

# Lecture B

D. de Groot - Like

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Radboudumc

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# Contents

- Opening and points of interest in the endodontic opening
- Reader Endo 1:
  - Theory 1
  - Zso 1
- Reader adjusted

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# Endodontic treatment

- Diagnosis
  - Preconditions: caries-free/good restoration/DETI •

Endodontic treatment •

Endodontic opening •

Rubber dam •

Coronal phase •

Final length determination •

Preparation: apical

phase • Canal

filling • Final coronal closure •

Control

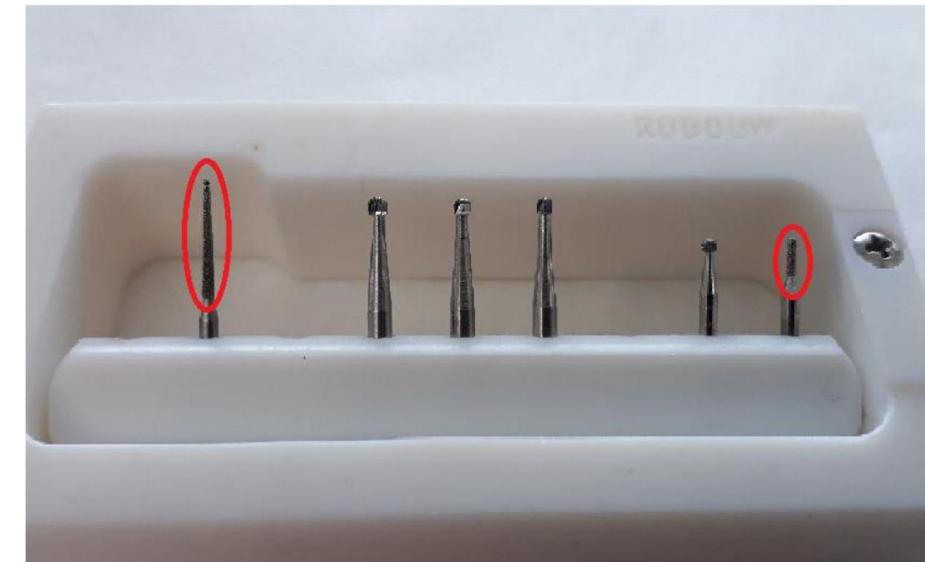
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# Endodontic treatment

- Endodontic opening •  
With or without rubber dam?



# The endodontic opening





# To open

- Age •  
History of element
  - Restorations
  - Trauma



# Obliteration



# Obliteration

- You **cannot** reach an obliterated pulp chamber with your end grinding drill
- Although?
  - Cofferdam
  - Microscope
  - ....



# Pulpadak

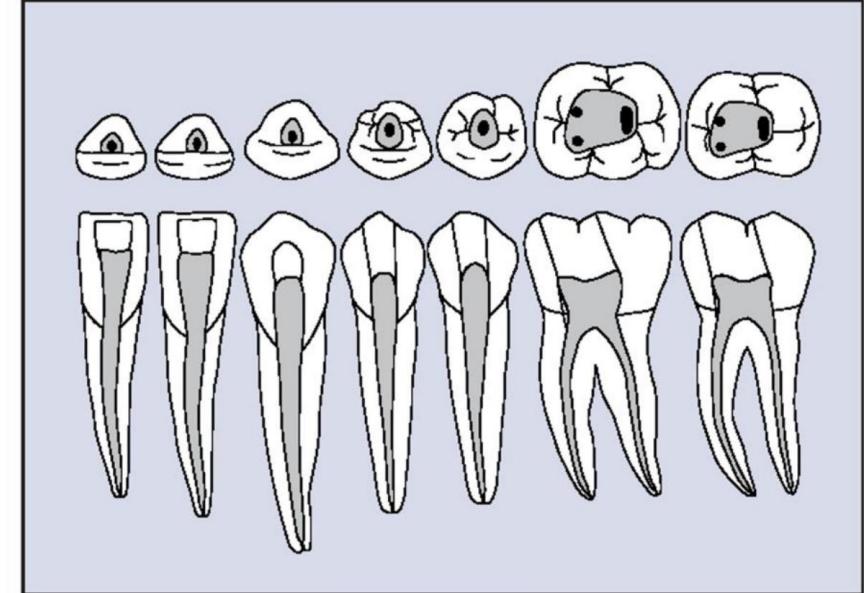
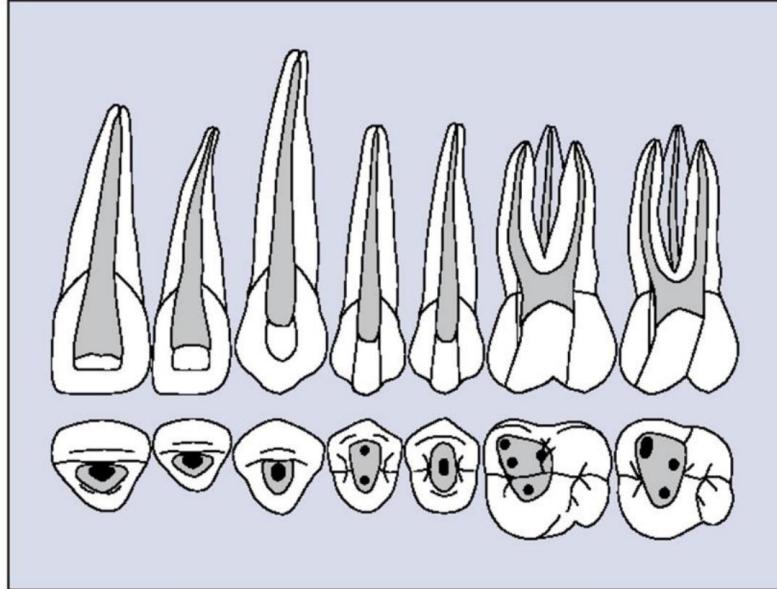
- Conditions
  - The location of the opening must be chosen in such a way that the “roof” of the pulp chamber can be completely removed



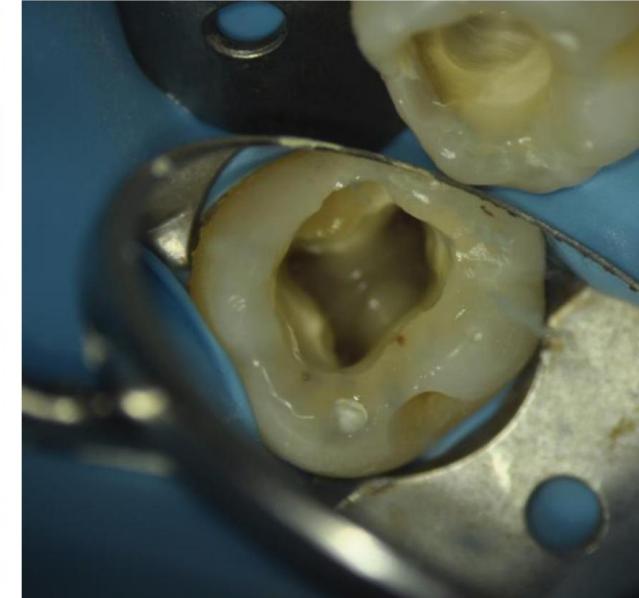
Adams and Tomsom, BDJ, volume 216 NO.6 march 21 2014

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# Pulpadak



# Pulpadak

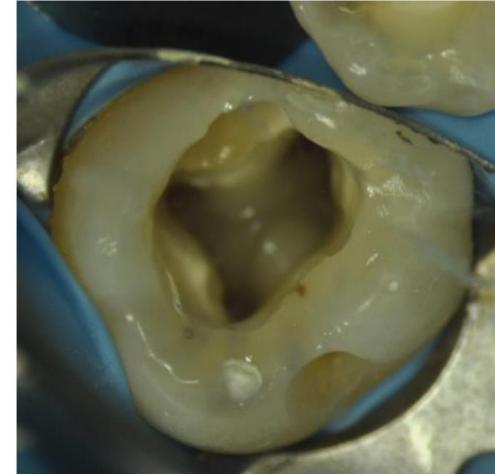


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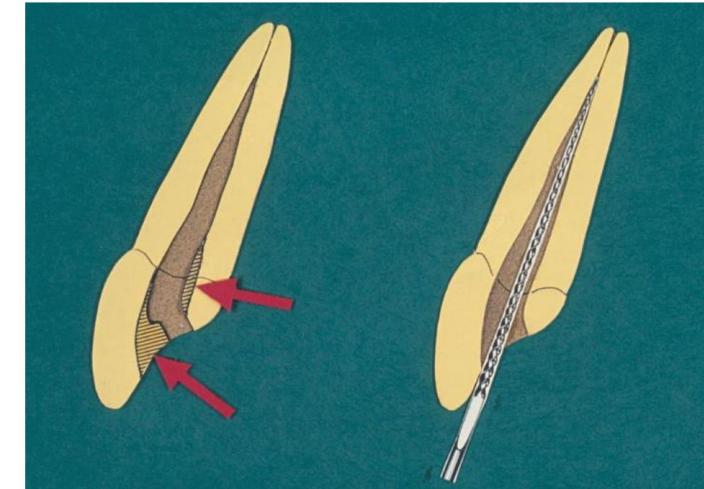
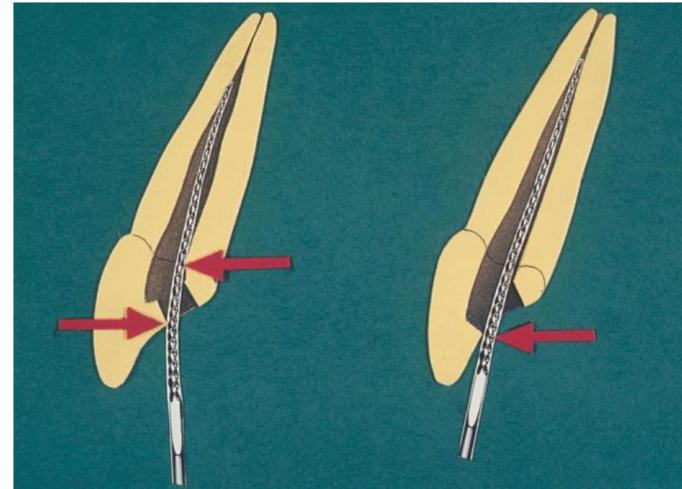
# Overview

- The orientation of the orifice walls should be such that a complete view of the pulp floor and canal entrances is obtained



# Tension-free

- Endodontic instruments can become tension-free in the canal stabbed



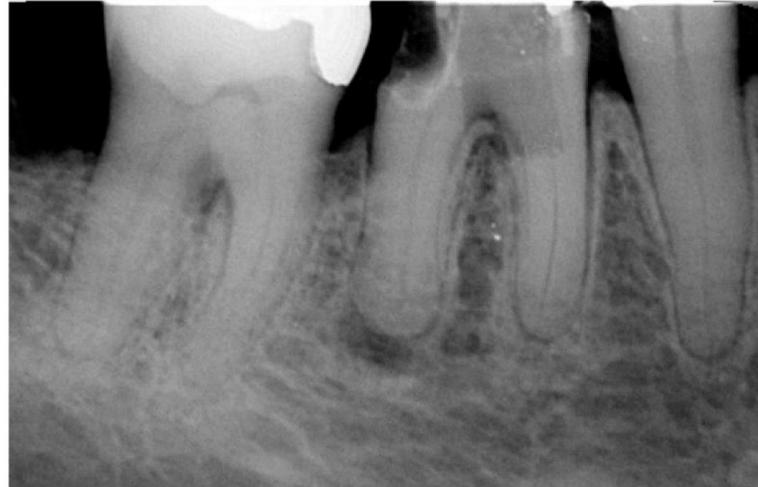
## Easy to restore and disinfect

- The element must be easy to restore and disinfect



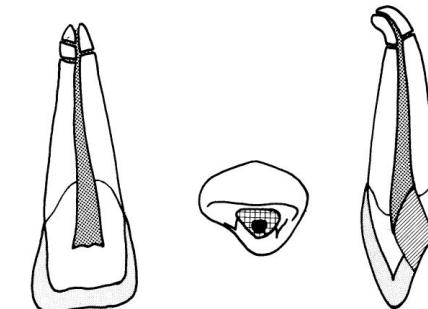
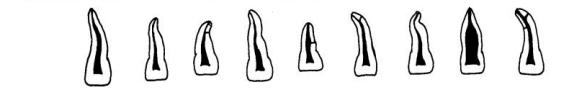
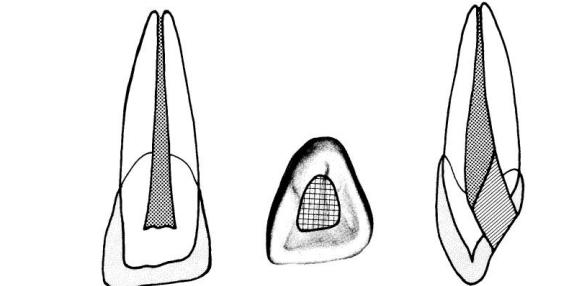
# Sacrificing tooth tissue

- No more dental tissue should be sacrificed than strictly necessary



# Upper incisor

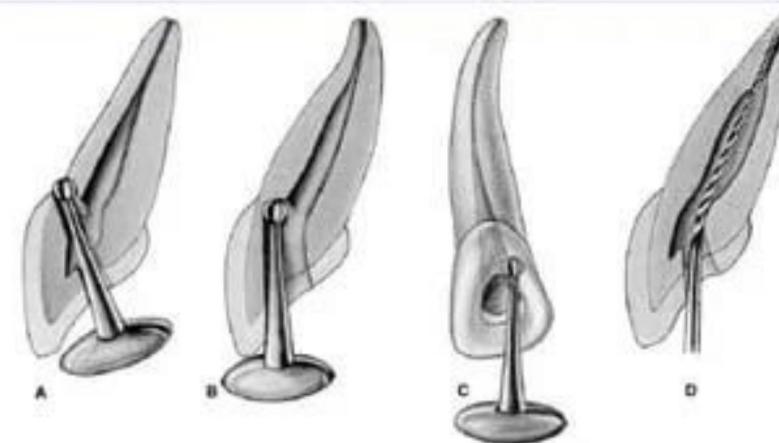
- Annoying
  - Crown inclination
  - Incisal •
- Aesthetics •
- Pulp horns



# Upper incisor

- Common mistake •

Opening too far buccally so that the canal is not found or • Even worse:  
buccally just above the alveolus wall is perforated





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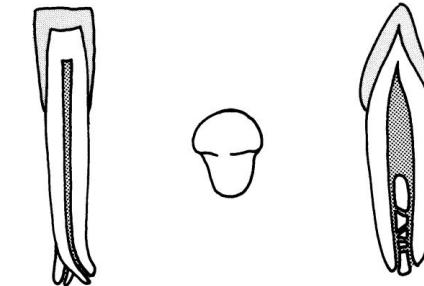
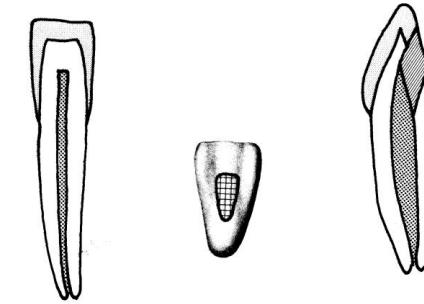


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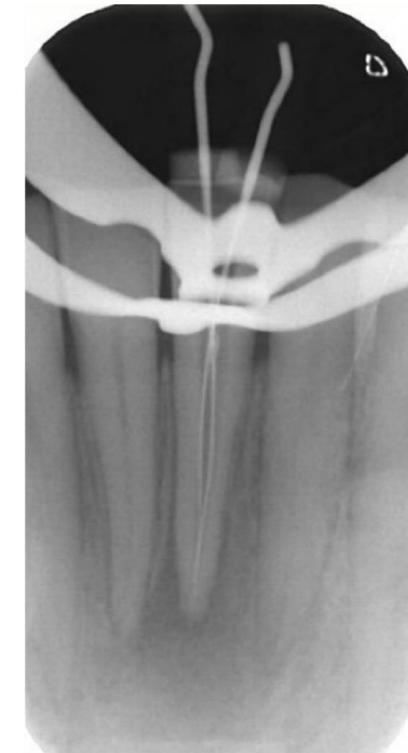
# Underincisive

- Annoying
  - Crown inclination
  - Incisal •
- Aesthetics •
- Two channels!



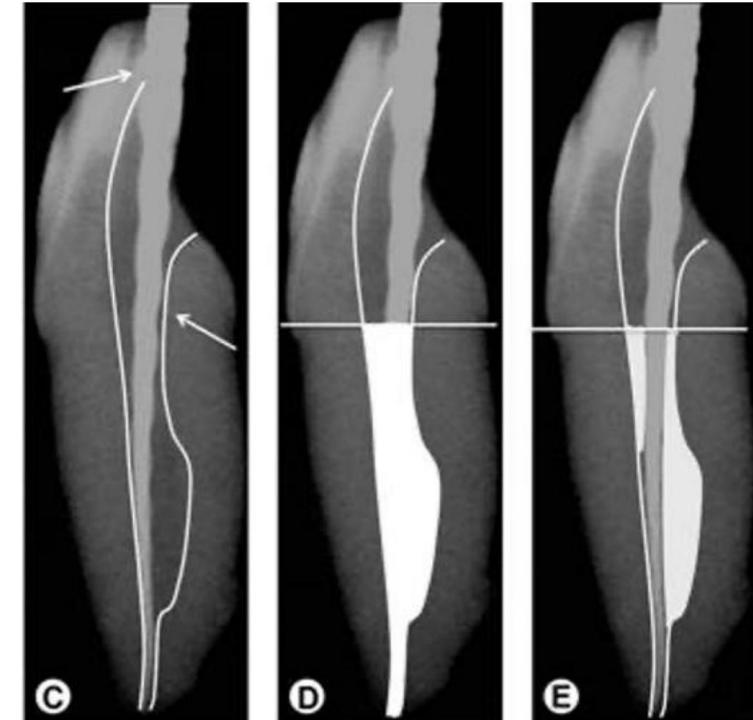
# Underincisive

- Common mistake
  - Not enough tissue removed lingually so that a second canal is not found
  - The excess mesially and/or distally open, causing perforation there

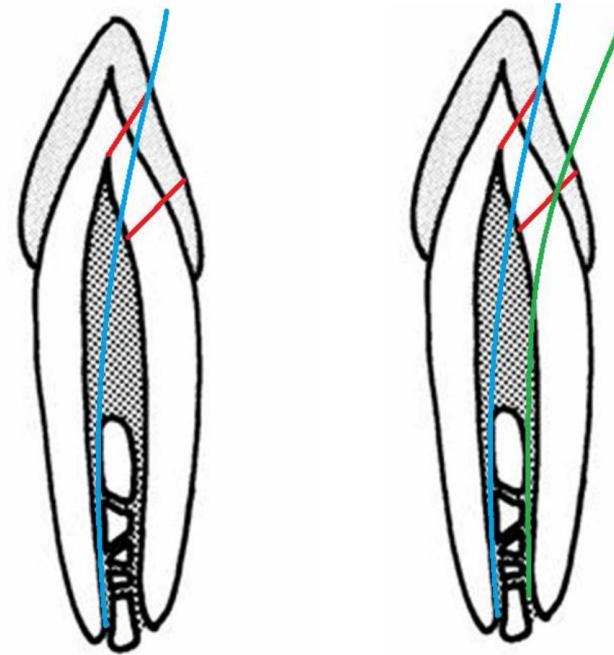


# Underincisive

- Lingual shoulder •  
Initial access to buccal canal • (Under microscope) lingual search

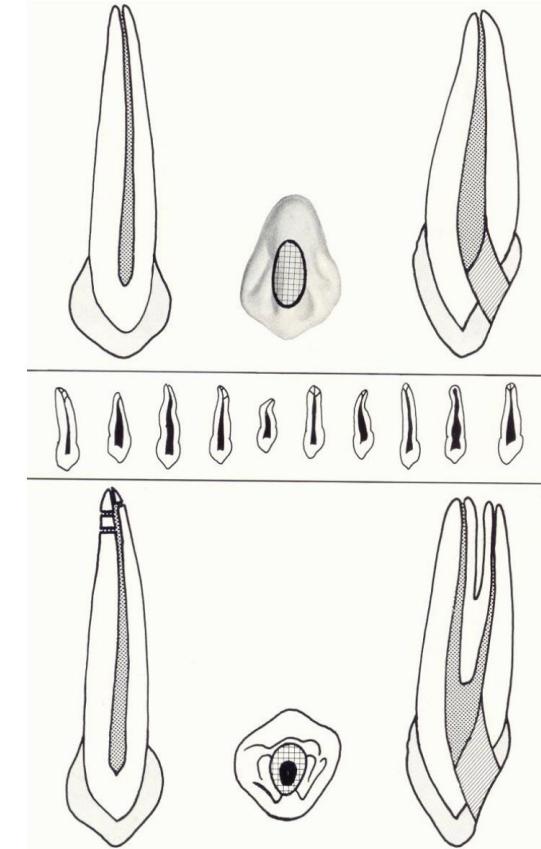


# Underincisive

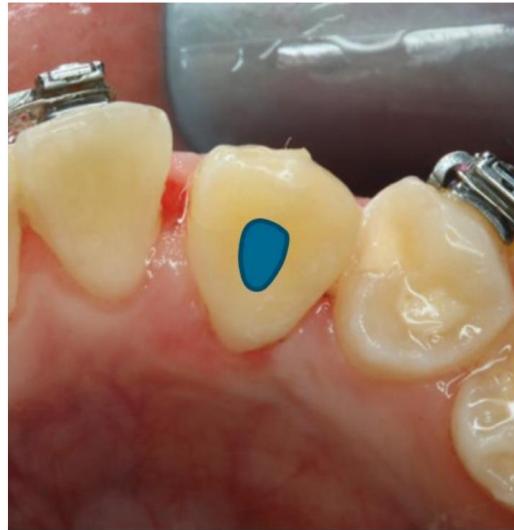


# Cuspidaten

- Not enough tissue has been removed  
lingually • Difficult to fill  
lingually • (Second canal is not found)



# Cuspidaten

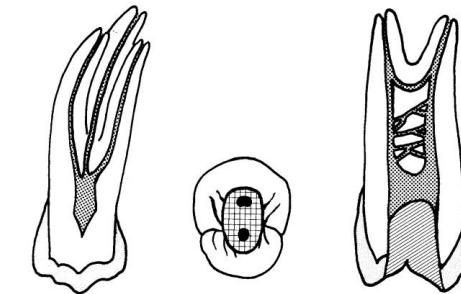
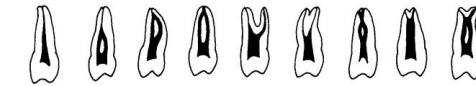
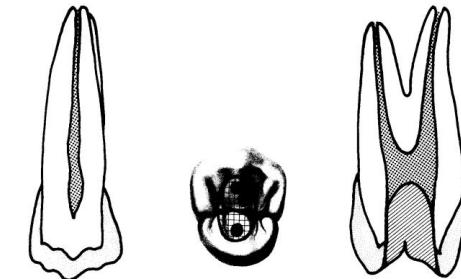


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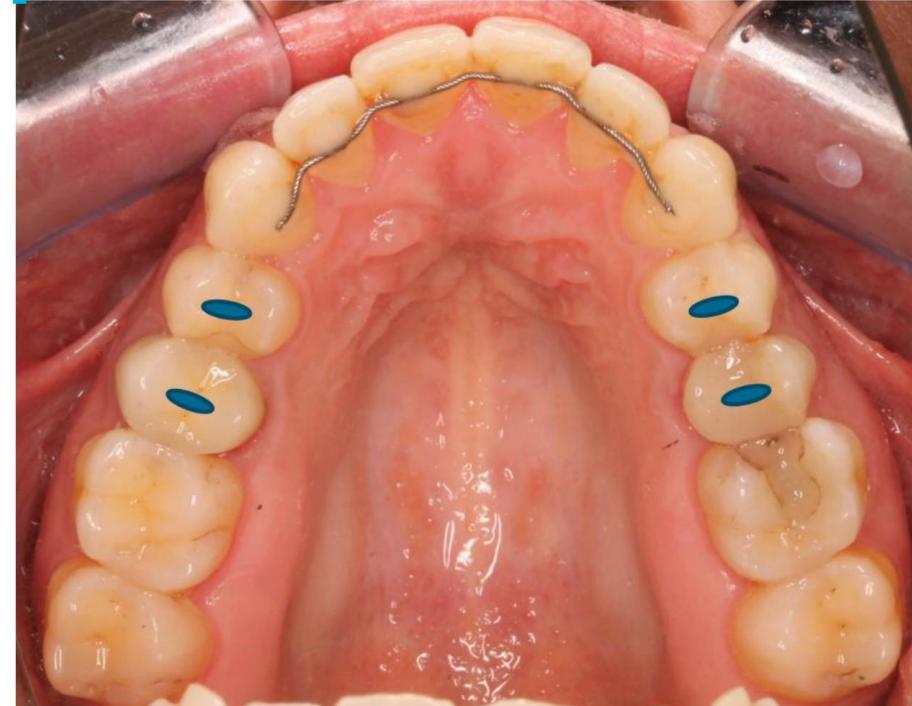
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# of Bovenpremola

- Common mistake: •  
Too much to the mesial or distal

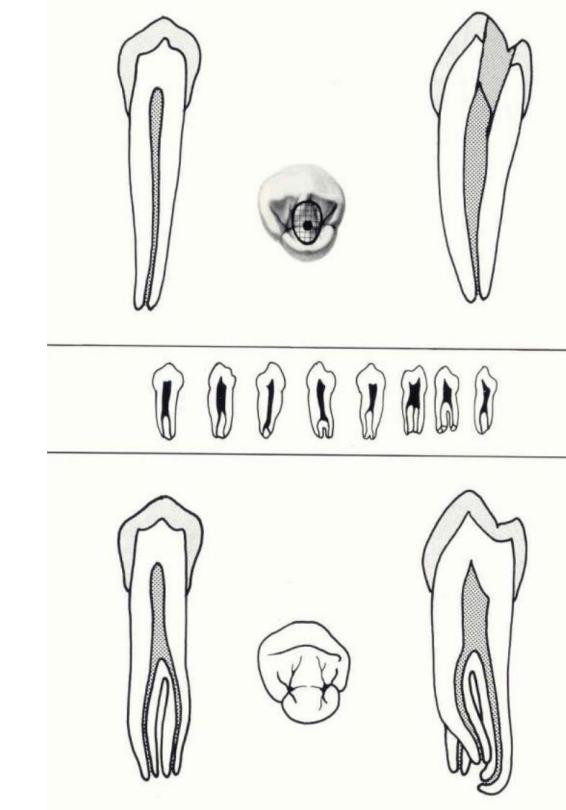


# of Bovenpremola



# Lower premolars

- Variable anatomy
  - Regular apical divisions •
- Canal lies lingually



# Direction of use

- Inclination
- Rotation
- Angulation
- Common mistake: axis direction  
of element misjudged

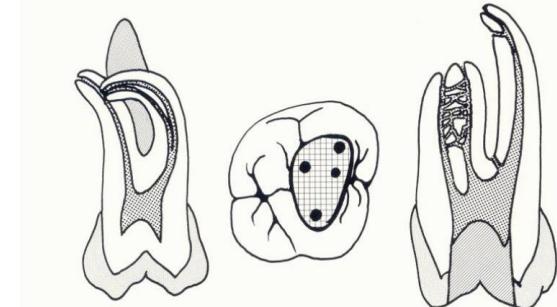
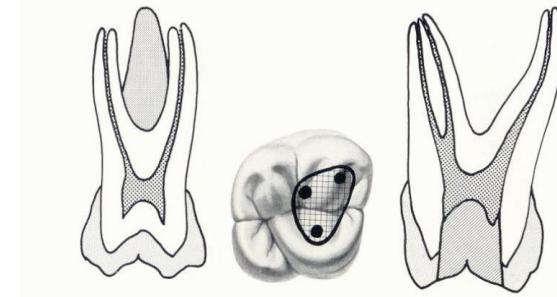


# Lower premolars



# Upper molar

- How many channels?
- Largest channel?
- Most difficult channel to get into?

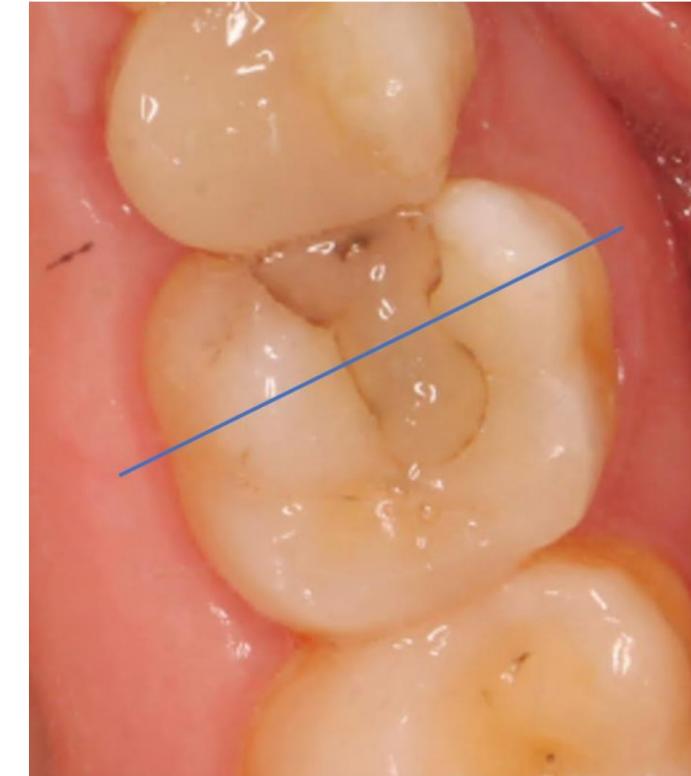
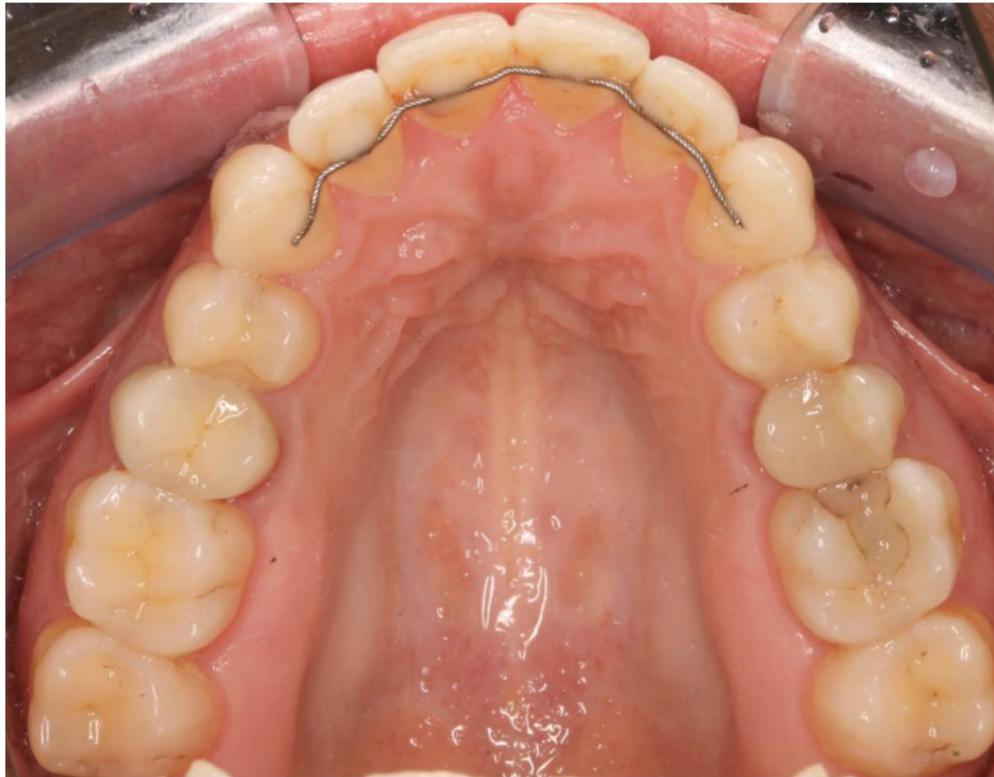


# Upper molar

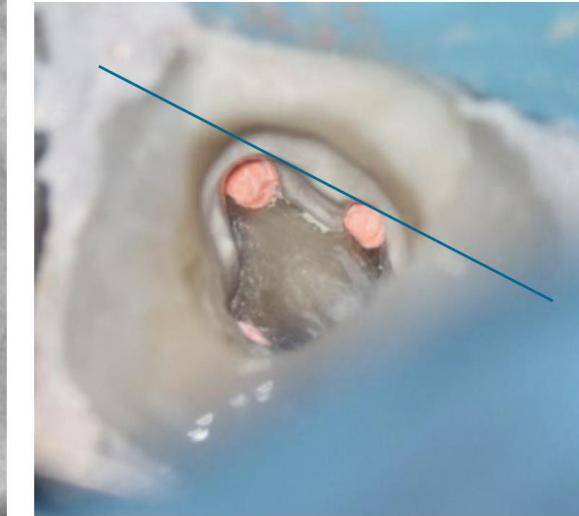
- Common mistake
  - Opening is too far mesial
    - Look carefully at the center of the palatal radix and the center of the mesio-buccal radix. They determine the mesial boundary of the opening.





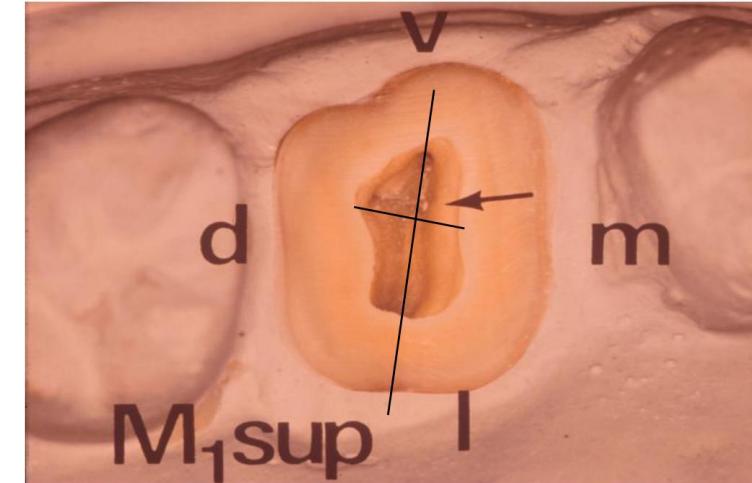
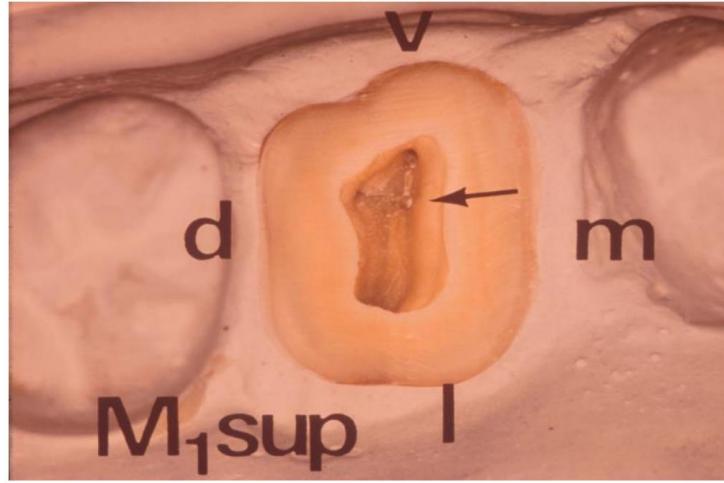


# Upper molar

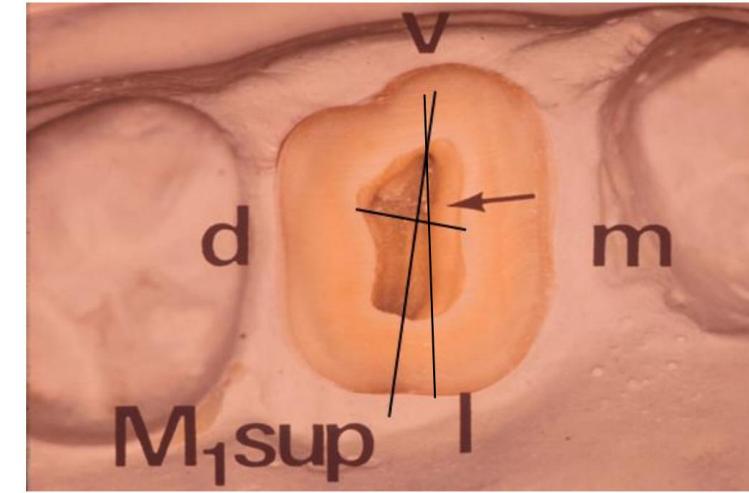
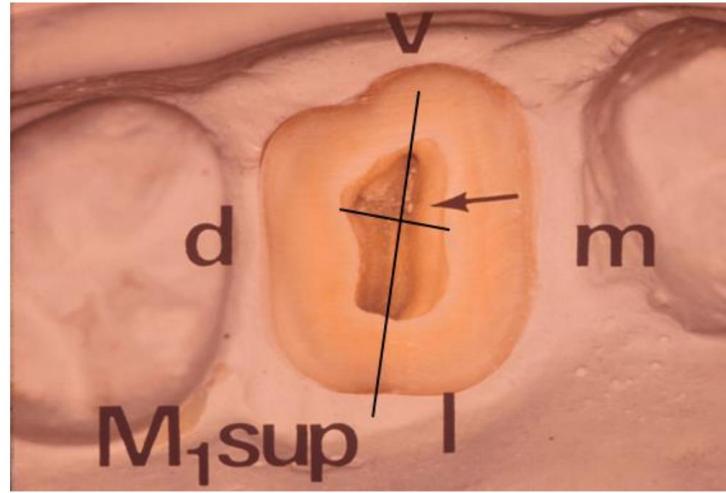


# Upper molar

- Fourth channel (mb2)



# Upper molar



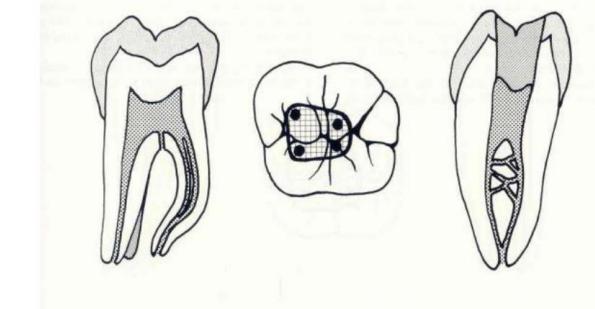
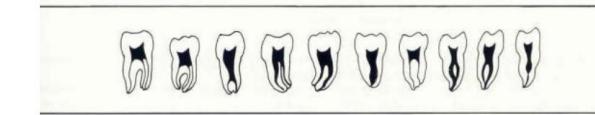
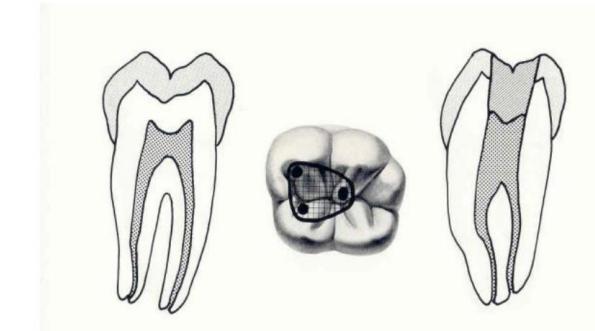
# Upper molar



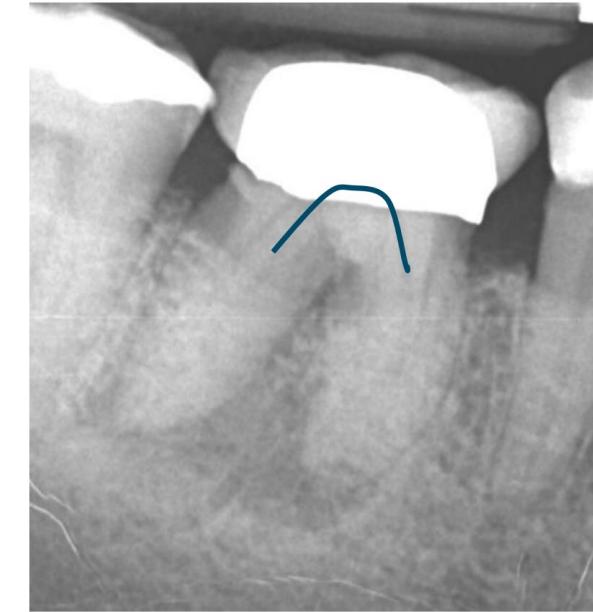
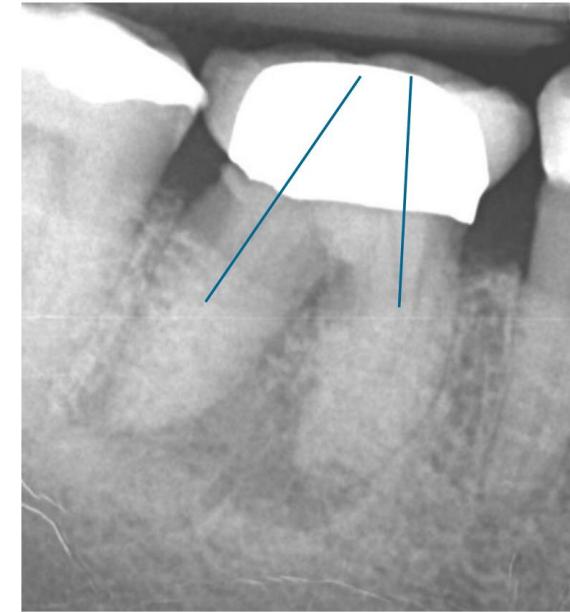
# Lower molar

- How many channels? •

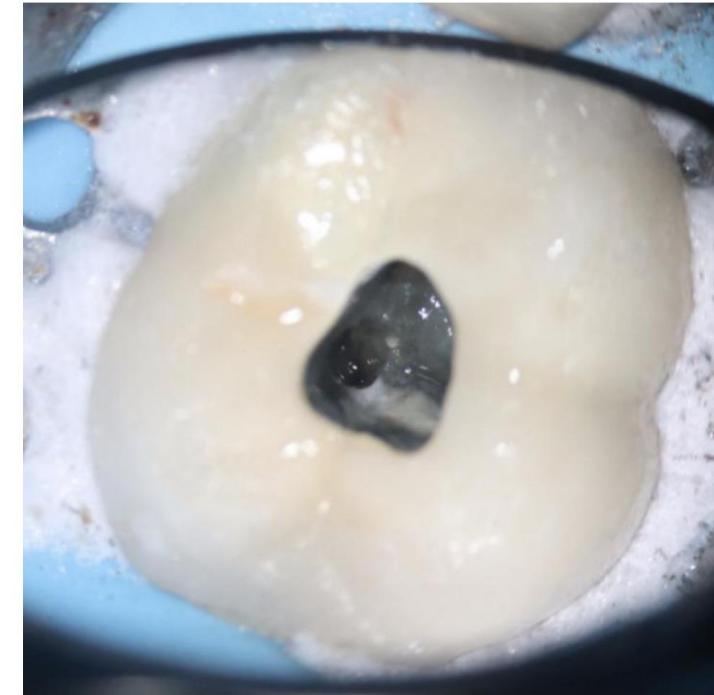
Largest channel?



# Lower molar



# Lower molar

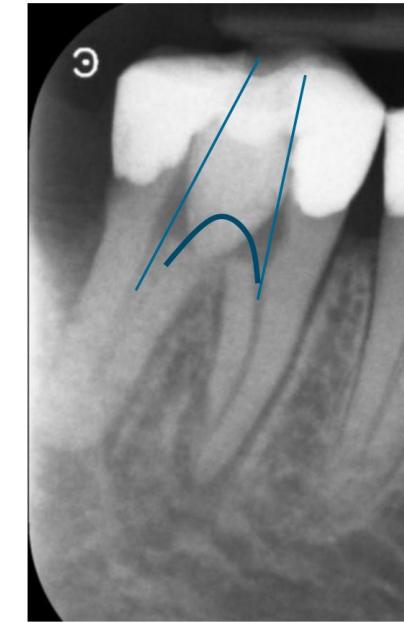


# Lower molar

- Common mistake:
  - Opening too much to the mesial
  - Perforation furcation



# Lower molar



# Search for channels

- Anatomical knowledge
- X-ray •

Magnification (microscope/loupe)

- Straight probe
  - Pocket probe
  - Mirror •
- Ultrasonic
- Micro-opener



- E-learning  
The Endodontic Opening

