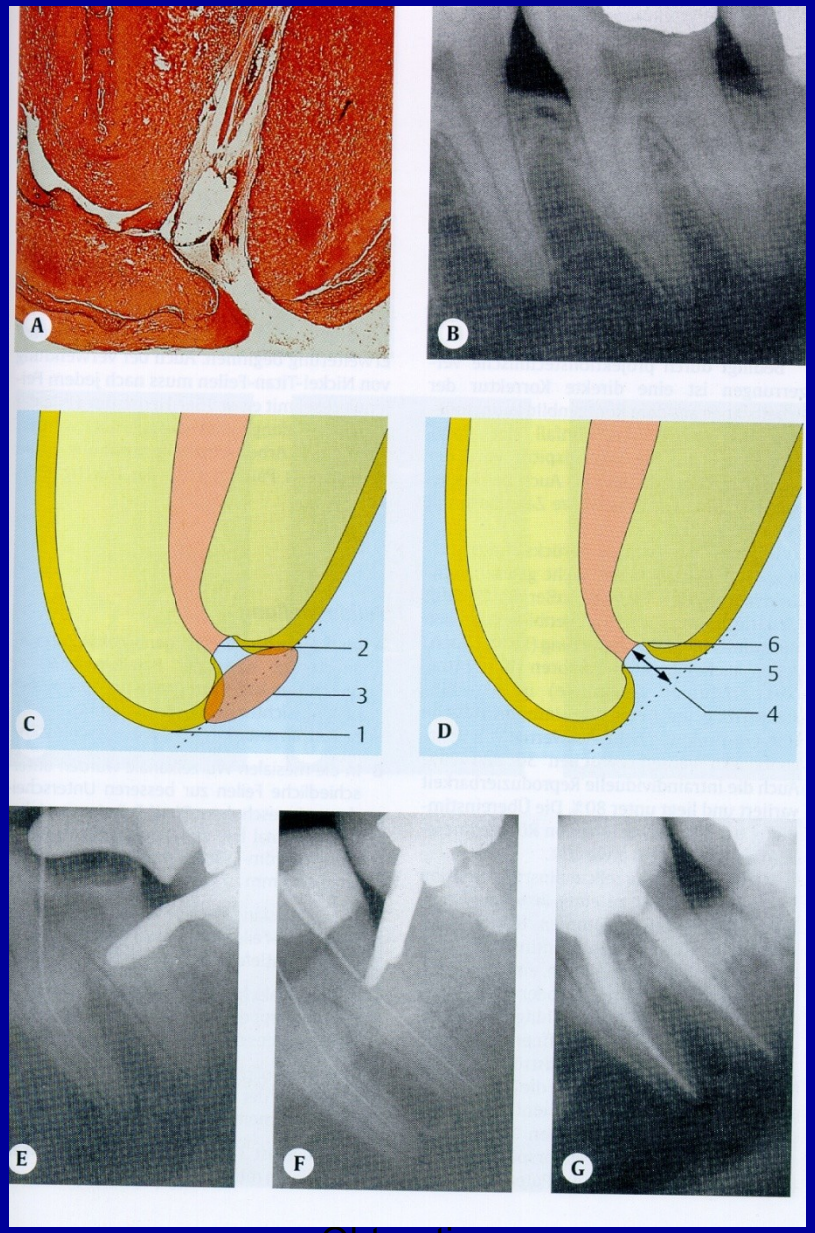
Obturation

Objectives of obturation


A
B
C
2
3
1
D
6
5
4
E
F
G

Potential causes of failure

- Apical seal
  - Irritating remnants in canals
  - Percolation
- Coronal seal
  - Irritants from oral cavity
  - Restoration
- Lateral seal
- Length of obturation
  - Overfill
    - Obturating materials
    - Lack of apical seal secondary to overfill
  - Underfill
- Lateral canals
- Vertical root fractures

Timing of obturation

- Patients symptoms
- Pulp and periapical status
  - Vital pulp
  - Necrotic pulp
- Degree of difficulty
- Culture results
- Number of appointments

Core obturating materials

- Solid materials
  - Gutta-percha
    - Shapes
    - Advantages
    - Sealability
    - Methods of placement
    - Indications
  - Silver points
  - Files as core materials
- Pastes (semisolid)
  - Types
    - Zinc oxide and eugenol
    - Plastics
  - Techniques of placement
  - Advantages and disadvantages of pastes


15
20
25
30
35
40


GUTTA-PERCHA-POINTS
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60x GP
REFILLS
DENTSPLY
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F1 Ø20

Sealers I

- Desirable properties
  - Tissue torlerance
  - No shrinkage with setting
  - Slow setting time
  - Adhesiveness
  - Radiopacity
  - Absence of staining
  - Solubility in solvent
  - Insolubility to oral and tissue fluids
  - Bacteriostatic properties
  - Creation of a seal

Sealers II

- Types
  - Zinc oxide-eugenol based
    - Grossman's formulation
    - Other types
  - Plastics
    - Epoxy
    - Other plastics
  - Calcium hydroxide
  - Glass ionomer
  - Others
- Mixing
- Placement

Obturation techniques with gutta-percha I

- Selection of technique
- Lateral condensation
  - Indication
  - Advantages
  - Disadvantages
  - Techniques
    - Spreader or plugger selection
    - Master cone selection
    - Fitting the master cone
    - Steps in obturation
    - Ultrasonic condensation
  - Finishing touches
  - Correcting obturatin problems

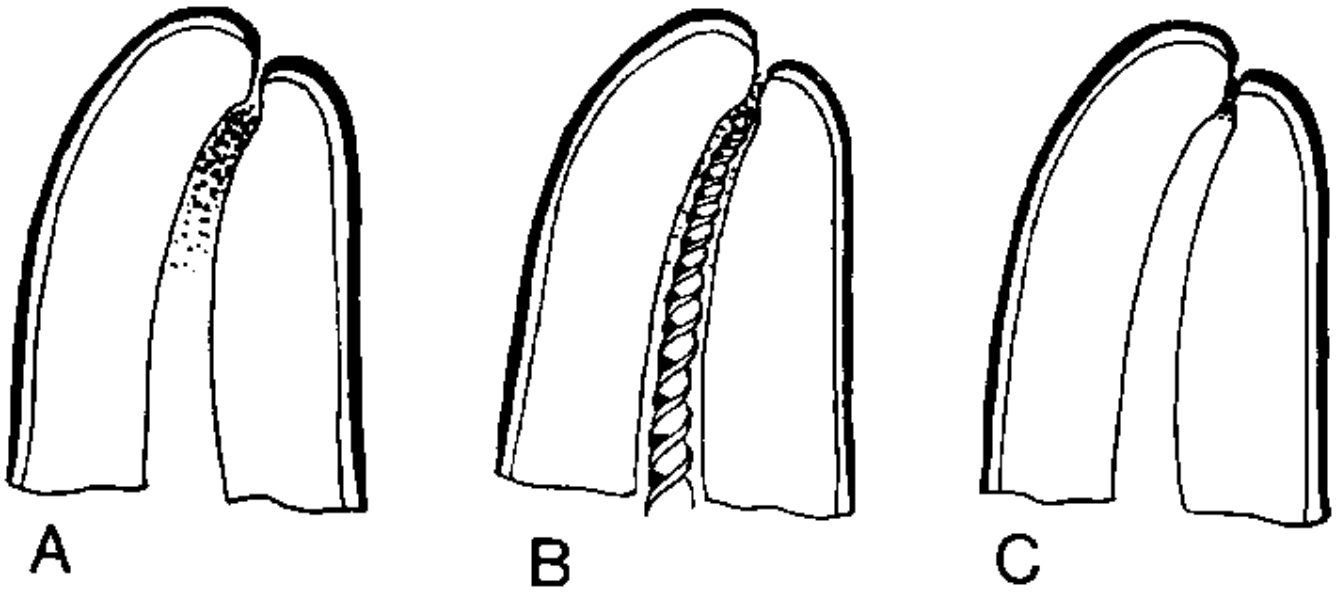
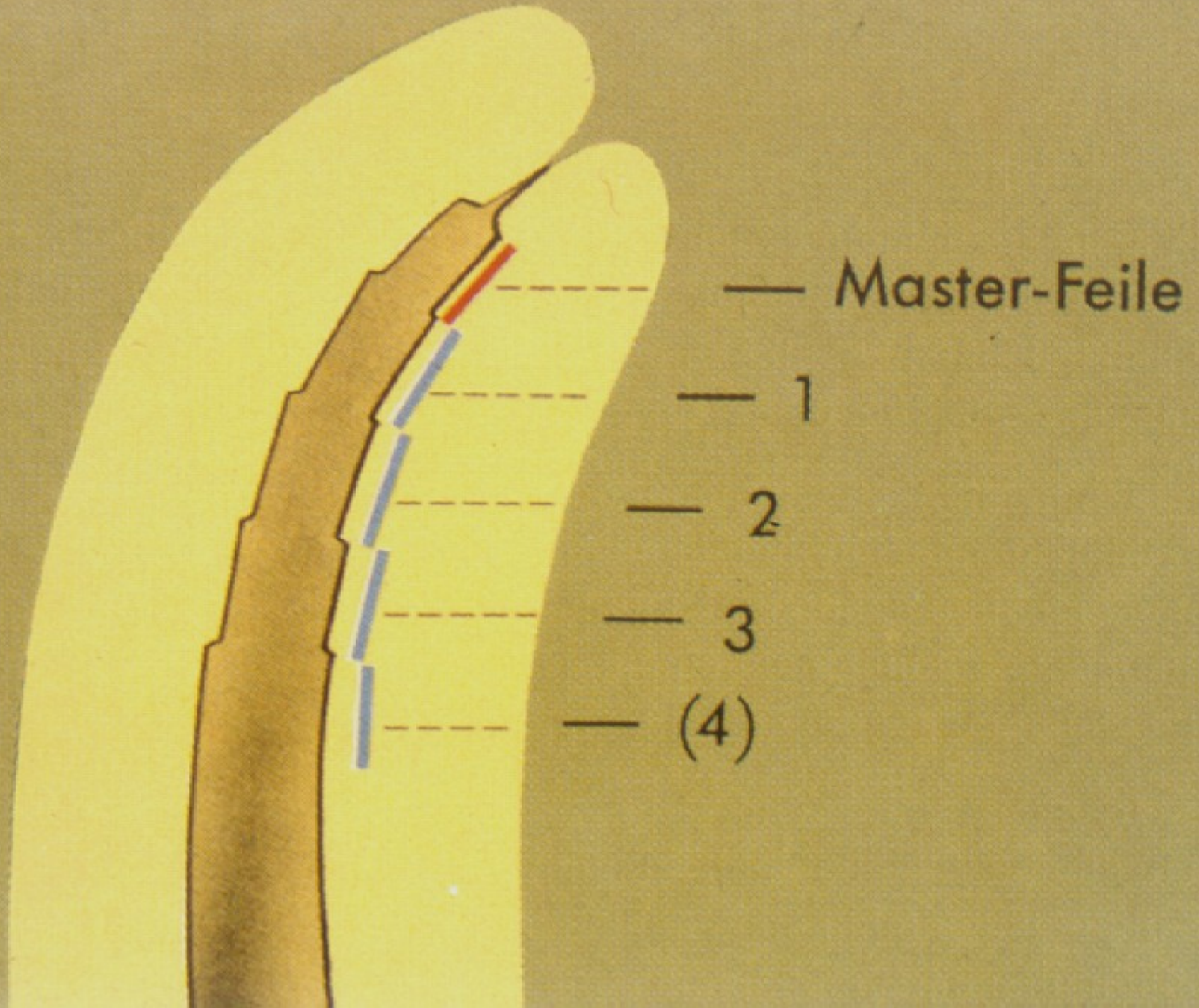


Figure 14–15 ■ *Apical clearing. A,* Dentin chips and debris remain in the apical region following the final irrigation and drying. *B,* Rotating at length with two or three file sizes larger than the master apical file removes the debris and enlarges the apical region slightly *(C).* (Courtesy of Dr. A. Goerig.)


Master-Feile
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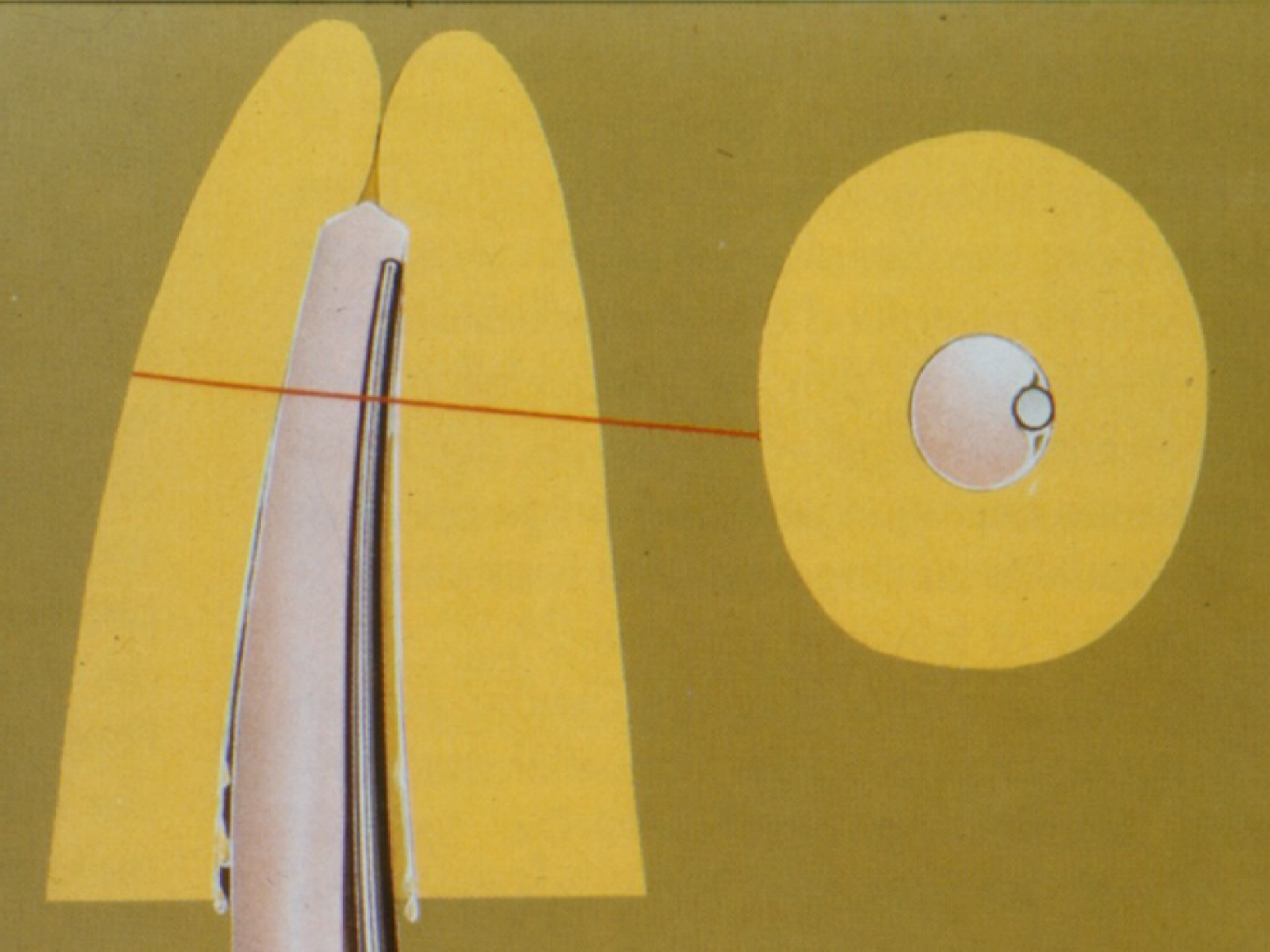
(4)



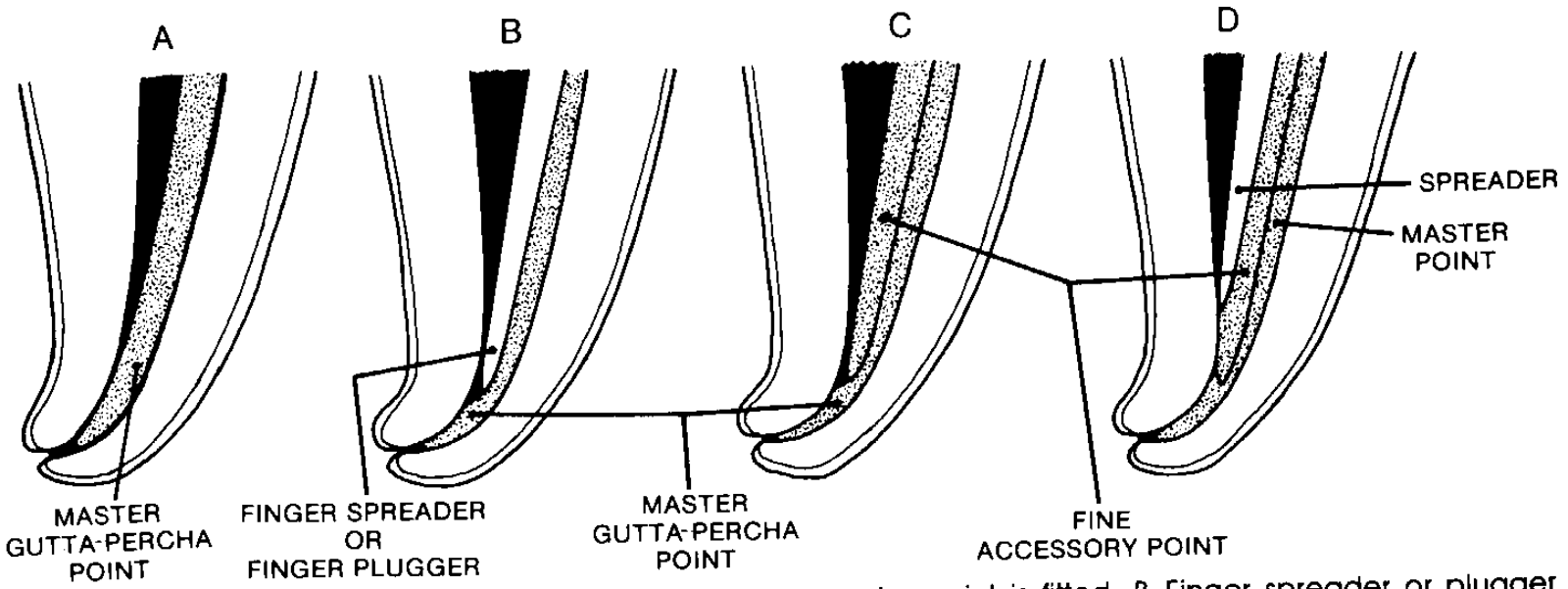


Figure 14–20 ■ The steps of lateral condensation: *A*, The master point is fitted. *B*, Finger spreader or plugger is inserted, ideally within 1 to 2 mm of the prepared length. *C*, The spreader is rotated and removed, and an accessory cone is placed in the space created. *D*, The process is repeated.

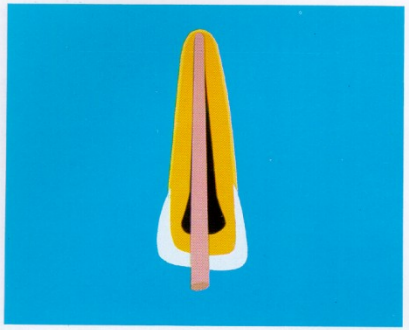


Abbildung 197a

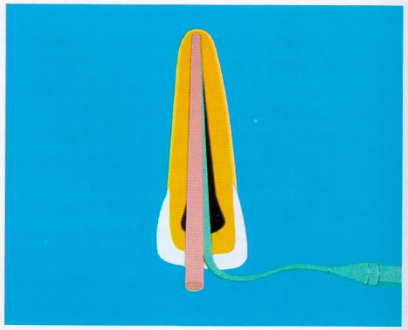


Abbildung 197b

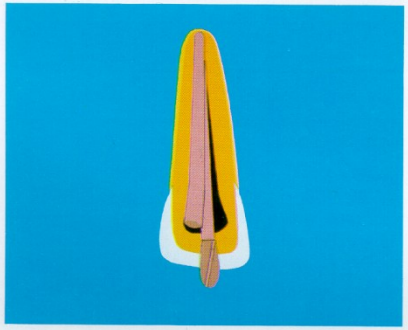


Abbildung 197c

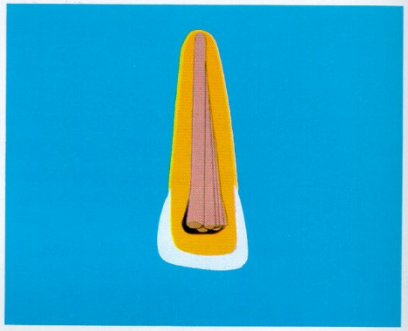


Abbildung 197d

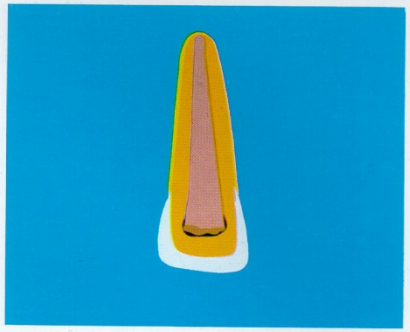
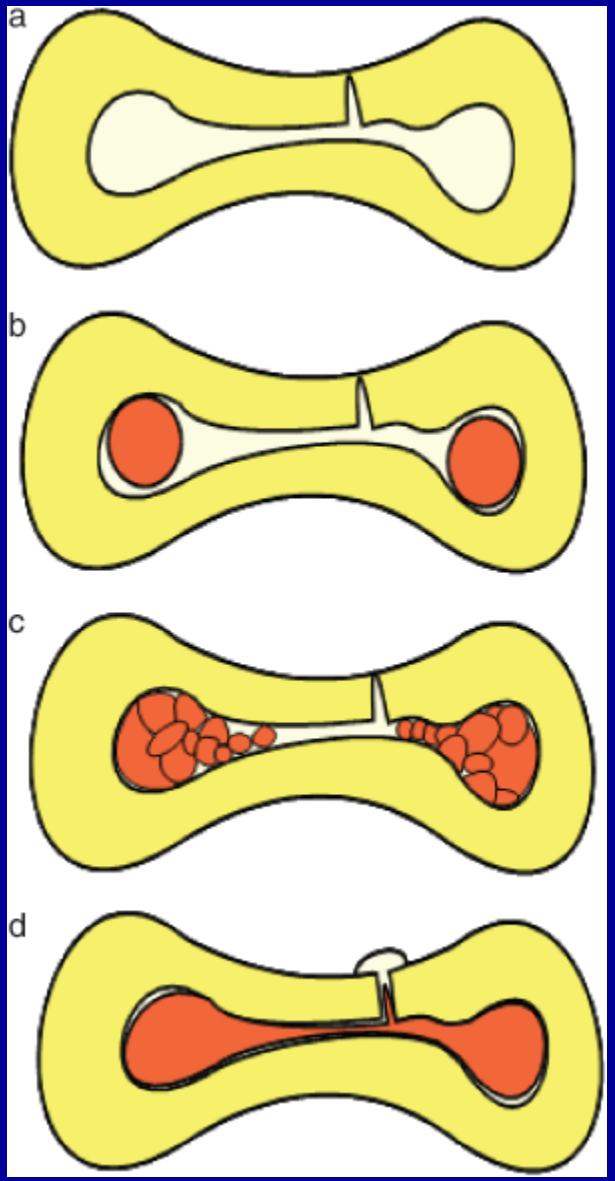


Abbildung 197e

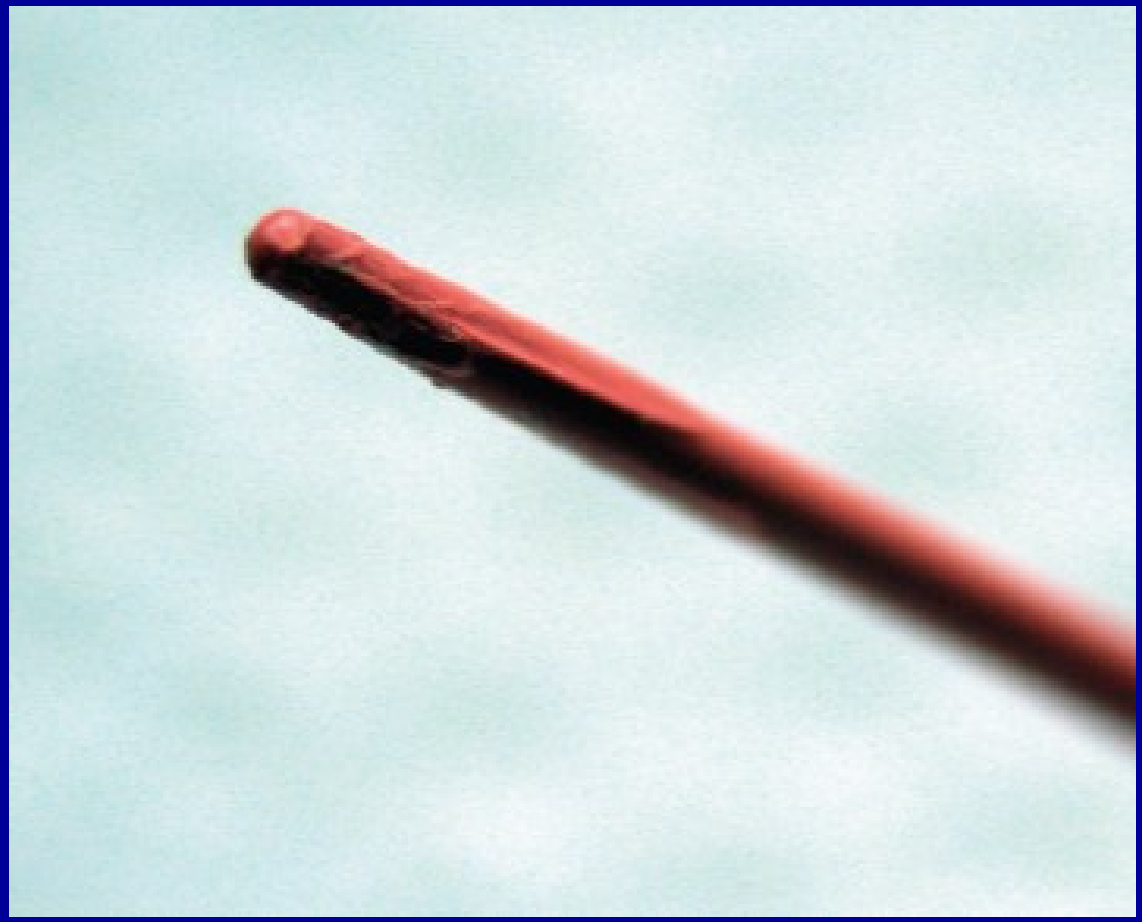
Abb. 197a Die standardisierte Guttaperchaspitze wird bis zum Apex eingeführt, um diesen zu verschließen (sogenannter Master-Point).
Abb. 197b Mit dem Spreader wird der Master-Point lateral kondensiert.
Abb. 197c Der vom Spreader zurückgelassene Spaltraum wird mit einer weiteren Guttaperchaspitze gefüllt.
Abb. 197d Auf gleiche Art wird weitergefahren, bis keine zusätzlichen Guttaperchaspitzen mehr Platz haben. Zum Schluß wird das Guttaperchaspitzenbündel mit einem heißen Exkavator im Pulpakavum abgeschnitten.
Abb. 197e Eine zusätzliche vertikale Kondensation vermag die Wurzelfüllung noch zu verbessern.



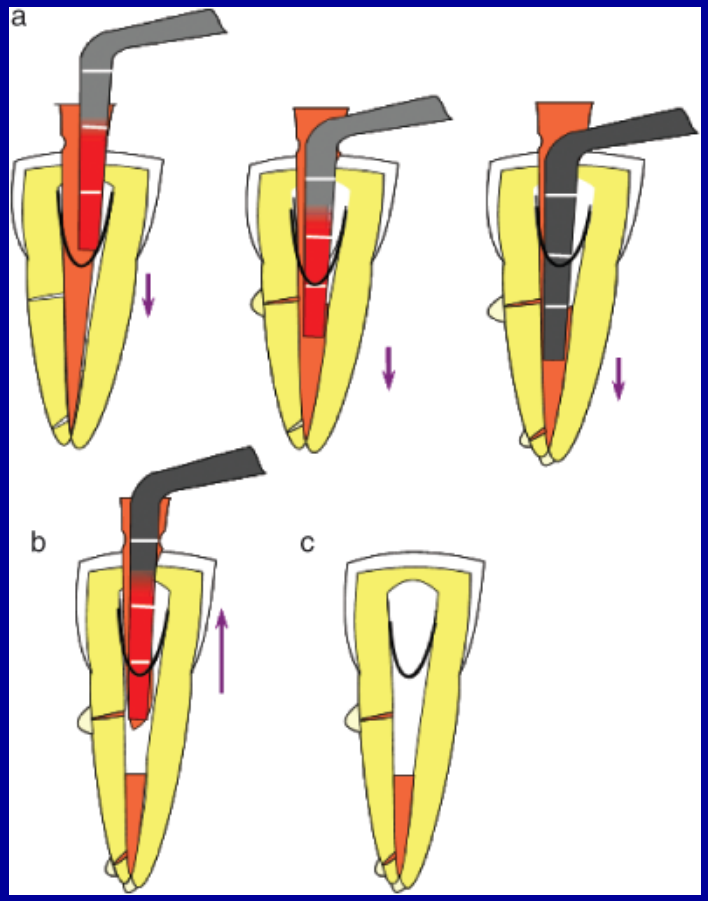
Classic spectrum of filling techniques,emphasizing the desirability of minimum sealer volume, from (A) paste only (least desirable), through (B) single cones with paste, and (C) cold lateral condensation, to (D) thermoplastic compaction.

Obturation techniques with gutta-percha II

- Solvent-softened custom cones
  - Indication
  - Technique
- Vertical condensation
  - Indication
  - Advantages and disadvantages
  - Technique
  - Other warm vertical approaches
  - Sectional obturation
  - Thermoplasticized injection
  - Solven techniques
  - Gutta-percha carrier systems
- Alternative techniques



Chloroform customized master cone.



Warm vertical condensation – single wave. (A) Single wave downpack. (B) Separation and withdrawal. (C) Apical 4–5mm ‘corked’ with gutta percha and sealer.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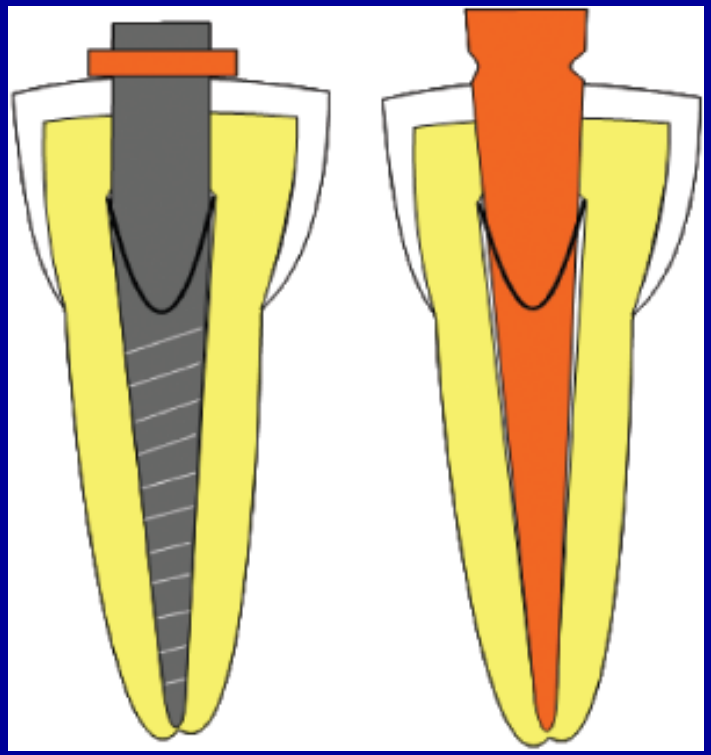

Matched, ergonomic shaping files and fillingcones may inadvertently promote single cone filling techniques.

A Thermafil device prepared for use. Upper device unaltered; lower device trimmed to remove excess gutta percha apically and coronally

Elements – combined System B and gun system in a single unit (Courtesy Sybron)

Evaluation of obturation

- Symptoms
- Radigraphic criteria
  - Radiolucencies
  - Density
  - Length
  - Taper
  - Restoration