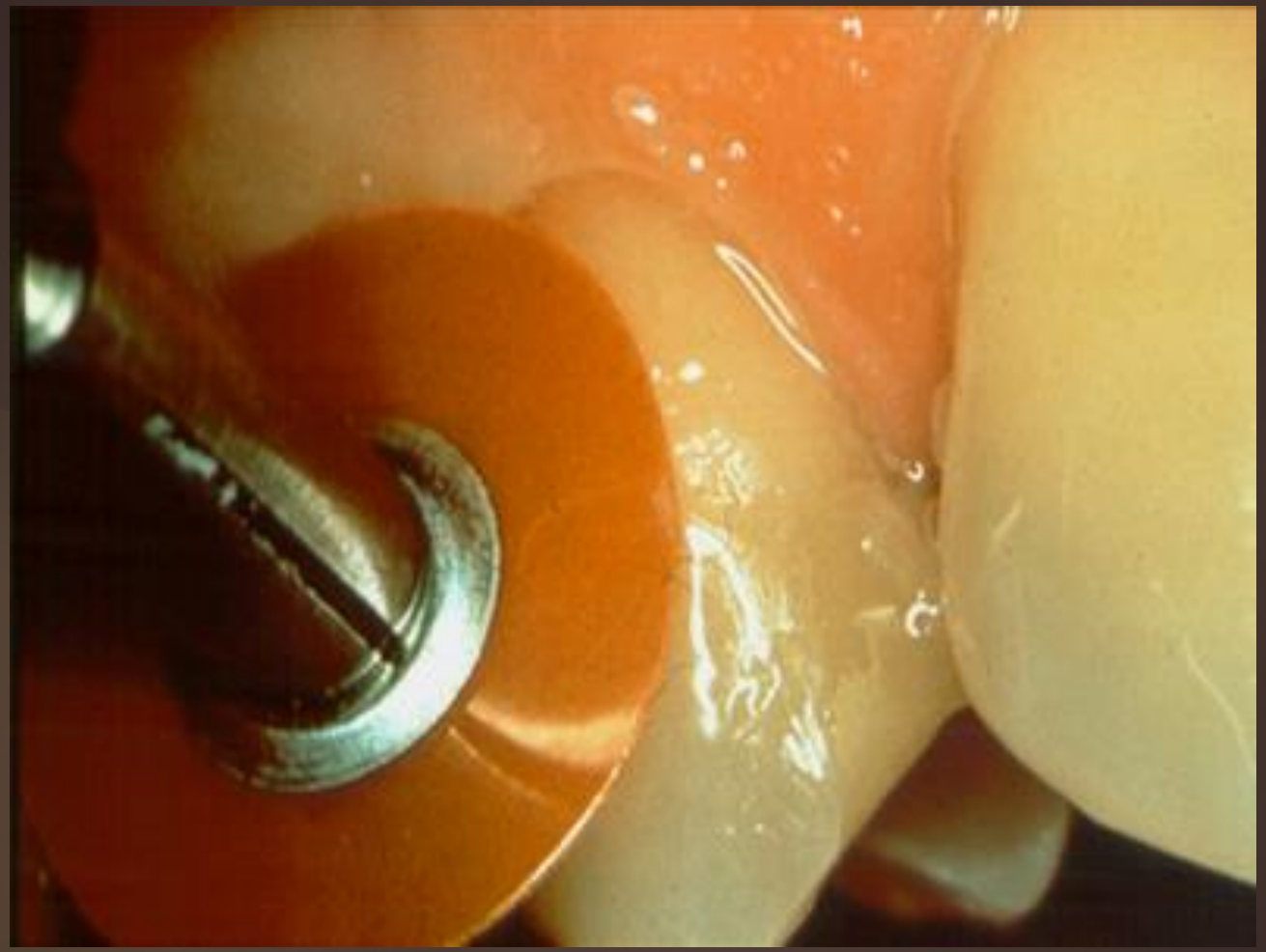
3M Vitremer (Three-way cure material)


3M Vitremer™
Primer
30 s.

Vitremer™ Primer

COMPOSITION

- Vitrebond Copolymer
- HEMA
- Ethanol
- Photoinitiators




3M Vitremer
Gloss
20 s.


R.L. ERICKSON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GC Fuji II LC CAPSULE
1 CAPSULE
GC CORPORATION
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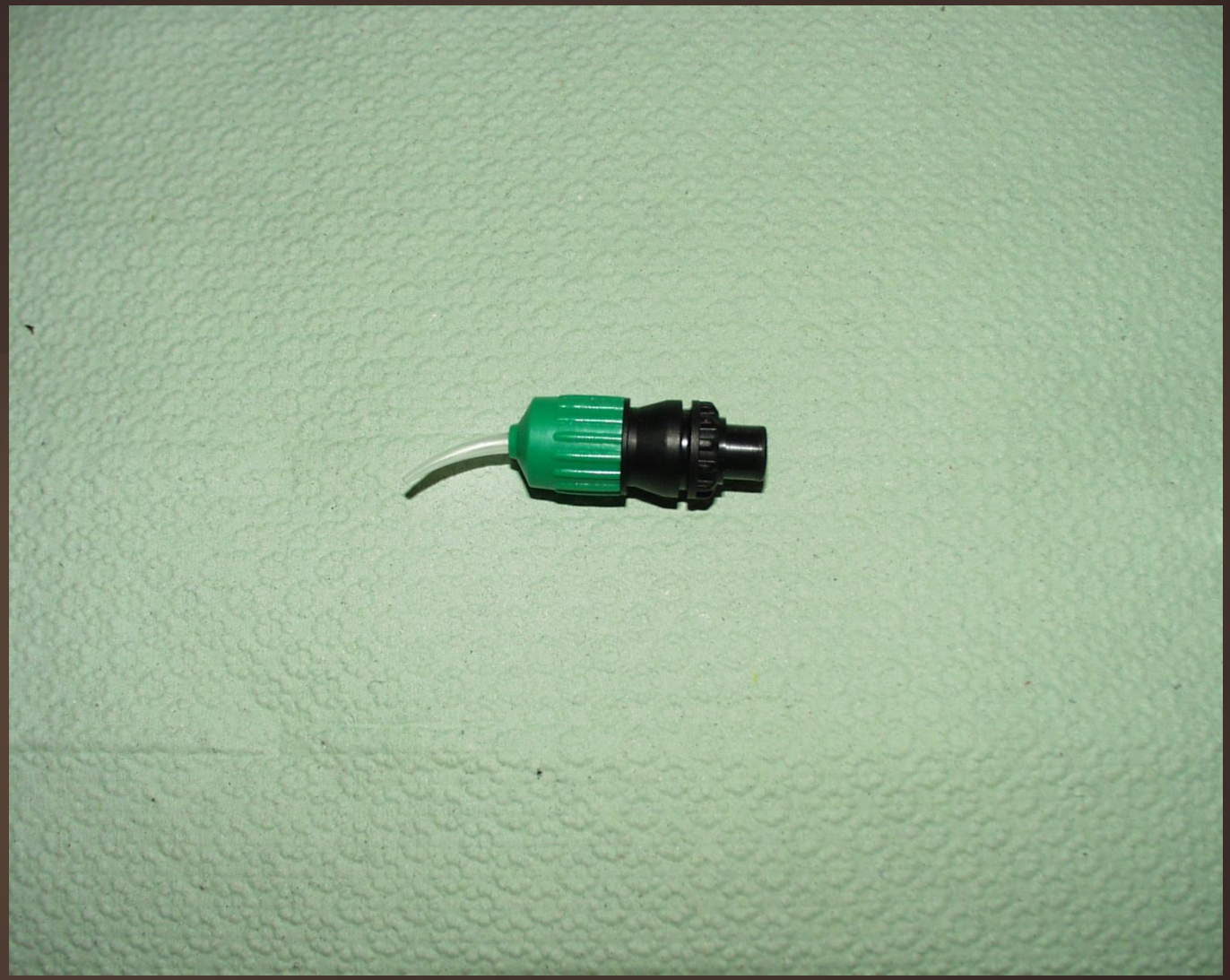
EXP 2005-10

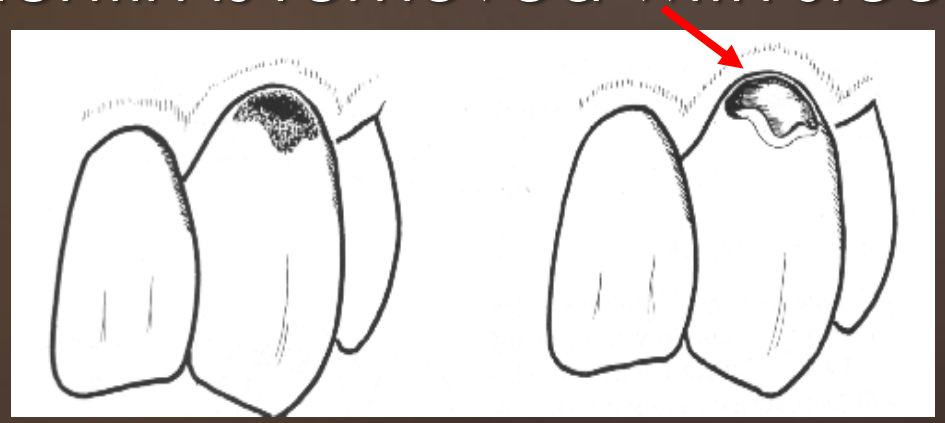


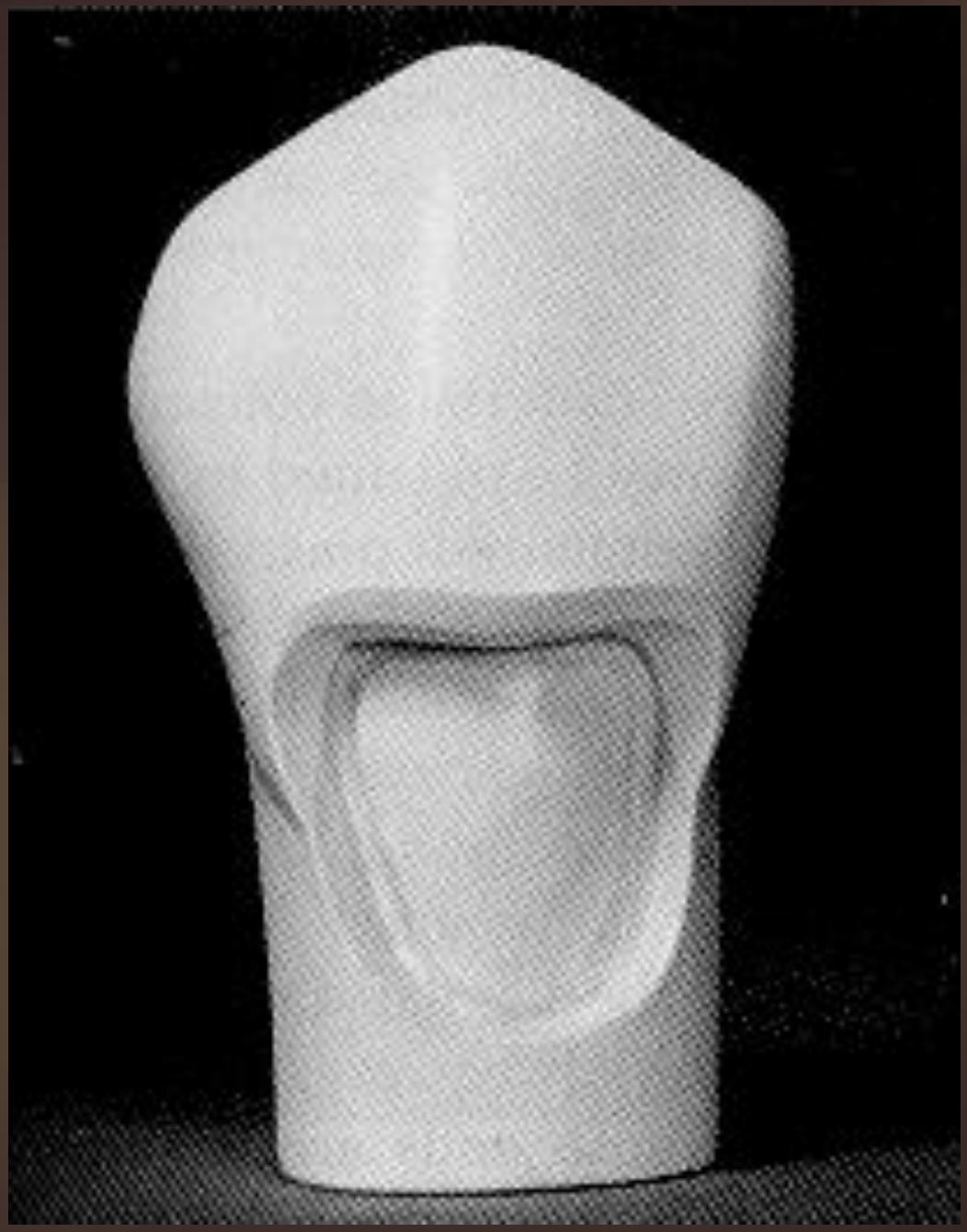

KETAC-FIL
KETAC-SILVER
ESPE
CAPMIX
start
00
7
8
9
15s
4
5
6
10s
1
2
3
0
ASSORTED

Composite filling

Preparation:

- beveled margins
- without macro retention
- carious dentin is removed with steel burs

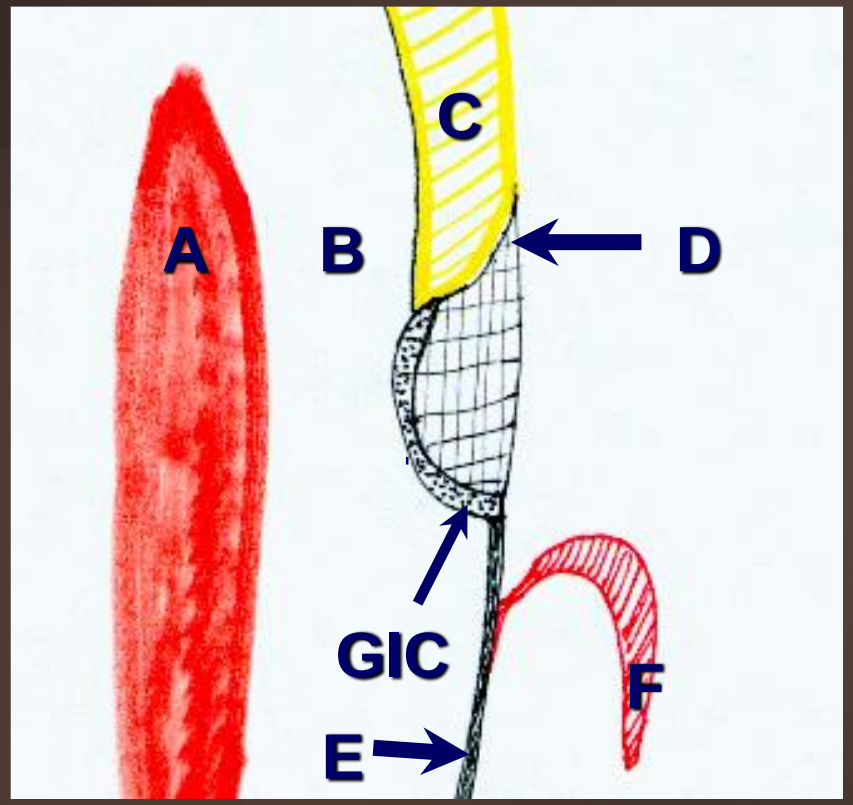


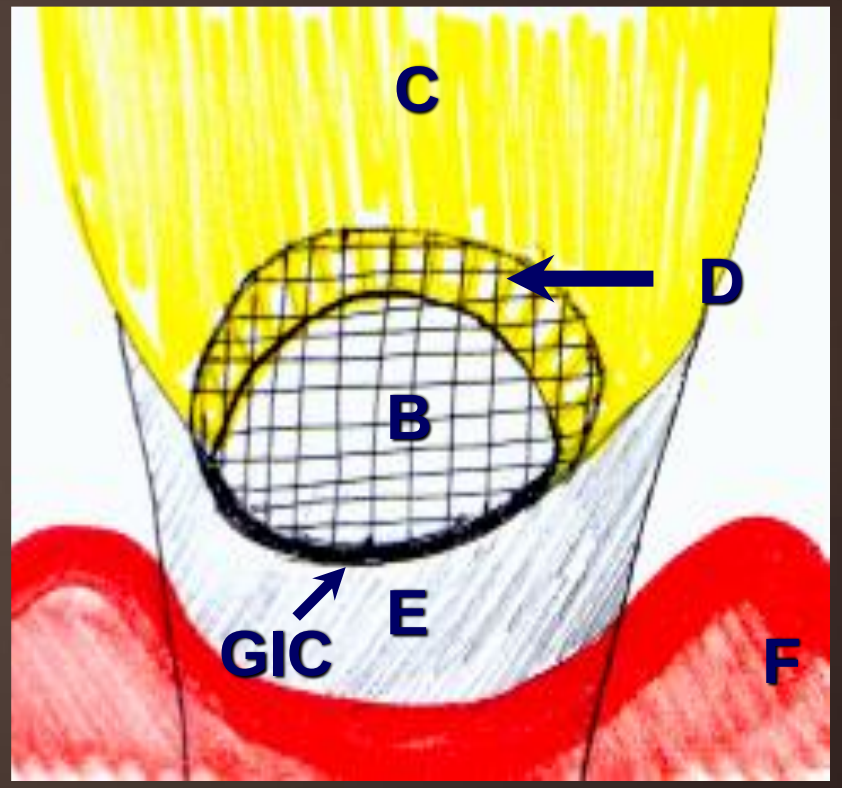


Composite filling – the steps

- Choosing the color
- Cavity-preparation
- Isolation
- (Base)
- Etching / bonding
- Filling the cavity (flow, increment technique)
- Polymerization
- Finishing and polishing

Composite resin restoration with a glass ionomer base





Compomer filling (Dyract AP)

- Without beveled margins

  using the bond system (P&B 2.1, NT)
- With beveled margins - with etching

  similar to composite fillings
- With beveled margin - without etching

  using NRC solution and P&B NT

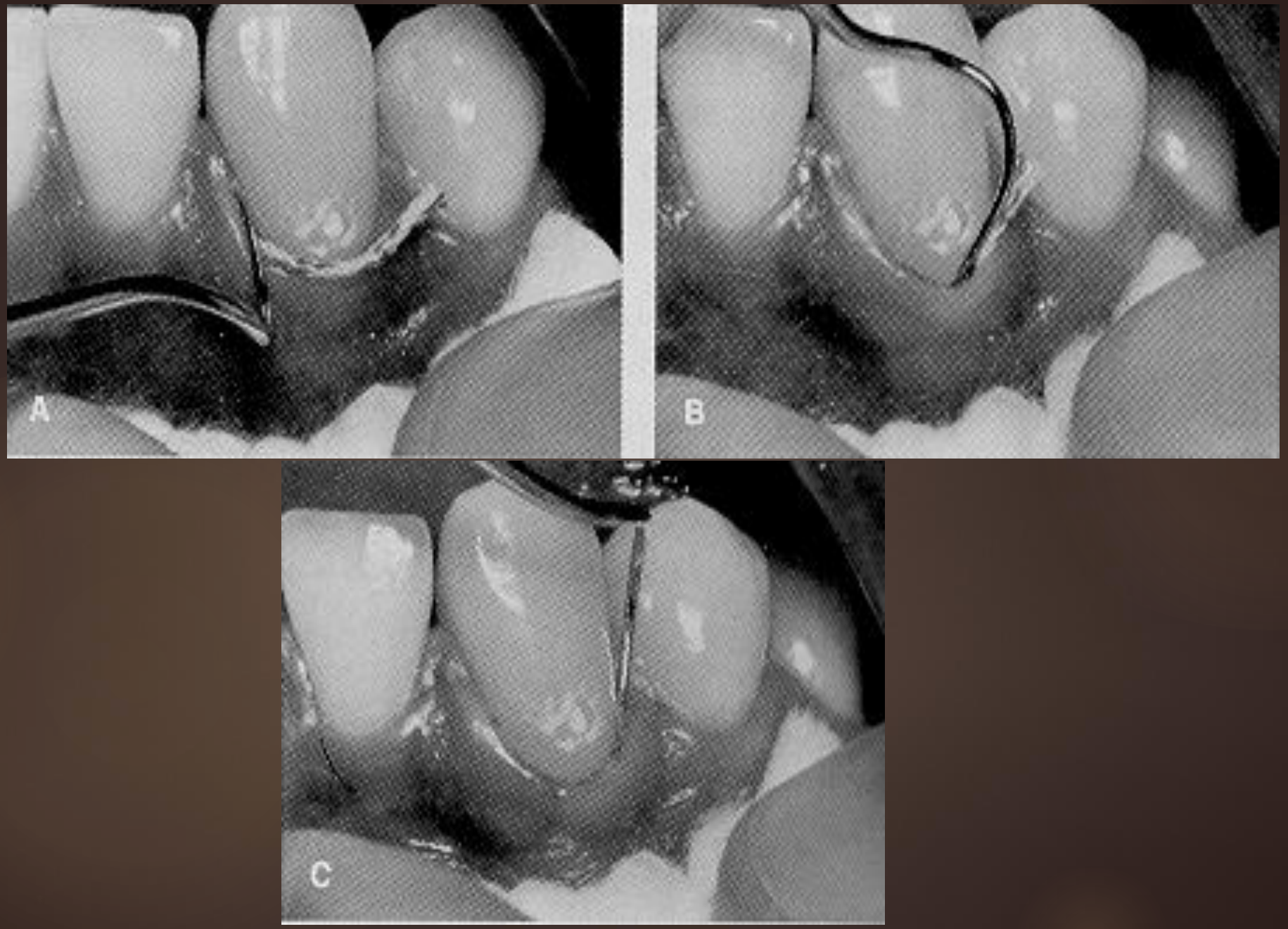

DENSPLY
DeTrey
Dyract AP
DyractAP

Az F2000 (3M) kompomer

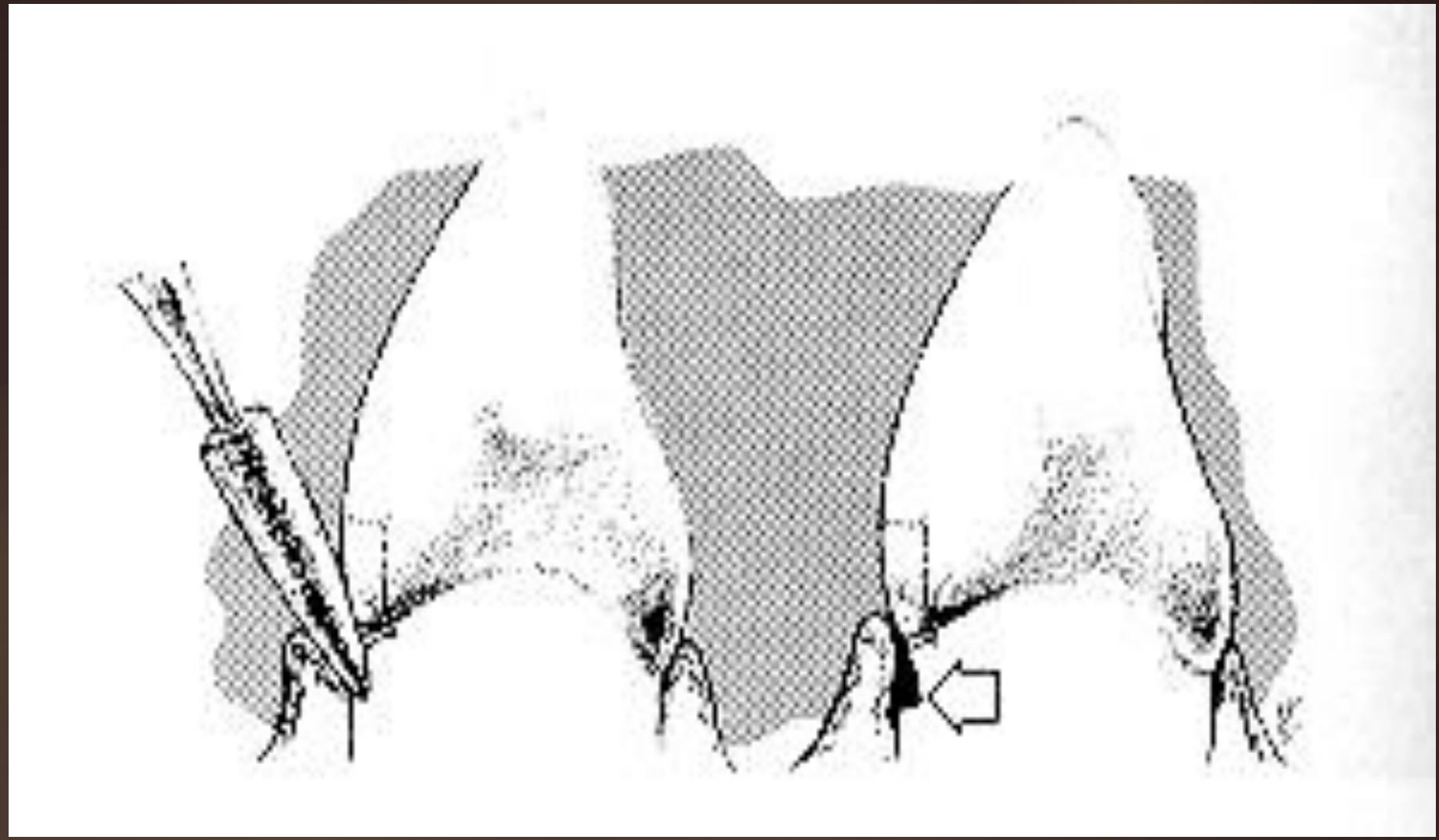
Restorations using flowable materials (composite resins or compomers)

E. g. by flat saucer-shaped lesions.

- Difficult to use
- Lower wearing-resistance than by composite resins

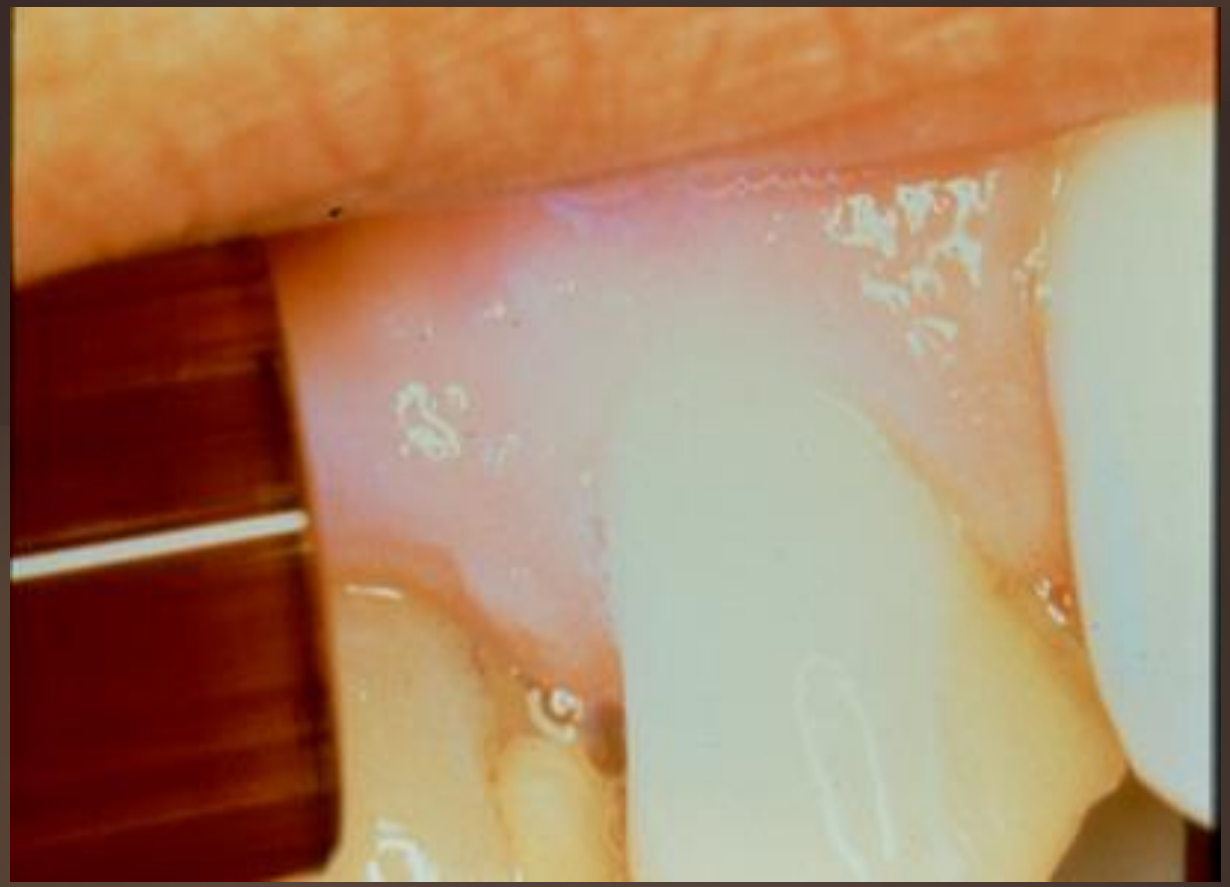

A
B
C

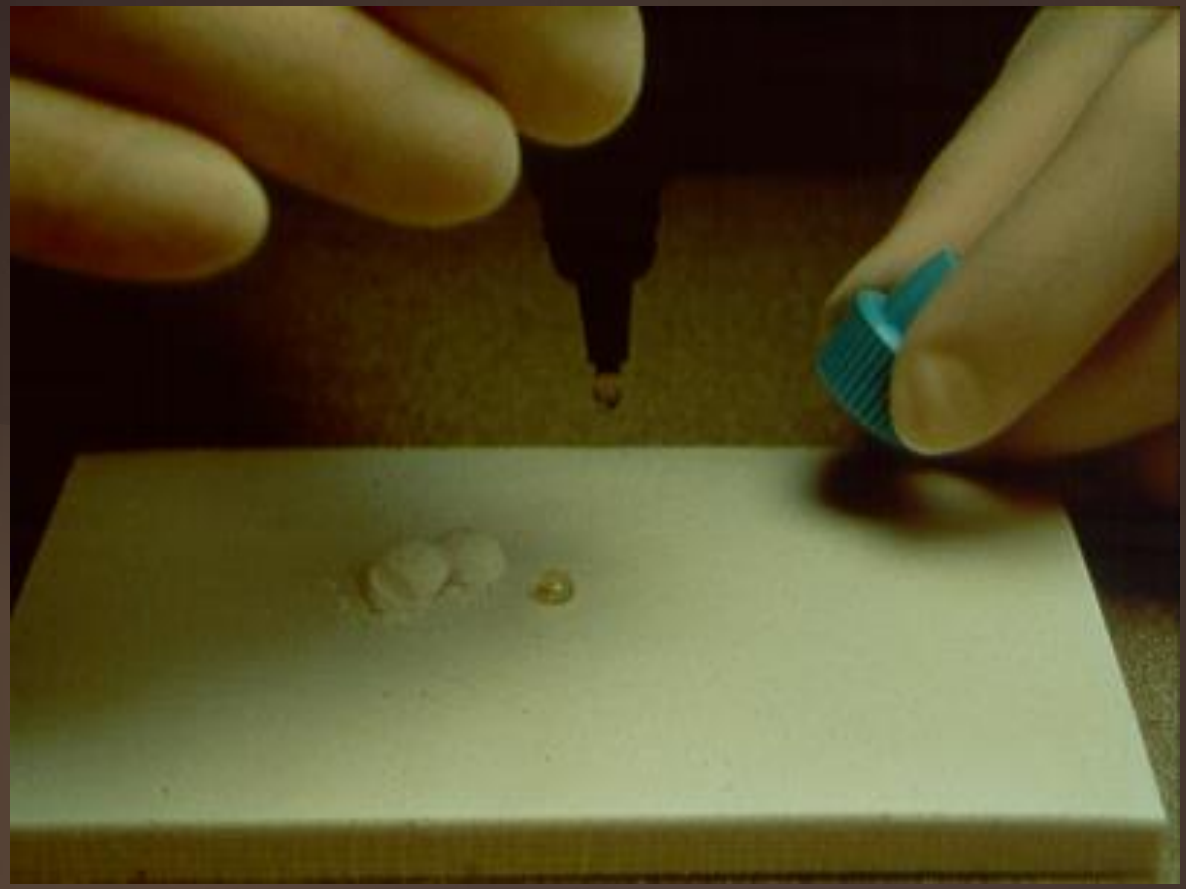

B

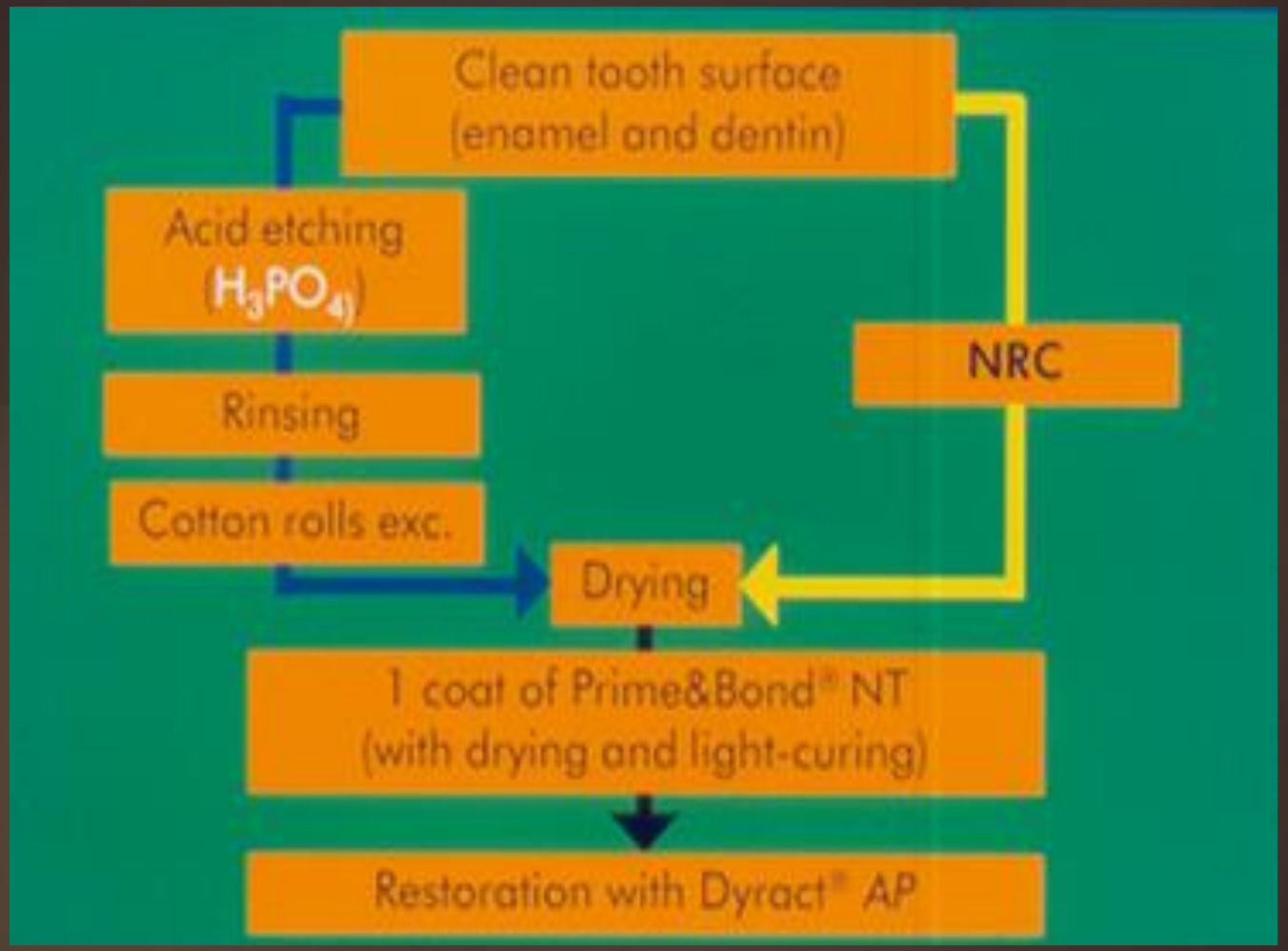


Thank you for your attention!


R.L. ERICKSON






Clean tooth surface
(enamel and dentin)
Acid etching
(H_3PO_4)
Rinsing
Cotton rolls exc.
NRC
Drying
1 coat of Prime&Bond® NT
(with drying and light-curing)
Restoration with Dyract® AP