

# Isolation for different filling techniques (Relative and absolute isolation)

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# Isolation

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This word came from latin, it means confine, separate

The fact that something is separate and not connected to other things (Cambridge Dictionary)

Synonym: hermetically sealed



# Isolation of operating field in dentistry

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## Relative:

- Make amalgam
- Make glassionomer, phosphate cement
  - Long term temporary
  - Deciduous teeth

## Absolute:

- Adhesive filling
- Remove amalgam filling
  - Allergy
  - Pregnancy
  - Childs
- Endodontic treatment
- Adhesive cementation
  - Crown
  - Bridge
  - Inlay, onlay
  - Glass fiber
  - Veneers
  - Core build up

# Goals

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## 1. Moisture control

- Saliva
- Blood
- Crevicular fluid
- Moisture of breath

## 2. Prevention from aspiration and swallowing

- Water vapour
- Restorative debris
- Endo instruments
- Solutions
- Burs



# Goals

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## 3. Retraction and access

- Tongue
- Cheek
- Lips
- Open mouth

## 4. Harm prevention

- Alarm the patient
- Aspiration and swallow
- Accidentally soft tissue damage
- Patient comfort
- Microorganism

# Type of isolations

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1. Relative
2. Absolute (rubber dam)

# 1. Relative isolation

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# Materials and instruments

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Cotton rolls

Suction devices:

- Saliva ejection
- Exhaustor

Retraction cord

Mirror and evacuator tip for retraction

Other instruments (cotton rolls holder by Bányai, Huszár)

Mouth props

Teflon tape

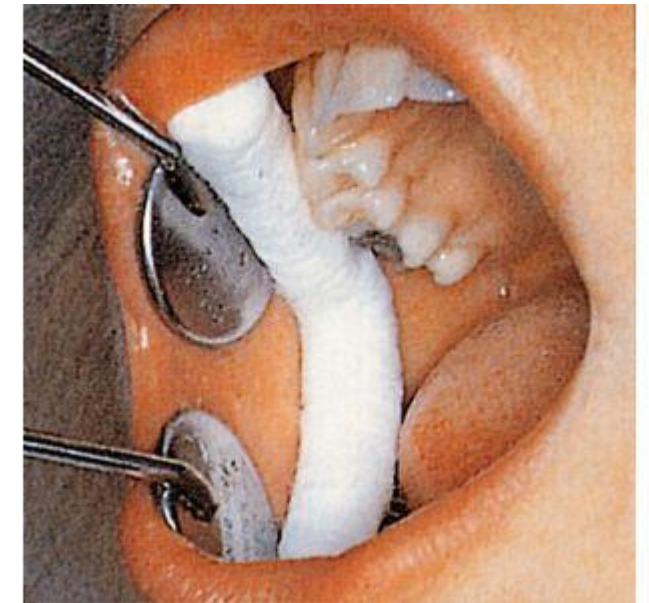
# Cotton rolls, parotis rolls

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# Cotton rolls, parotis rolls

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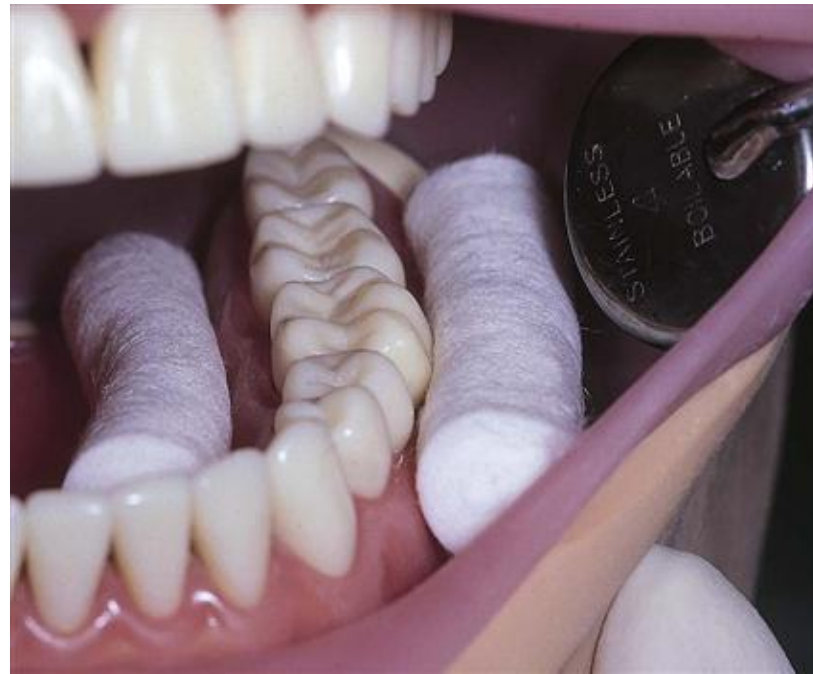
# Upper jaw (maxilla)

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# Lower jaw (mandibula)

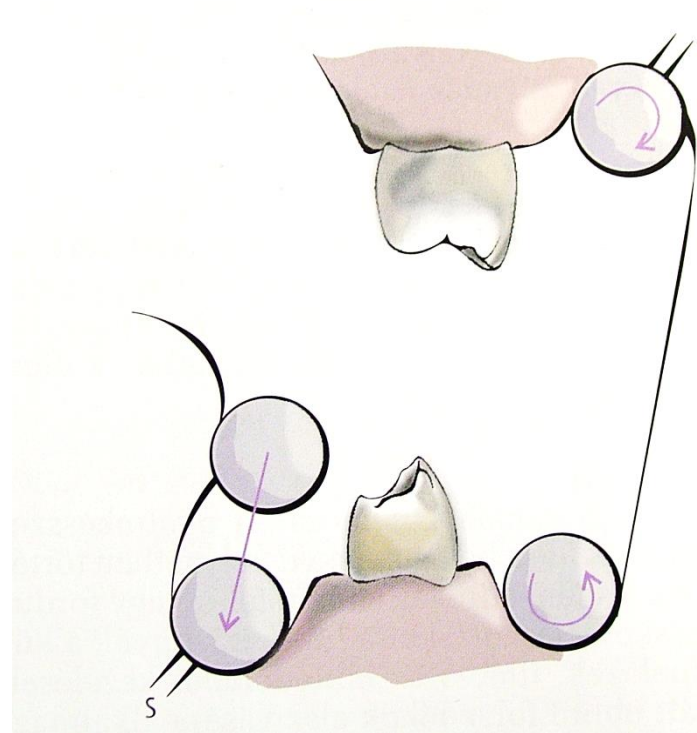
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# Cotton rolls (vatta rolni)

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The cotton rolls must be wet when we take off !

# Cotton rolls holder by Bányai

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# Cotton rolls holder by Bányai

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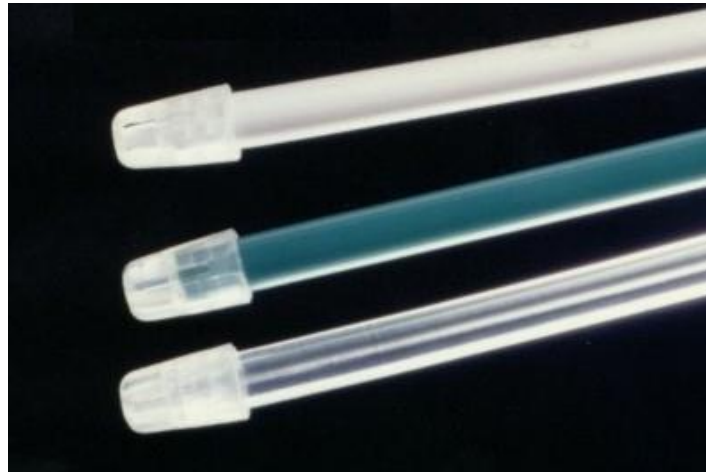
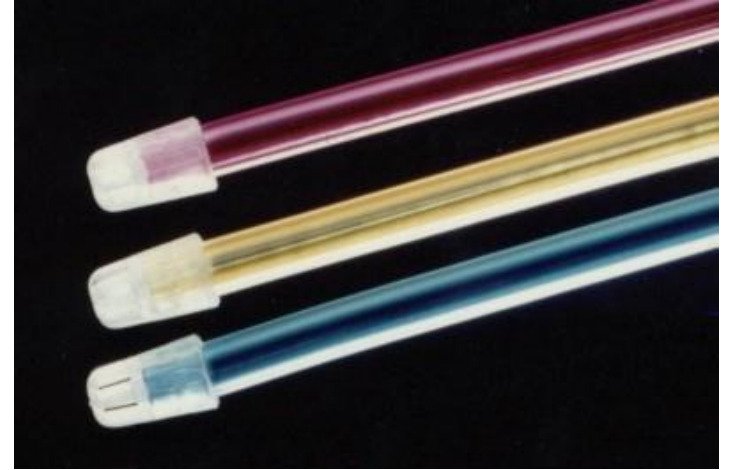
# Saliva suction

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# Saliva ejection

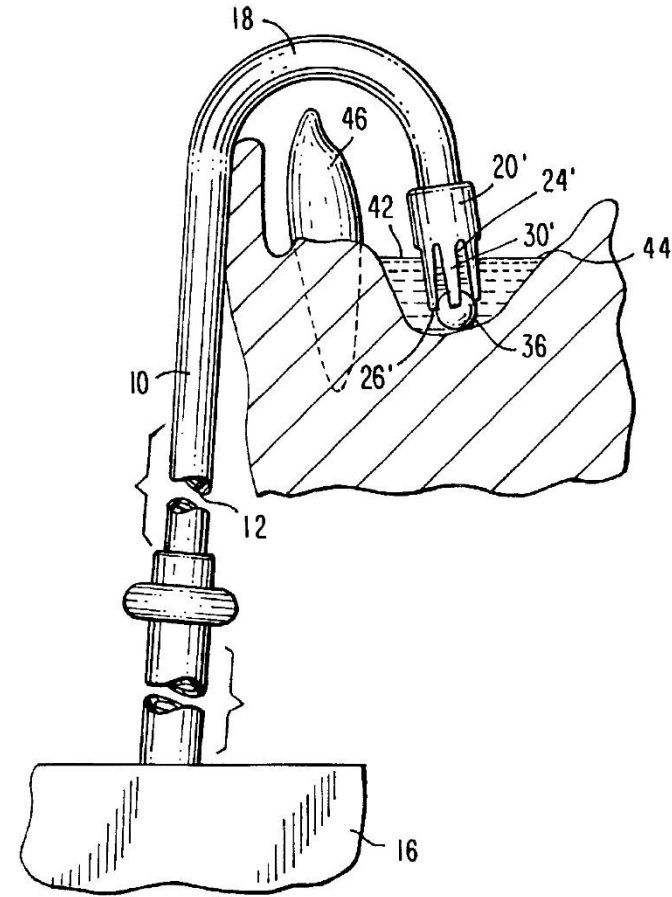


# High performance vacuum evacuator (Exhaustor)

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# Saliva suction, exhaustor



## 2. Absolute (Rubberdamology)

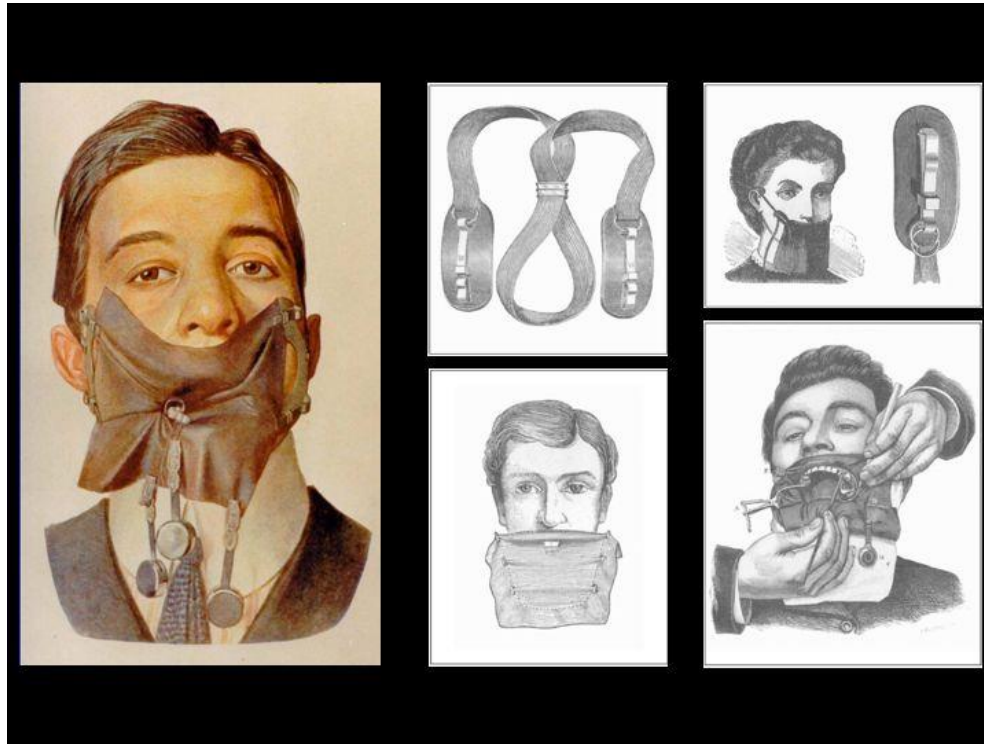
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# History

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S. C. Barnum (1864)



# Advantages

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Dry, clean operating field

Access and visibility

Improved properties of dental materials

Protection (both patient and operator)

Operating efficiency

# Disadvantages

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Time consuming (3-5 minutes)

Asthma

Latex allergy

Costly

Teeth depending

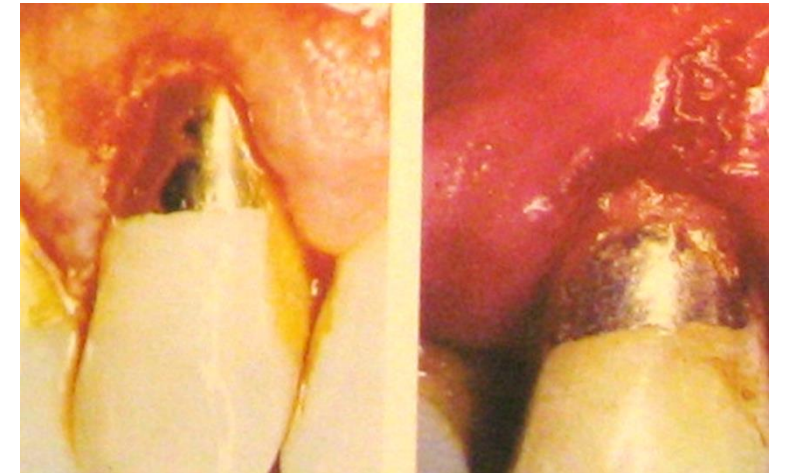
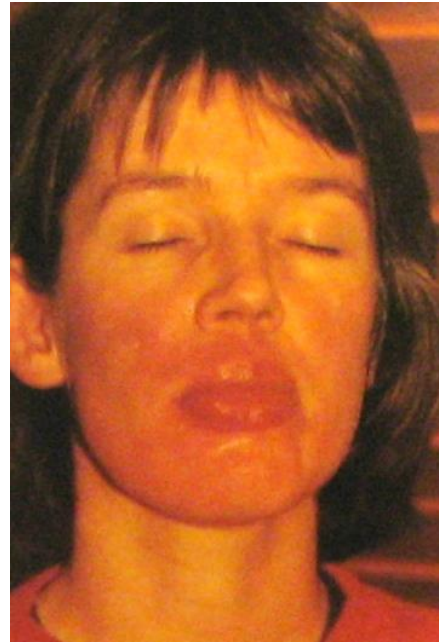
- Deciduous teeth
- Unerupted teeth
- Malpositioned teeth

Abridge the respiration

Clamp aspiration or swallow

Can hurt the enamel or cement and soft tissues (strangulation, gingiva wound)

**If we use the proper instrument, and we ask carefully the patient before the treatment, we can't make mistakes**



# Materials and instruments

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## 1. Rubber dam material (individual sheets)

- Thickness
- Weights
- Color (contrast)
- Shiny and dull side



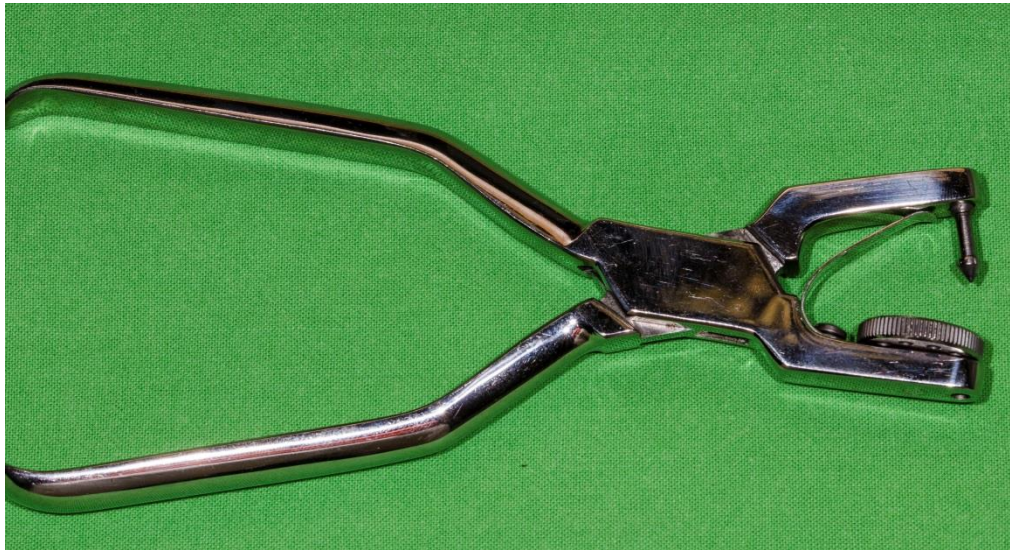


# Materials and instruments

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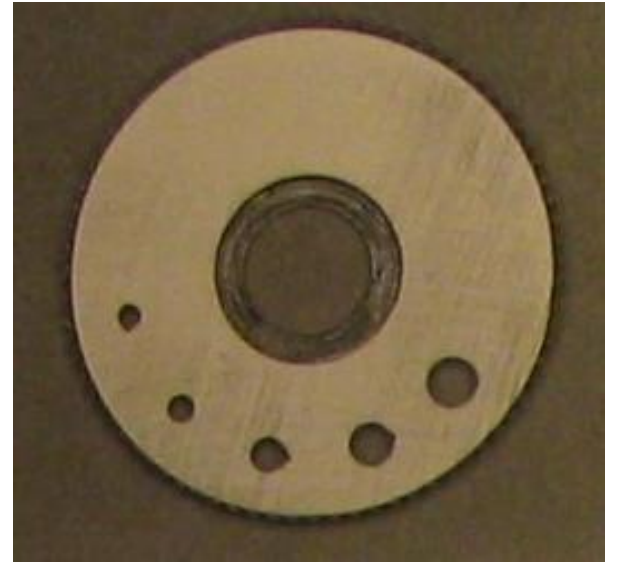
## 2. Puncher

- Rotating metal disk
- 6 holes (Ivory type)
- 5 holes (Ainsworth type)



# Materials and instruments - Ainsworth puncher

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# Materials and instruments - Ivory puncher

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# Materials and instruments - ASH puncher

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# Materials and instruments

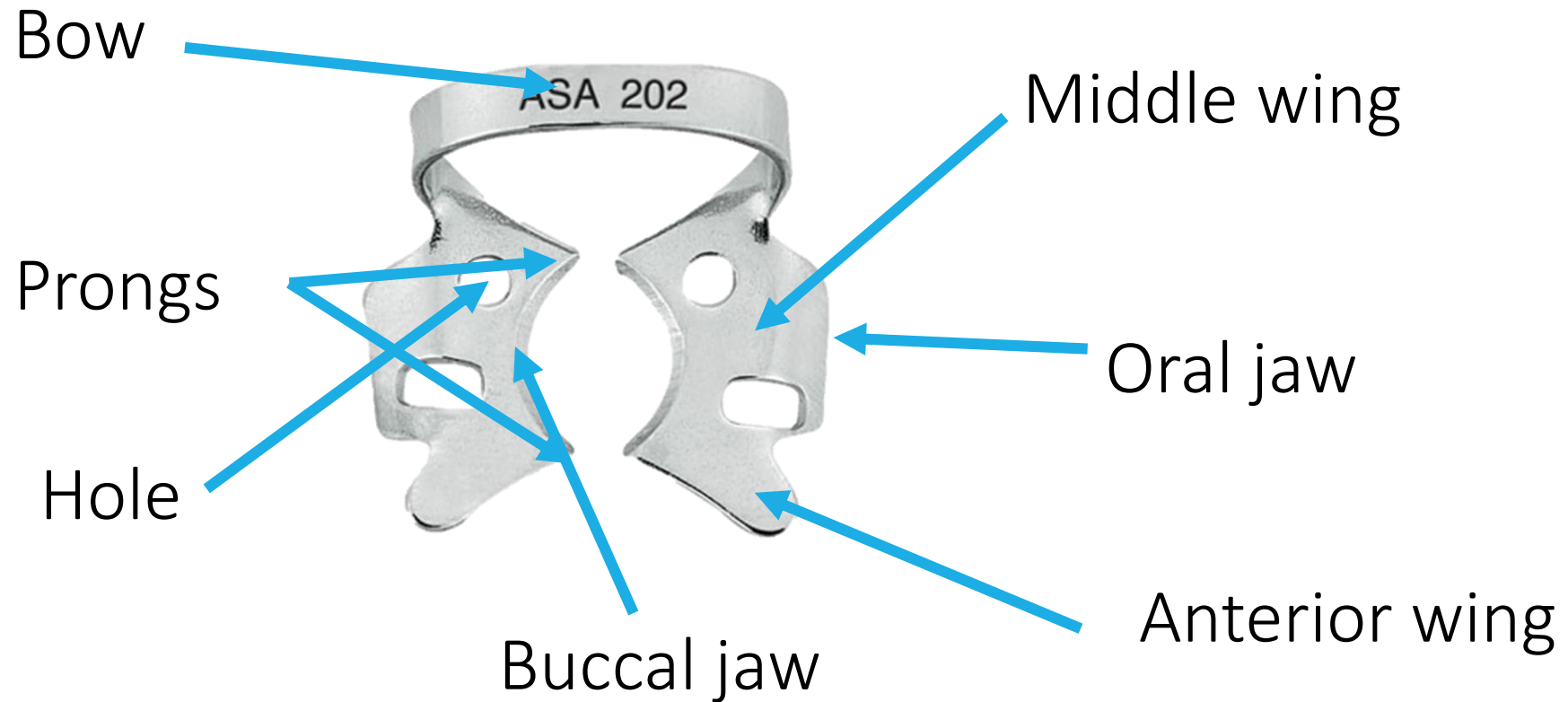
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## 3. Retainer / clamp

- Retainers can fix the rubber dam on the tooth
- Parts:
  - 4 prongs
  - 2 jaws
  - Bow
  - Hole
  - (wings)
- Material: plastic, metal
- The types of the clamps
  - Winged - Wingless
  - Crown - Root
  - Clamps designed for certain teeth groups

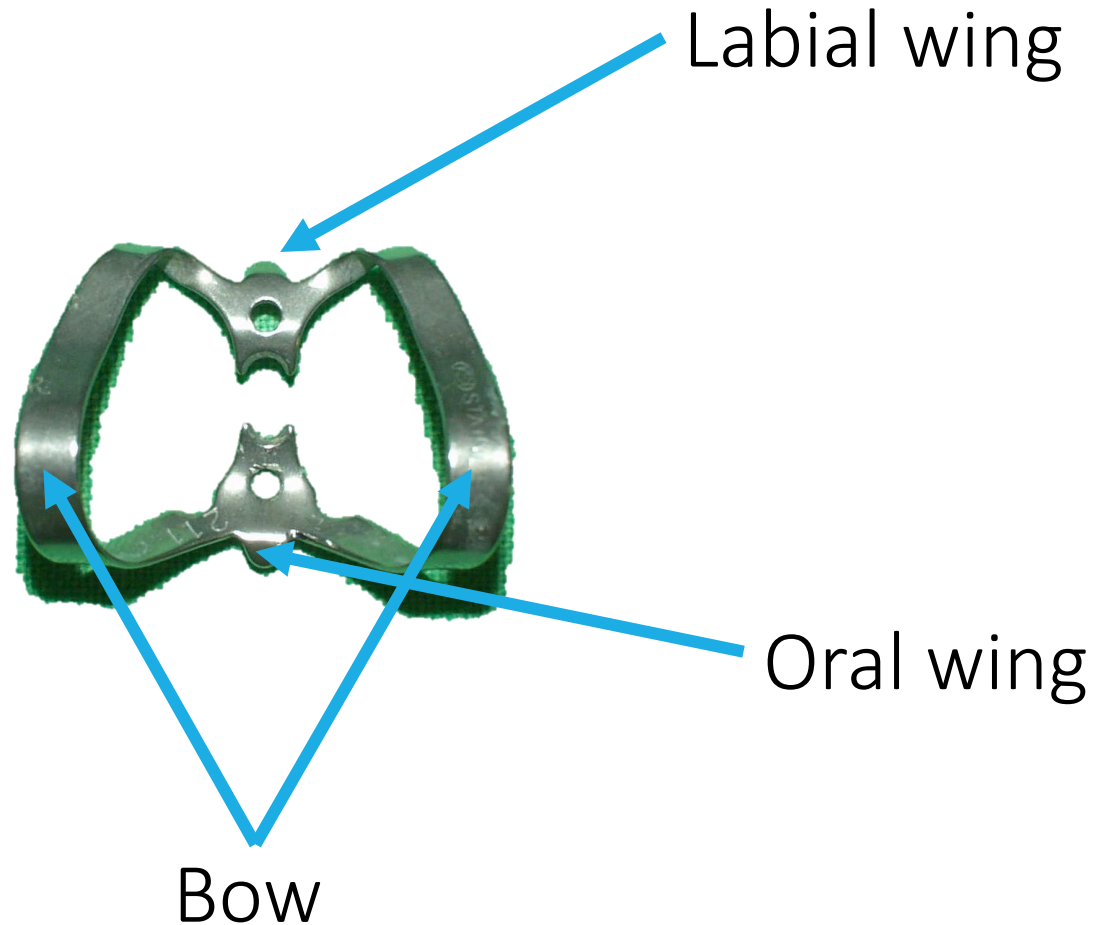
# Materials and instruments - retainer

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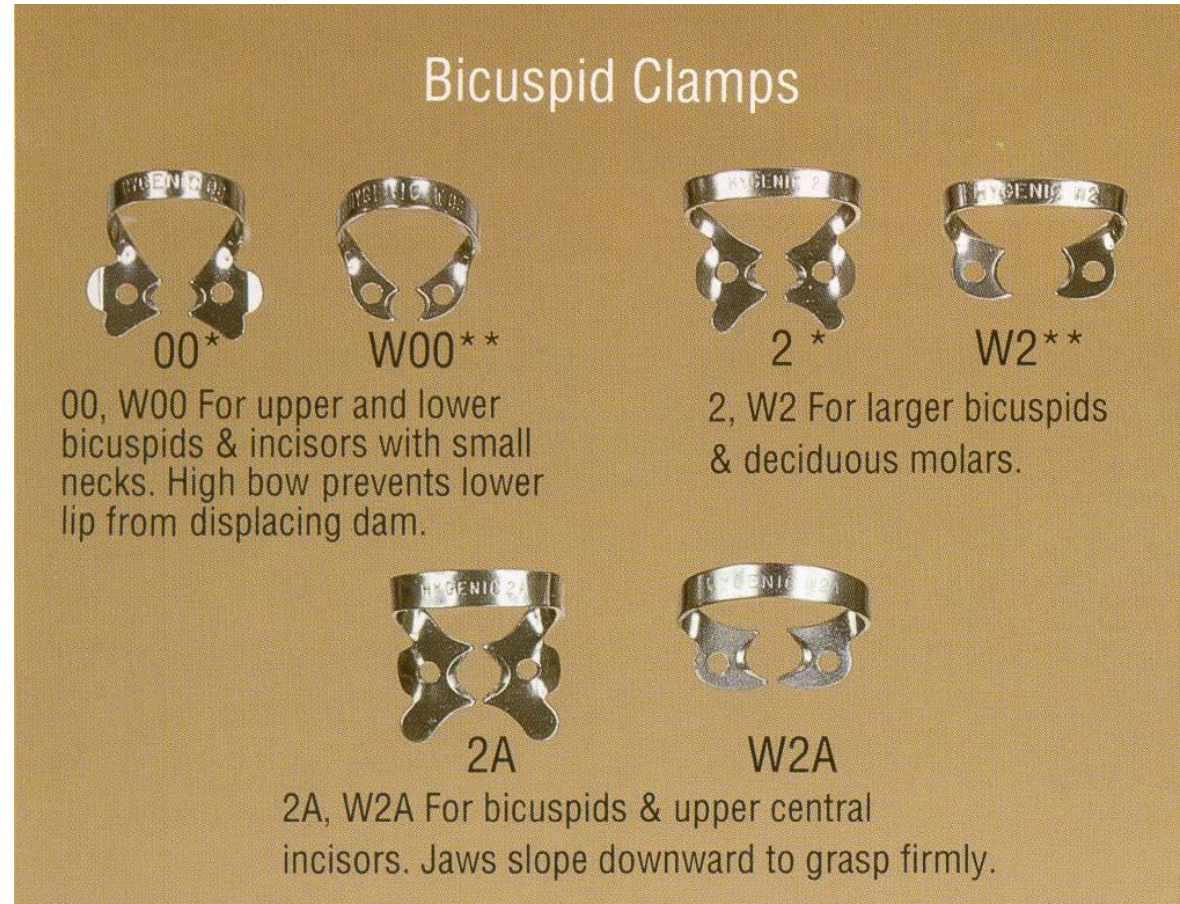


# Materials and instruments - retainer

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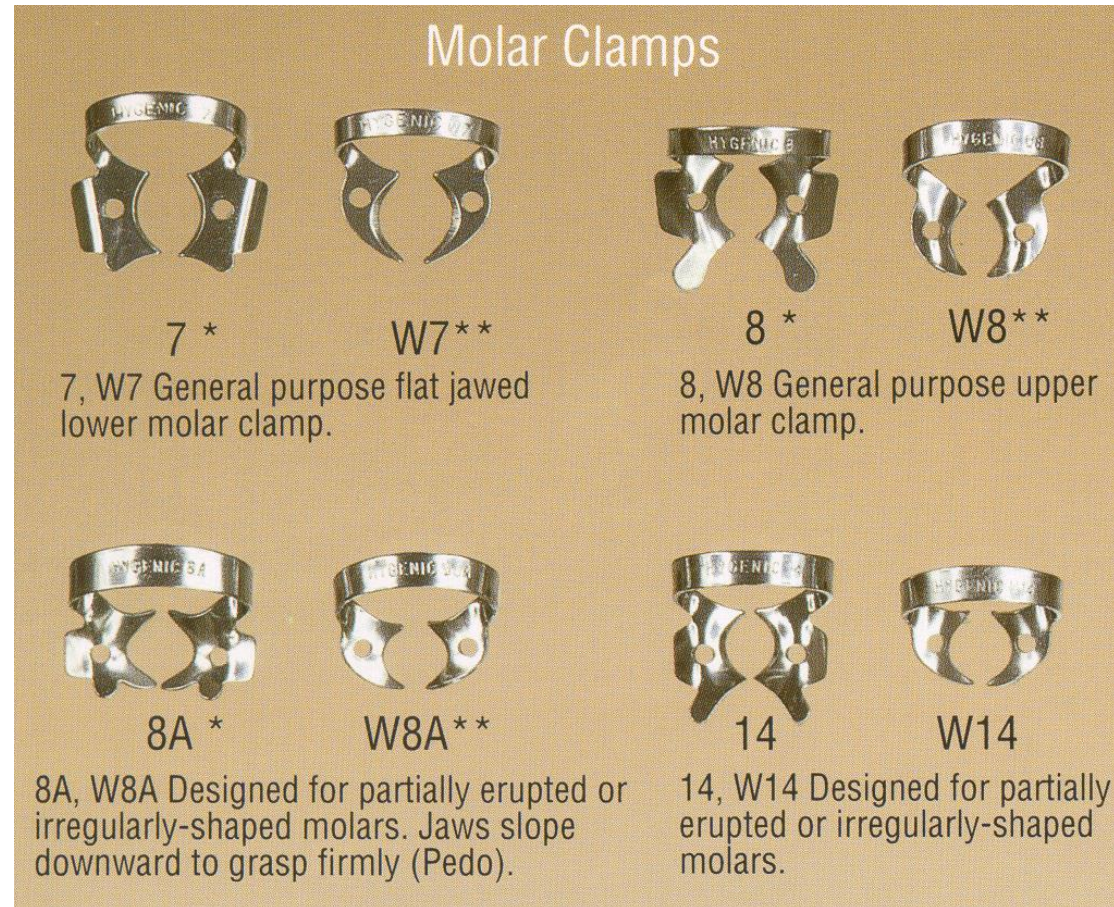


# Materials and instruments - retainer





# Materials and instruments - retainer



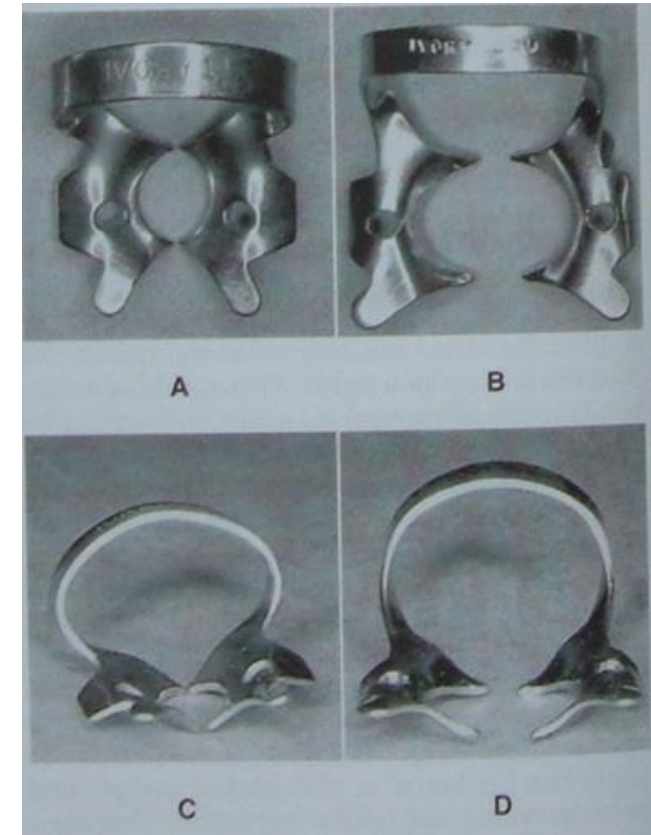


# Materials and instruments - retainer



# Materials and instruments - retainer

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# Materials and instruments - retainer

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# Materials and instruments - retainer

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# Materials and instruments - retainer

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# Materials and instruments - retainer

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# Materials and instruments

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- 4. Retainer forceps
  - With the forceps can we place the clamps on the teeth



# Forceps by Ivory

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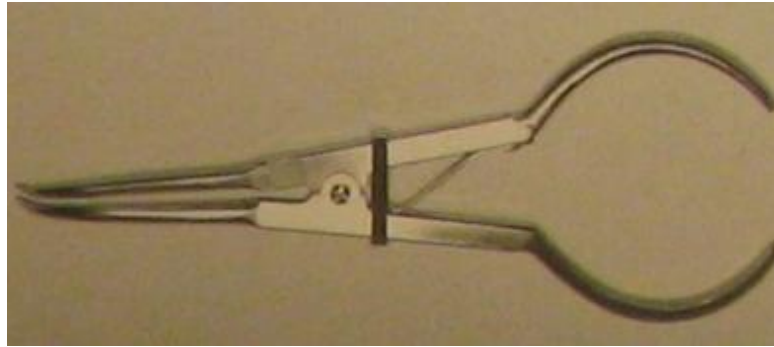
# Forceps by Aesculap



# Other forceps

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By Martin



By Krauskopf



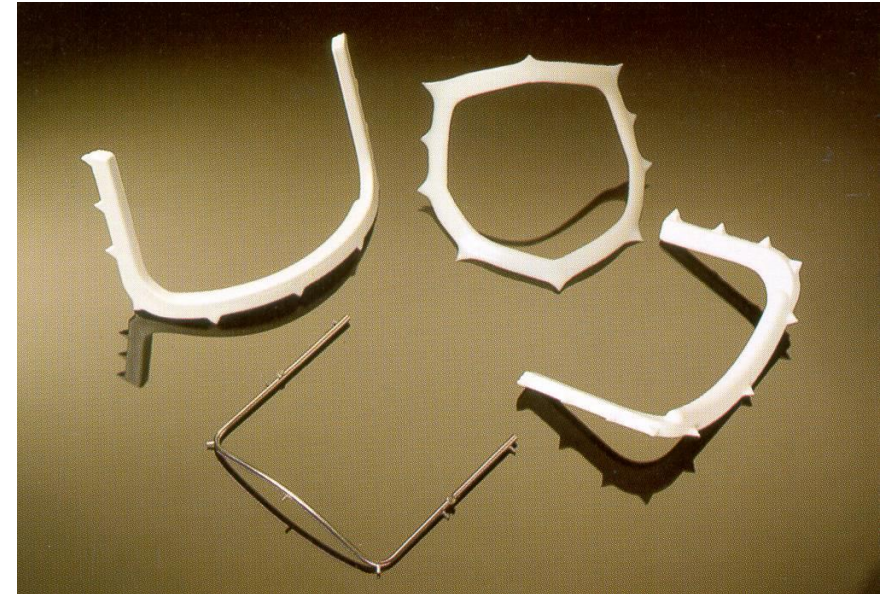
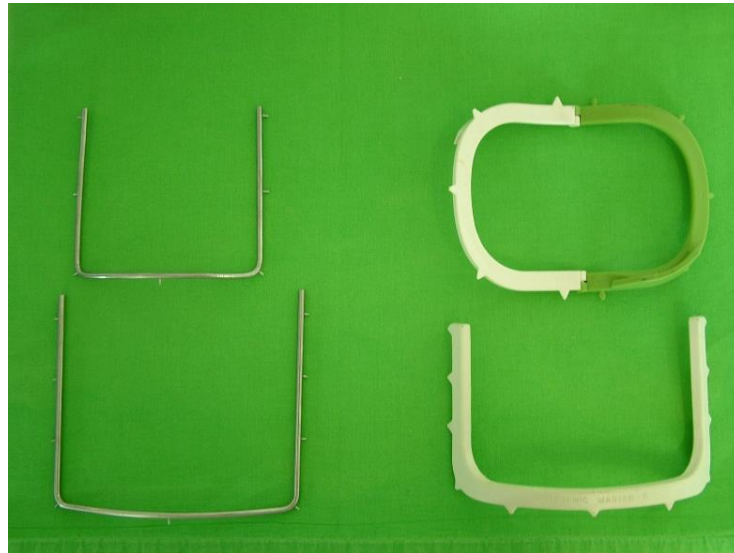


# Materials and instruments

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## 5. Holder / frame

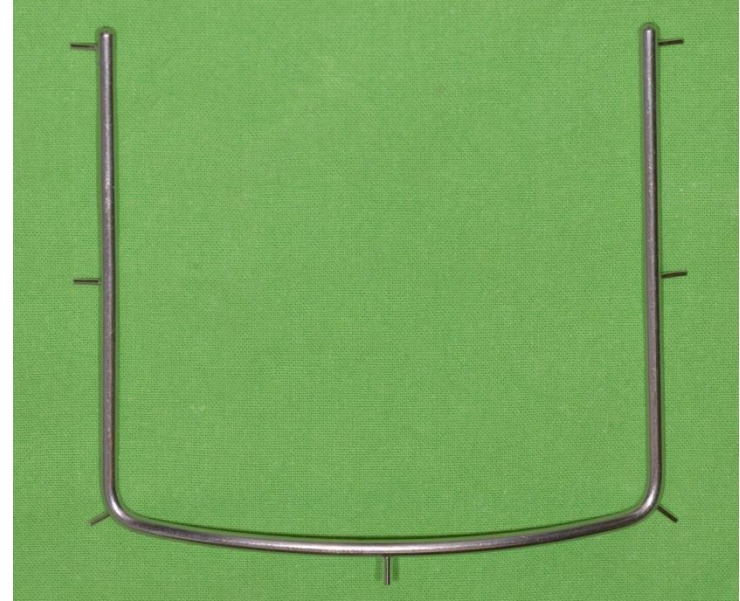
- Maintains the border of the rubber in position
- Metal (By Young)
- Plastic
  - Solid (Nygard-Ostby type)
  - Fould-up type (Sauveur type)



# Materials and instruments - frame

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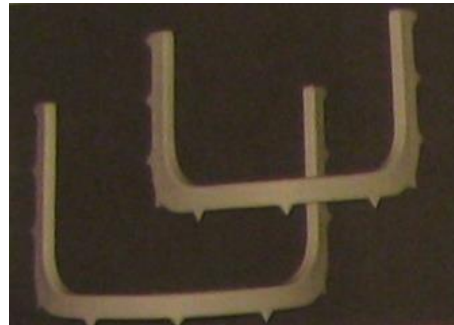
Metal Holder (By Young)



# Materials and instruments - frame

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Plastic (Nygard-Ostby)

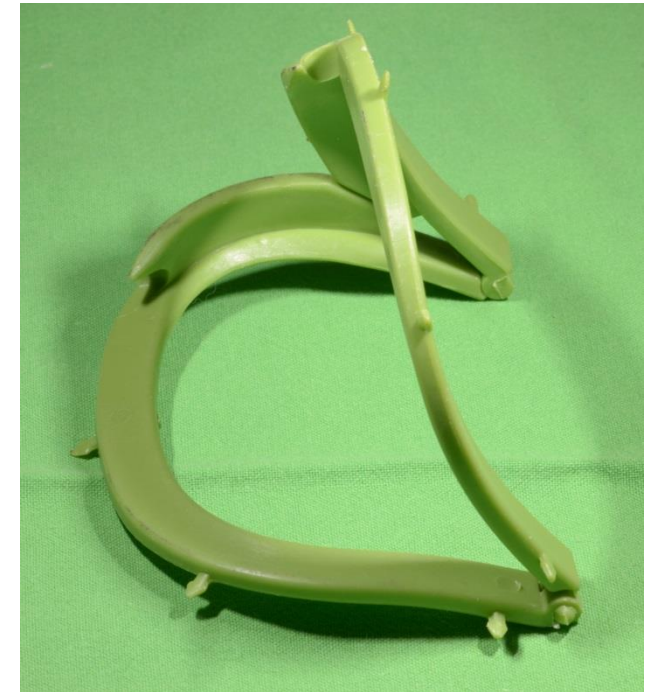
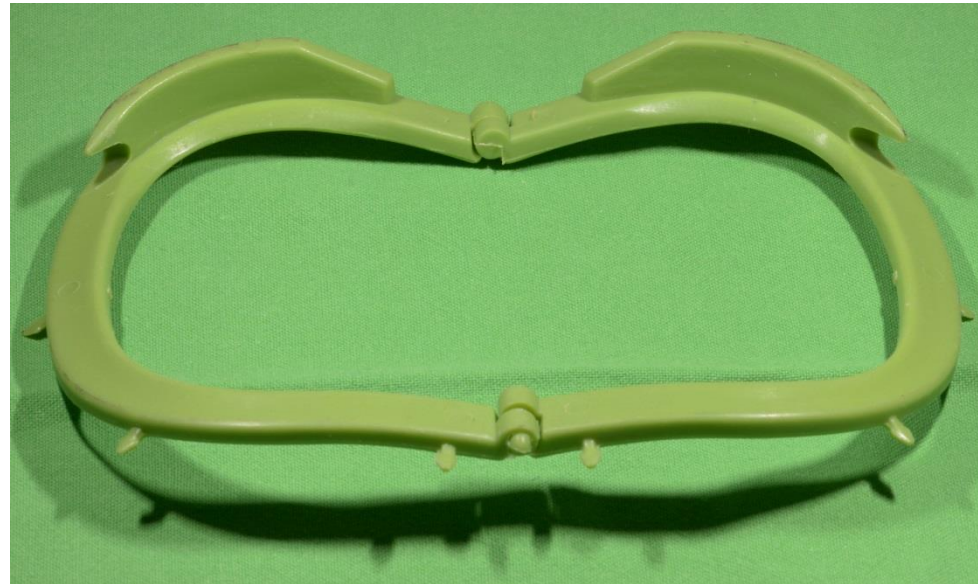
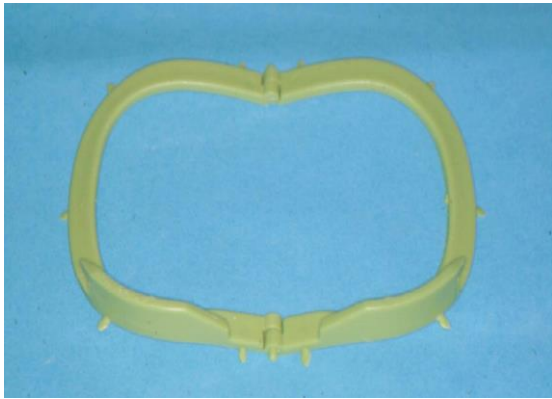




# Materials and instruments - frame

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Plastic (By Sauveur)



# Materials and instruments - frame

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# Materials and instruments - frame

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# Materials and instruments

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## 6. Napkin

- Placed between the rubber dam and the patient skin
- Reduce the possibility of allergic reactions
- Absorbs saliva
- Cushion
- Convenient method of wiping the patient's lips

# Materials and instruments

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- 7. Lubricant
- 8. Rubber dam template, rubber stamp
- 9. Flowable rubber dam / block out resin
- 10. Anchor
  - Wedge
  - Dental floss, dental tape
  - Small piece of rubber dam
  - Rubber tubes

11. Flaggs



# Hole size and position

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Template

Stamp

We can mark the tooth in the oral cavity

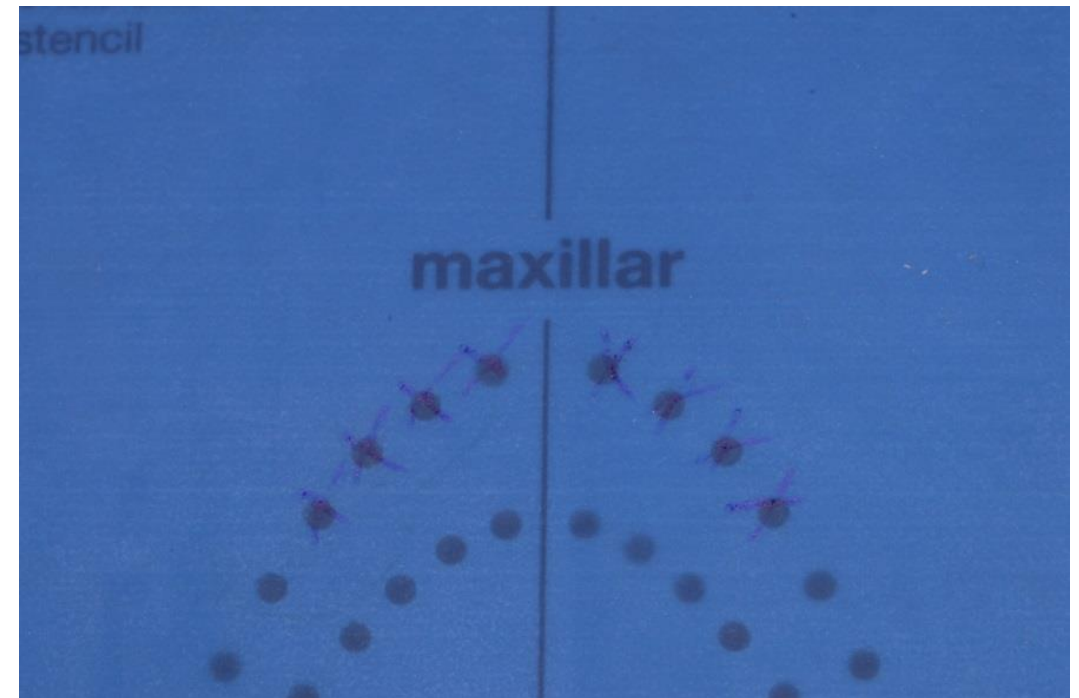
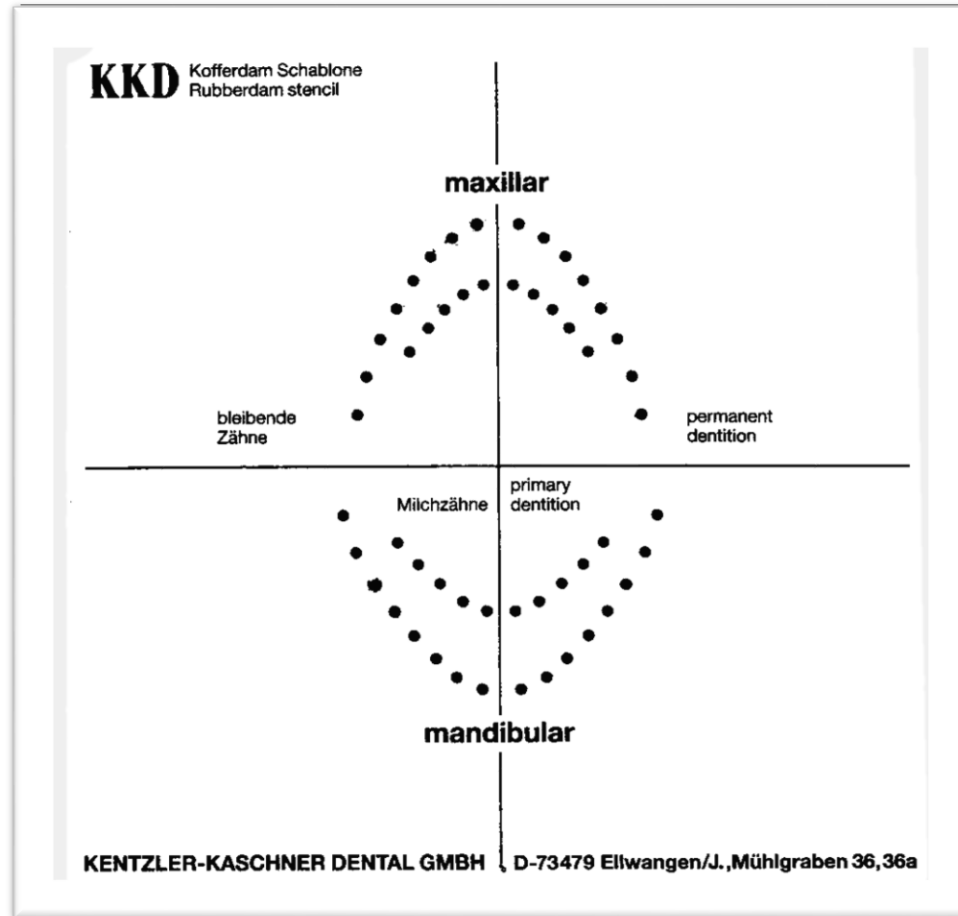
At least 3 teeth isolation recommended

Distance between 2 holes is 6 mm

Posterior clamp is placed first

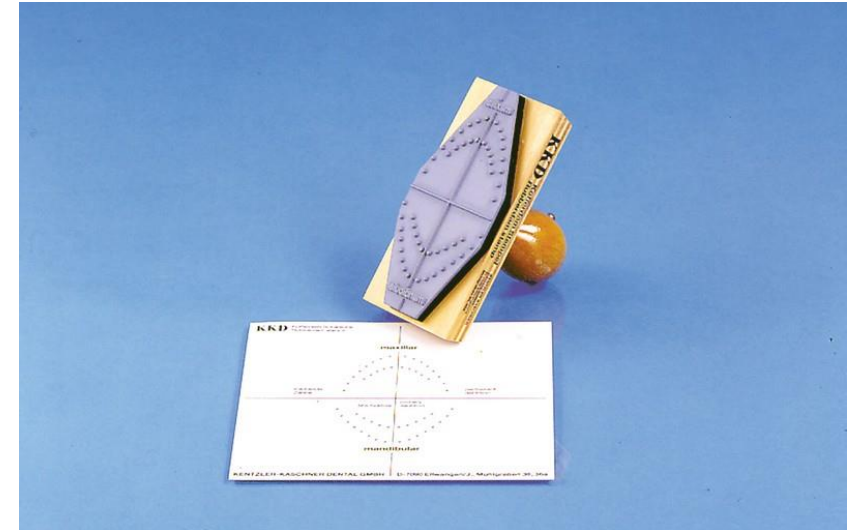


# Materials and instruments - template



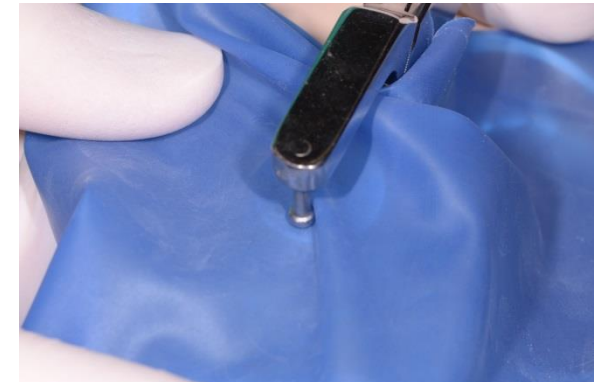
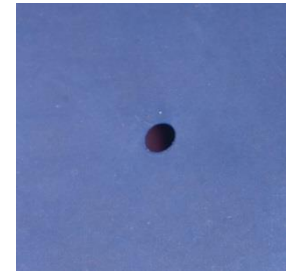
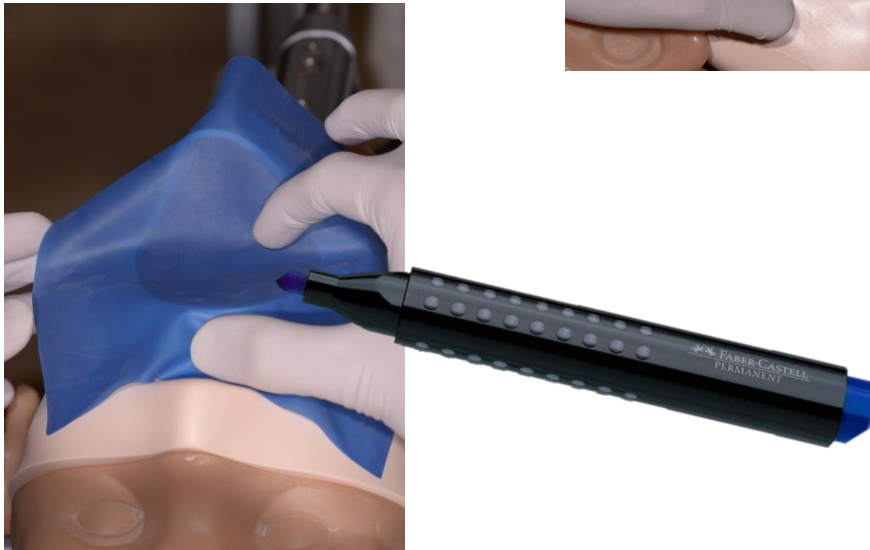
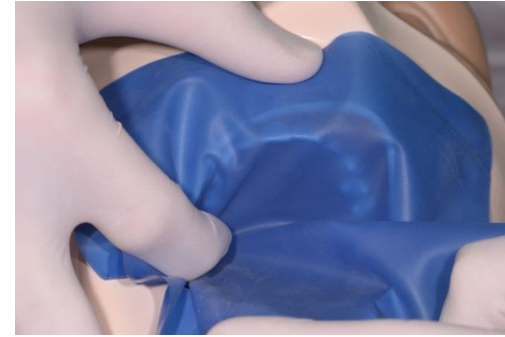
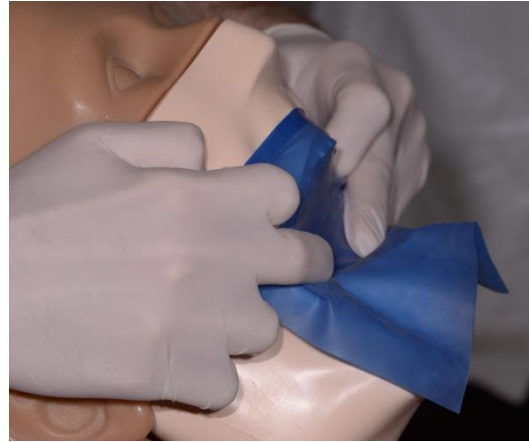
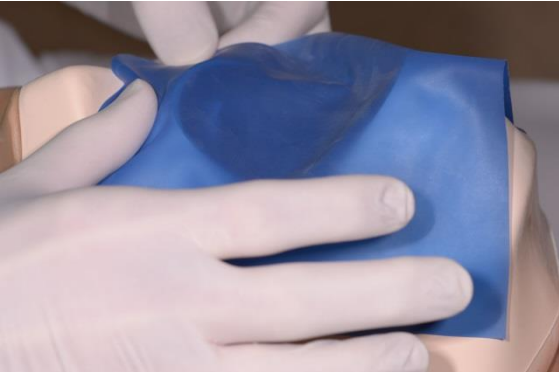
# Materials and instruments - stamp

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# Materials and instruments – in oral cavity

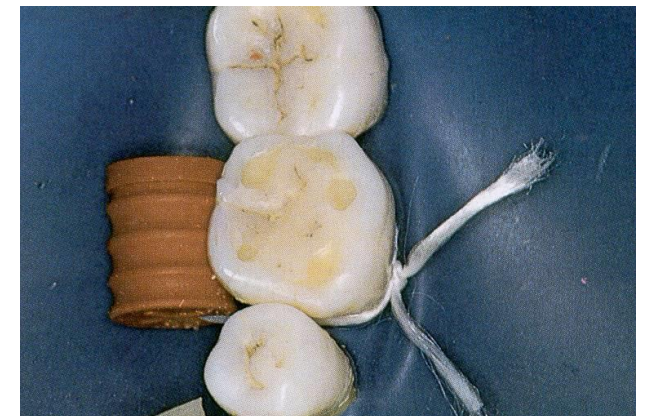
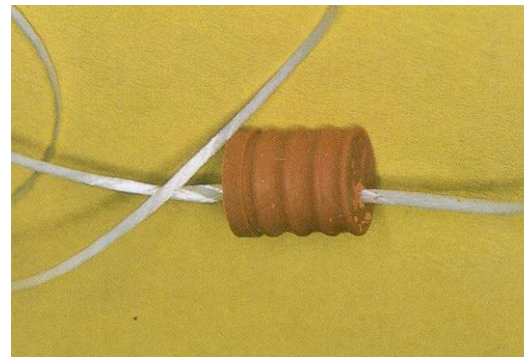
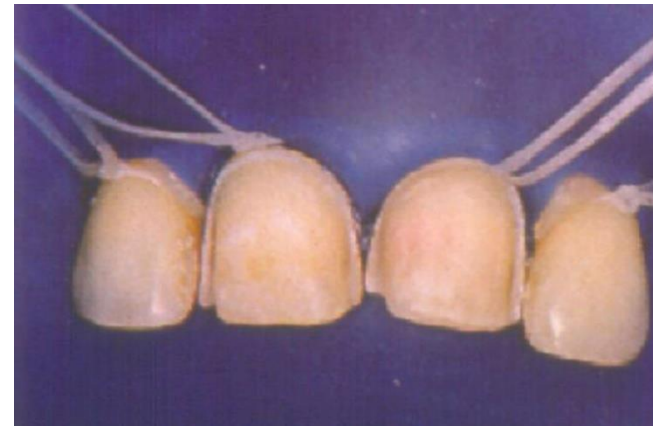
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# Materials and instruments - anchor

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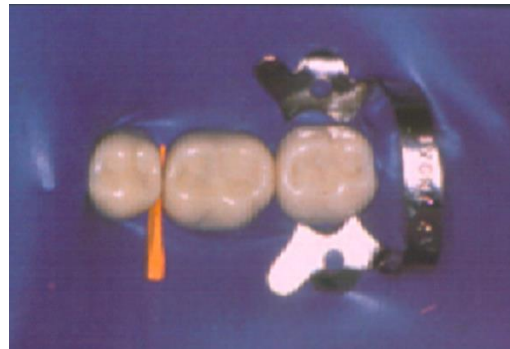
# Materials and instruments - anchor

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# Materials and instruments - anchor

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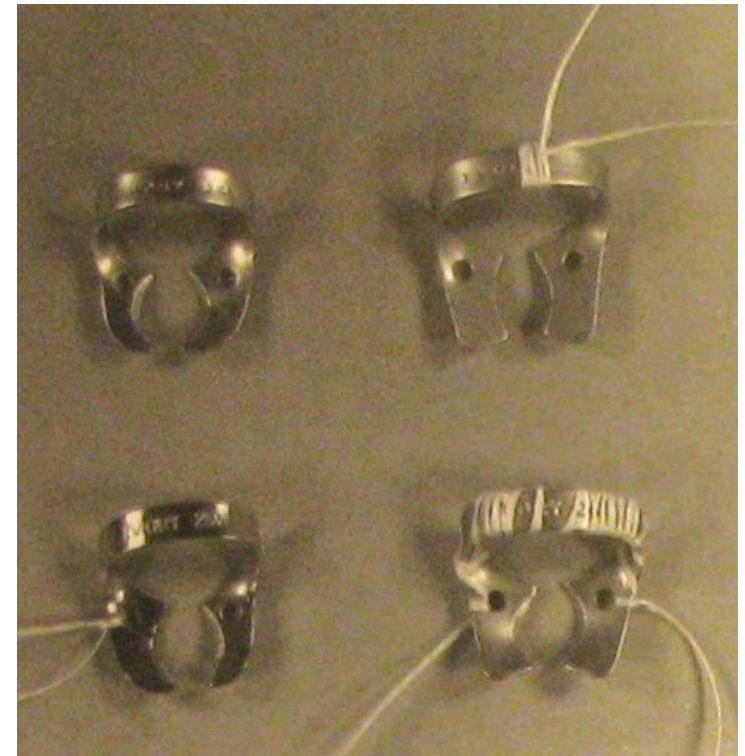
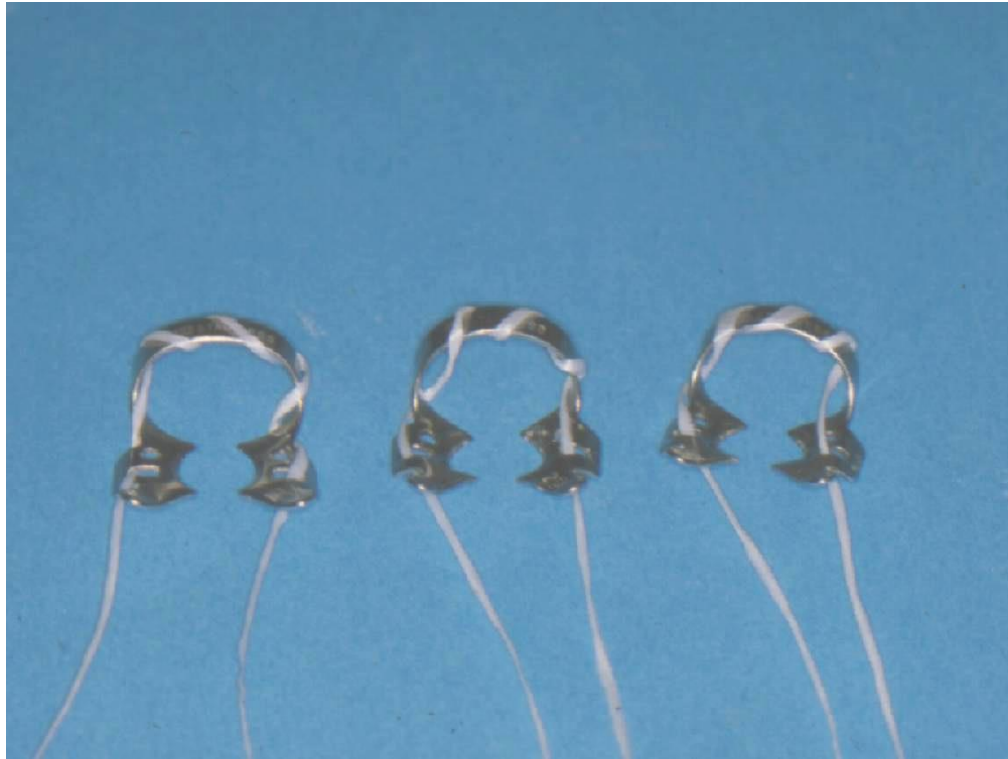


# Steps

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- Inspect the tooth/teeth
- Choose the appropriate clamp
- Place the dental floss on the clamp
- Clamp try in (stability, retention)
- Make the hole on the rubber dam







# Clamp try in





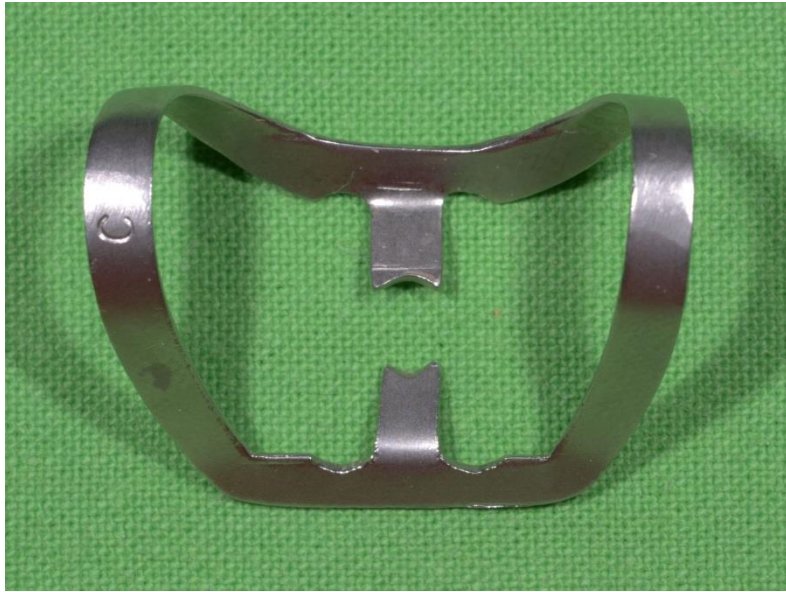
# Lower, winged front clamp

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# Lower, wingless front clamp

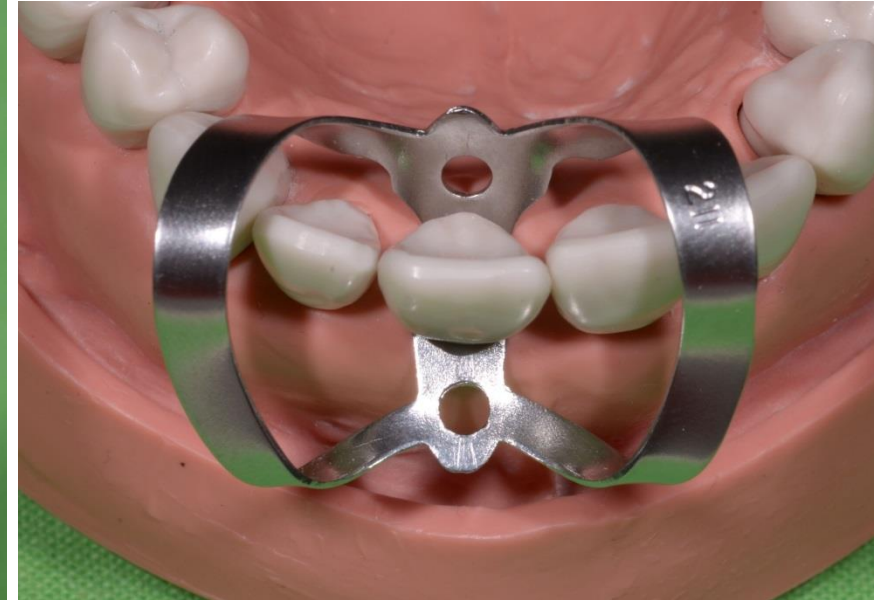
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# Upper, winged front clamp

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# Winged premolar clamp

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# Winged premolar clamp

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# Winged molar clamp

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# Winged molar clamp

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# Winged molar clamp

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# Placement

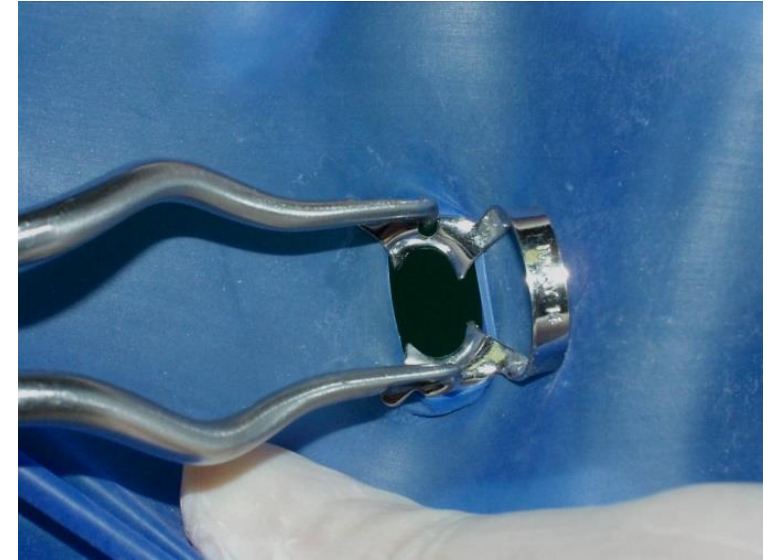
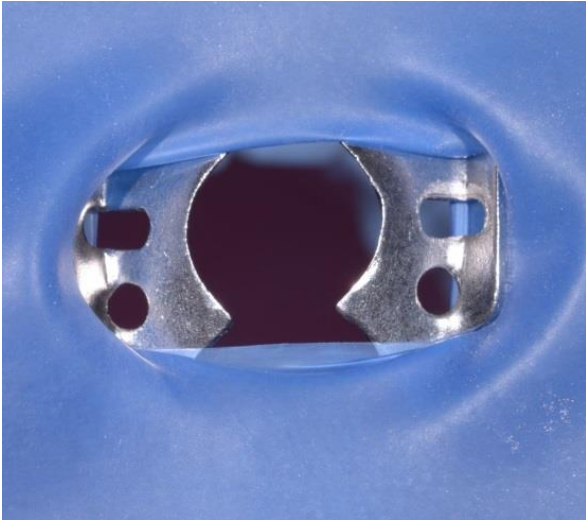
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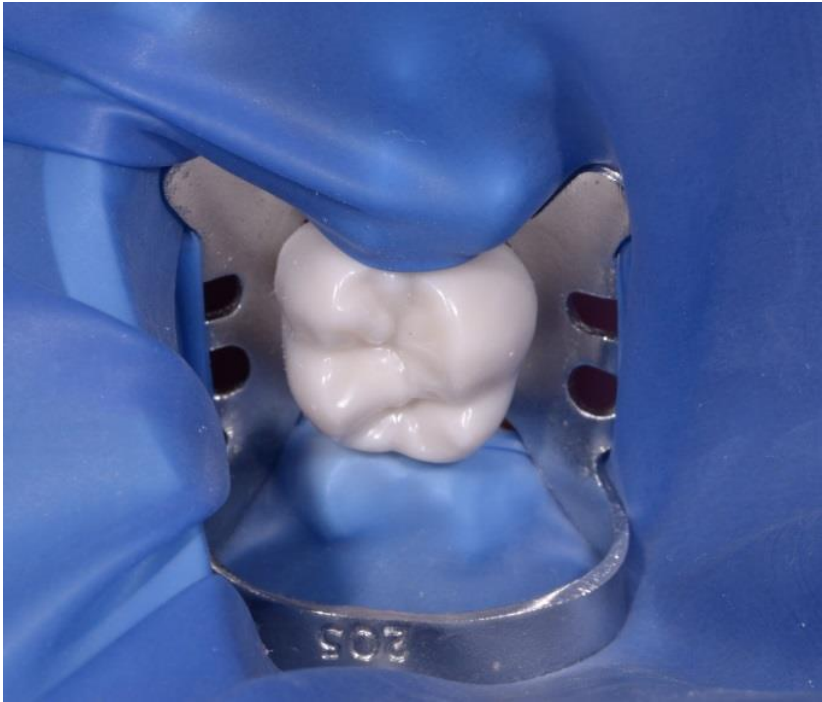
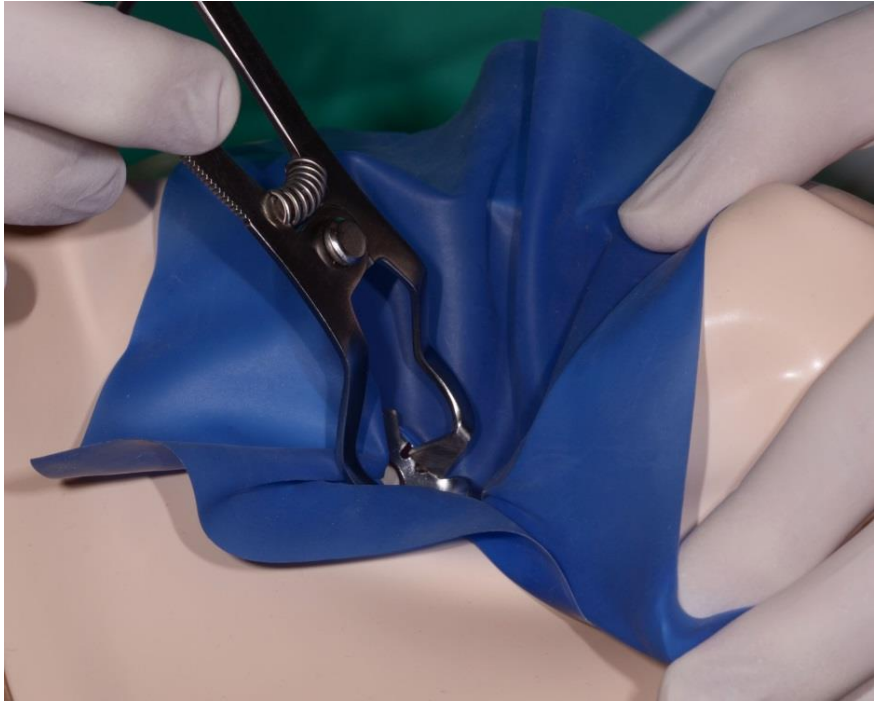
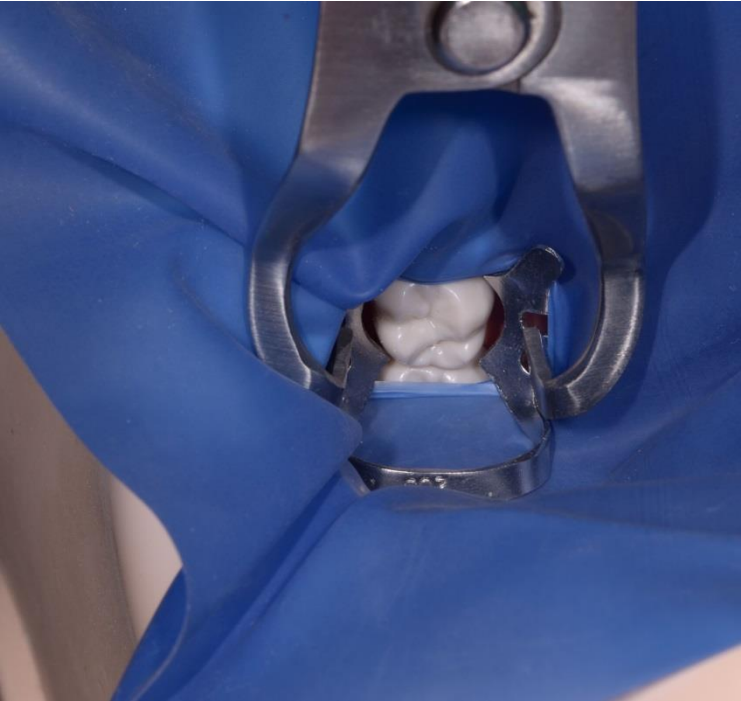
1. Place the **rubber dam with** the **retainer**, then the holder
  - Rubber-dam on the clamp's wings
  - Rubber-dam on the clamp's bow
2. Place **first the rubber dam**, then the clamp, and the the frame
3. Place **first the clamp**, then pull the rubber dam through the clamp and then the holder
4. Place in **one piece** the retainer, the rubber dam and the holder

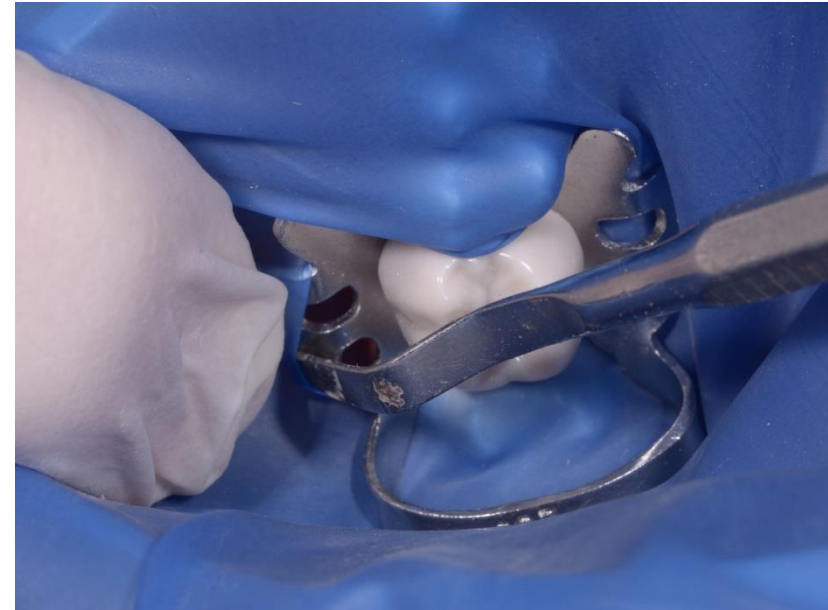
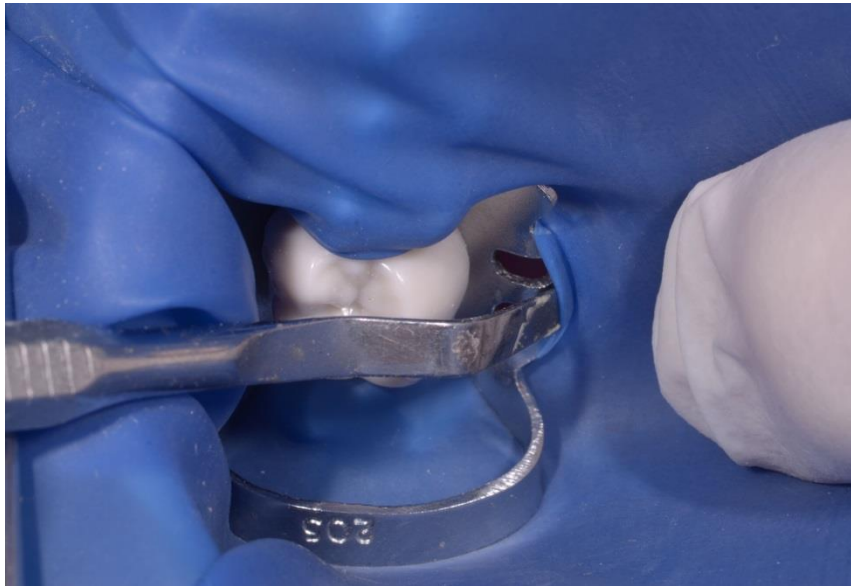
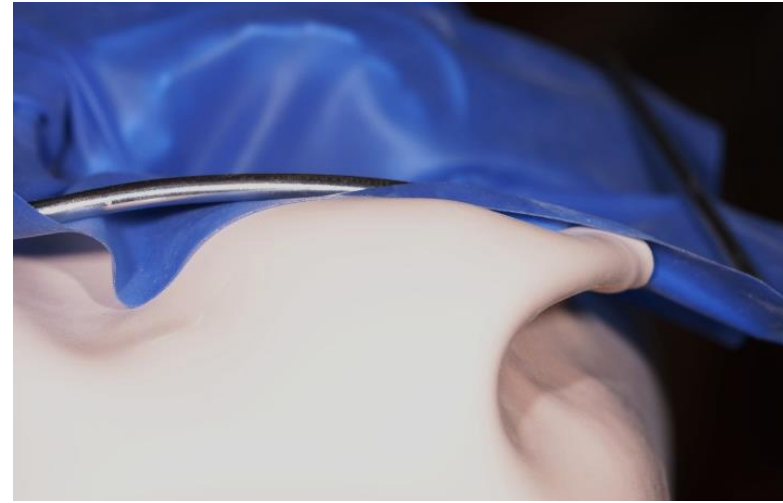
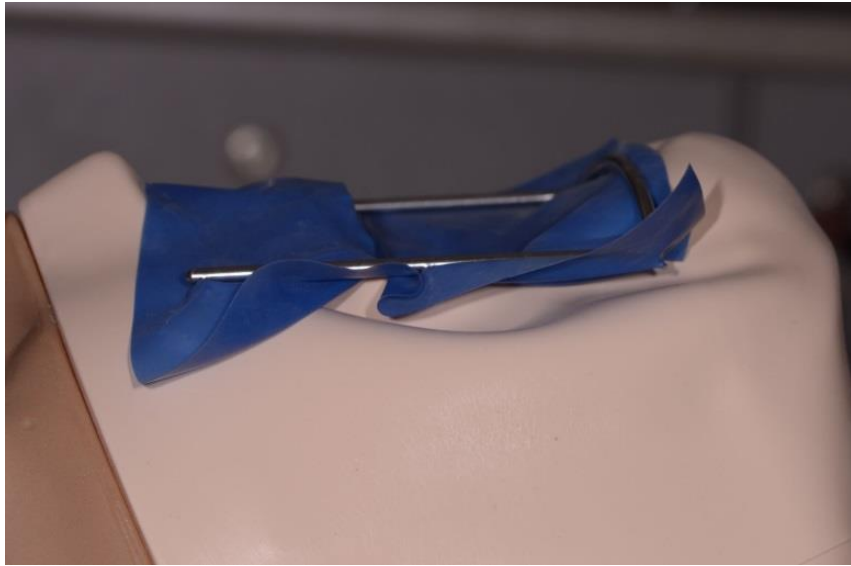
# Place the rubber dam with the retainer, then the holder

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Rubber-dam on the clamp's wings





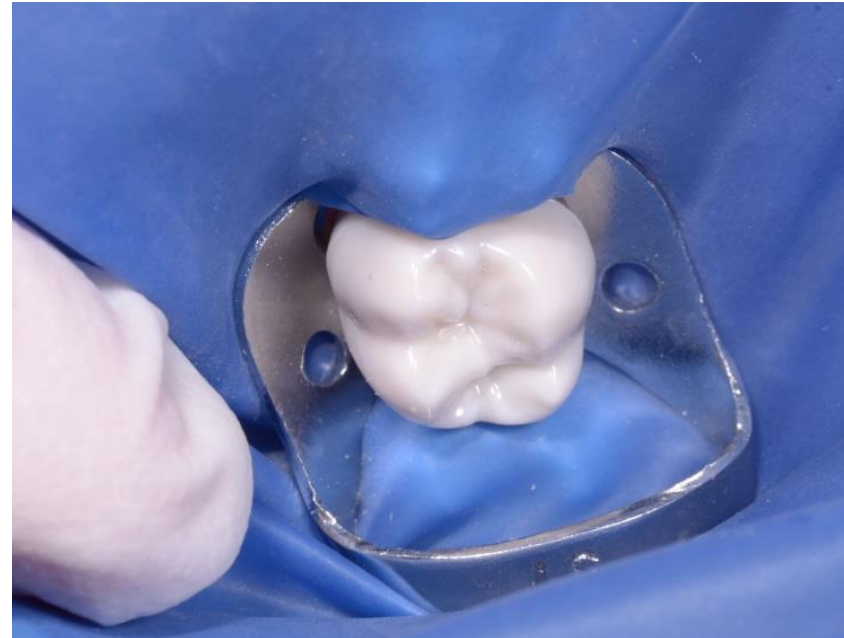
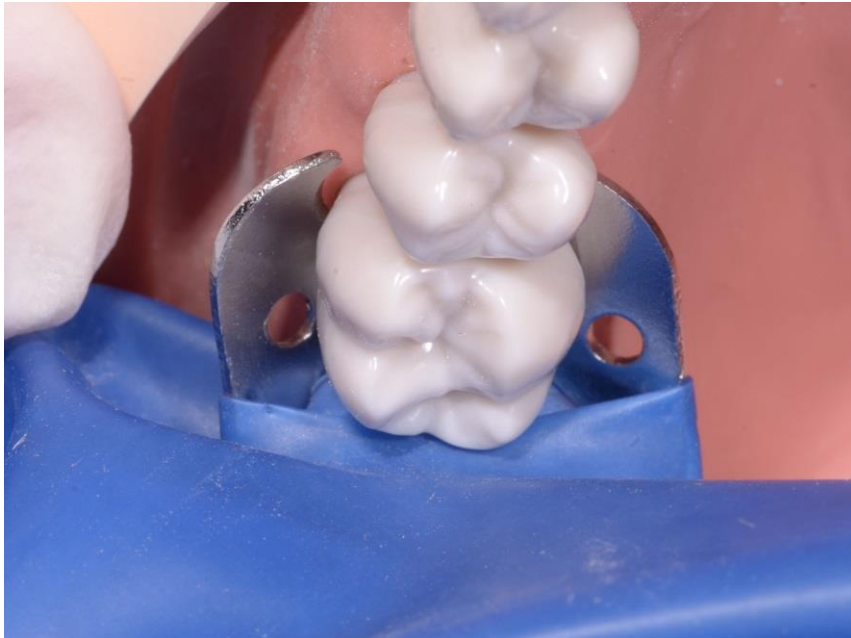
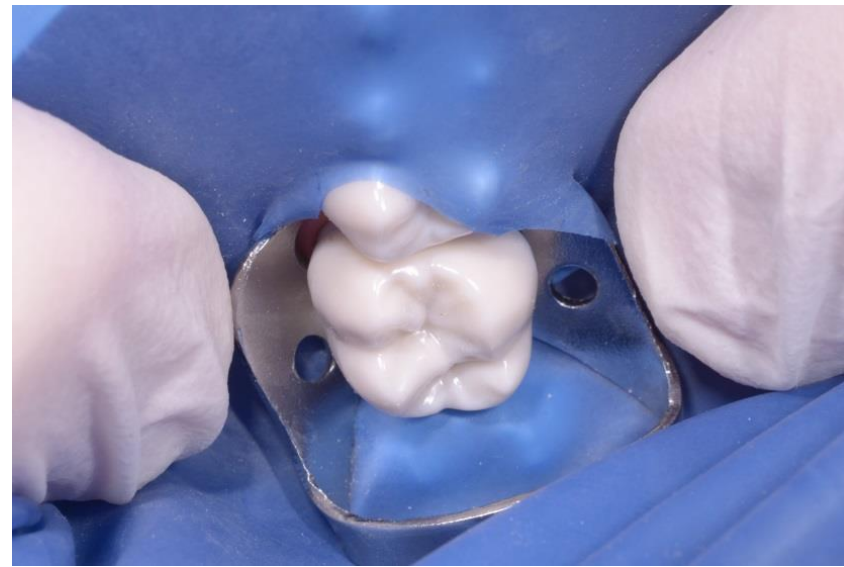
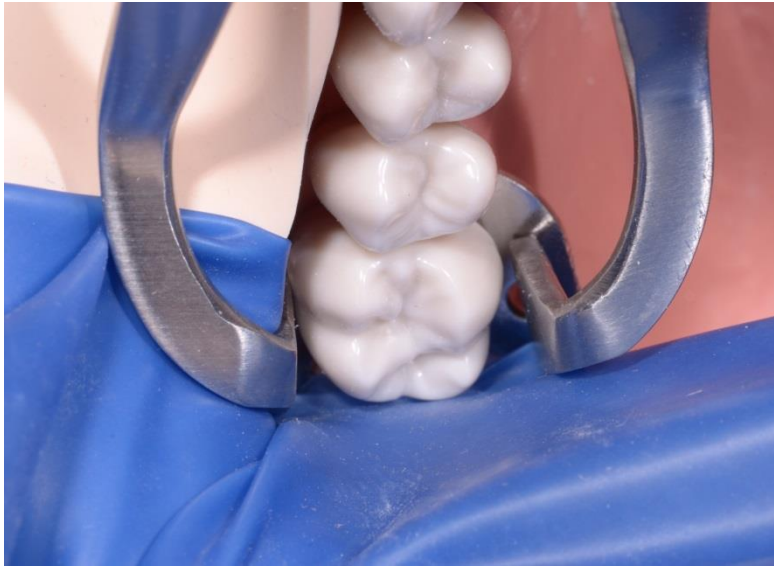




# Rubber-dam on the clamp's bow

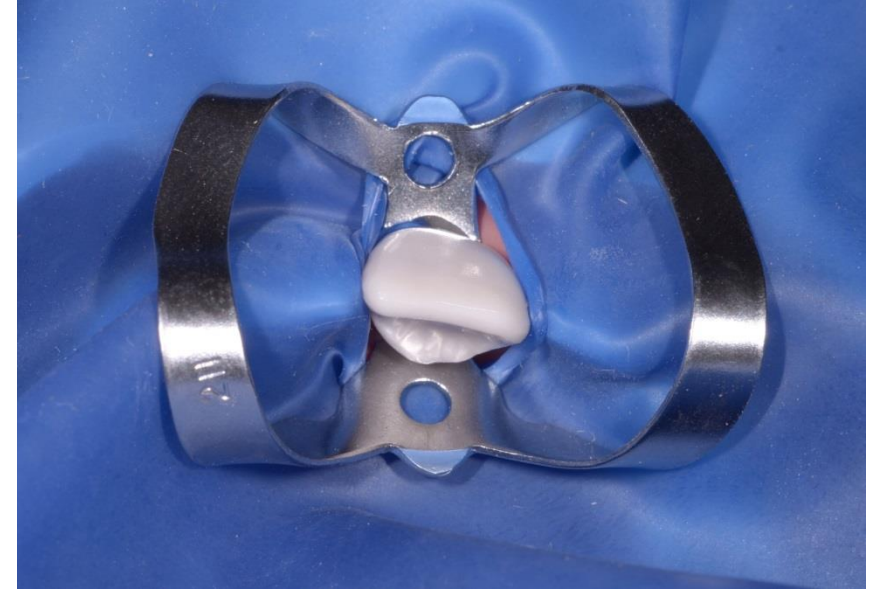
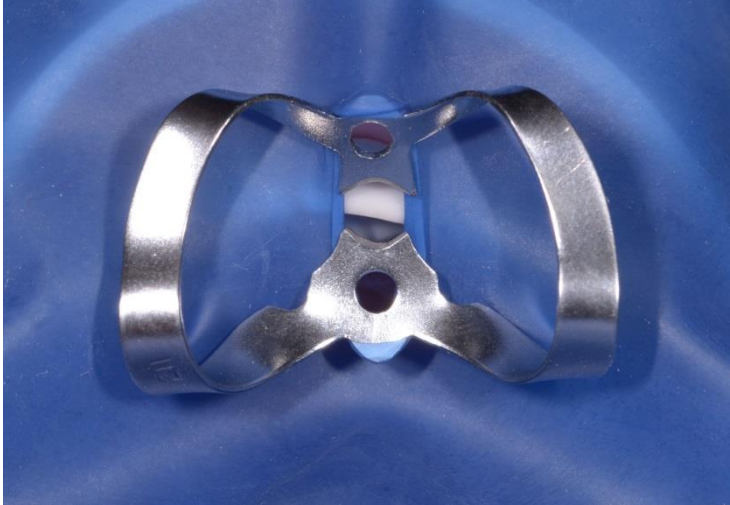
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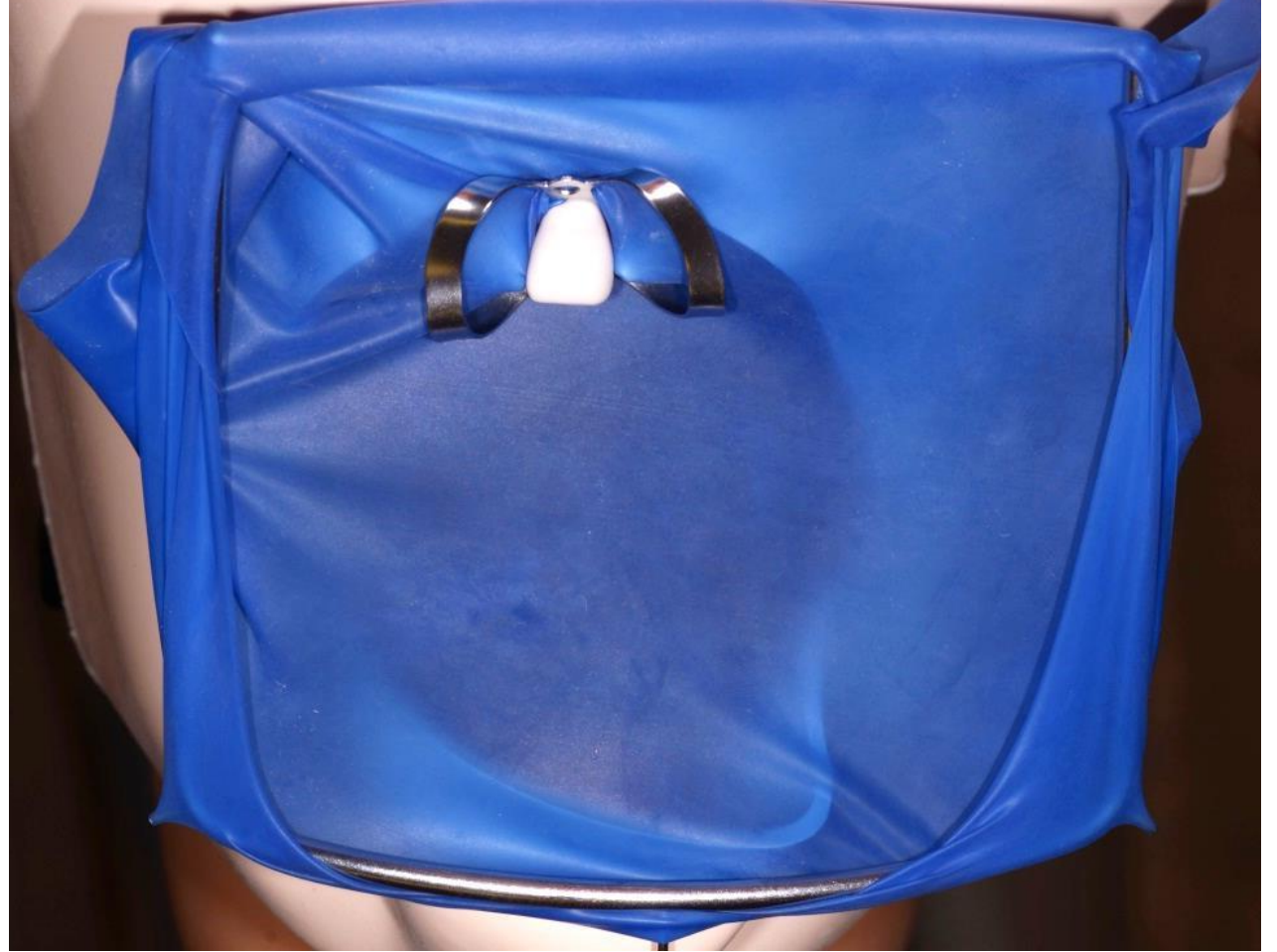
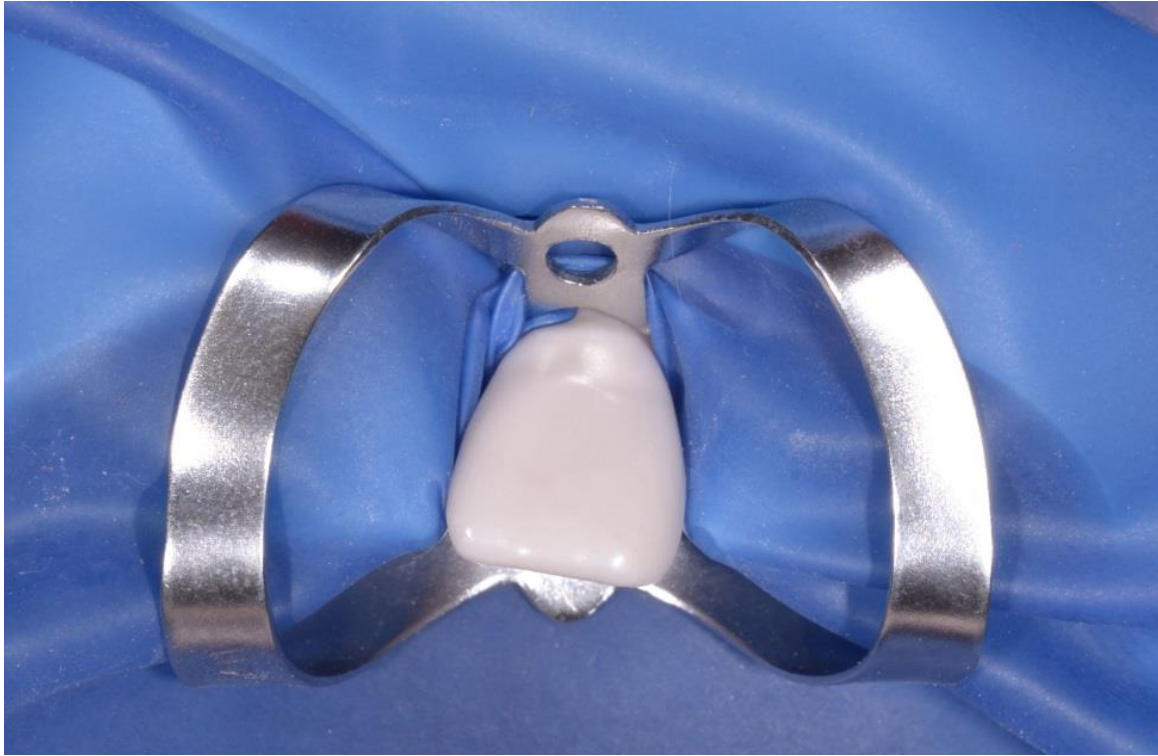


# Front-tooth isolation

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# Place first the rubber dam, then the clamp, and the the frame

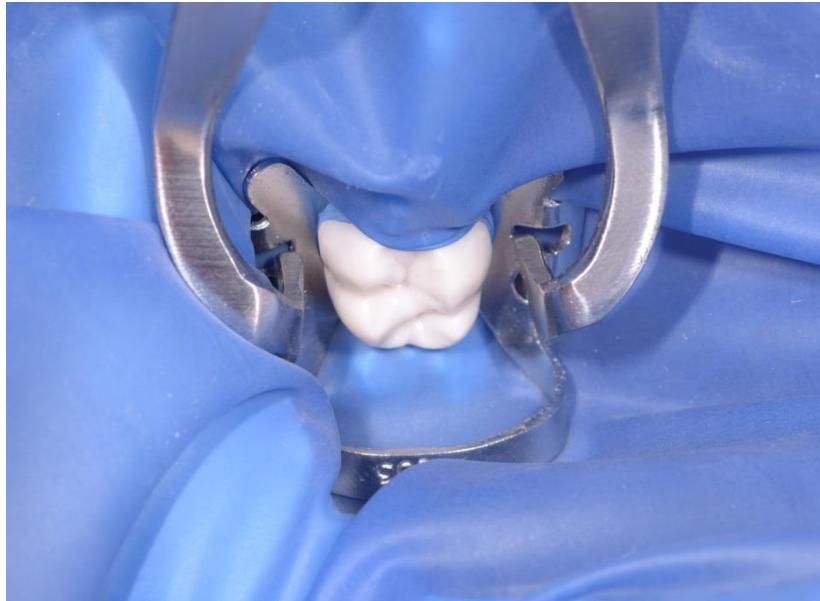
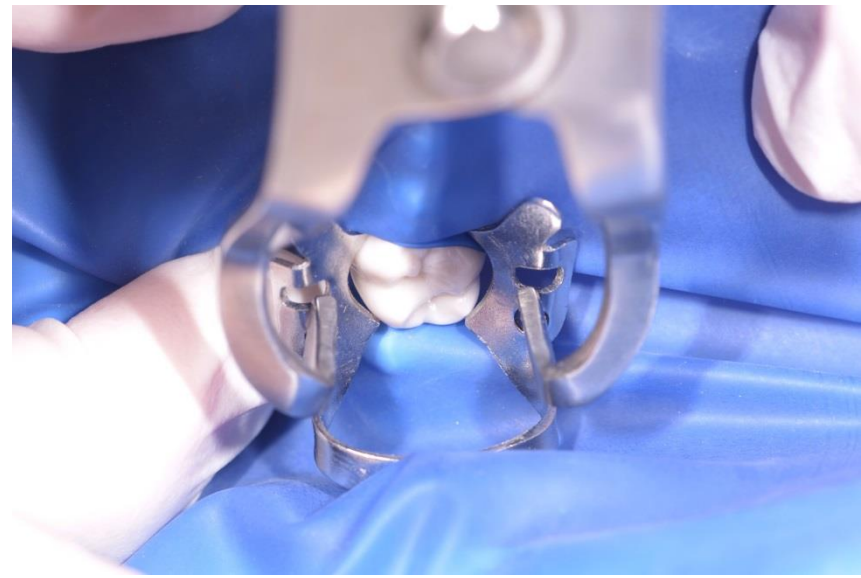
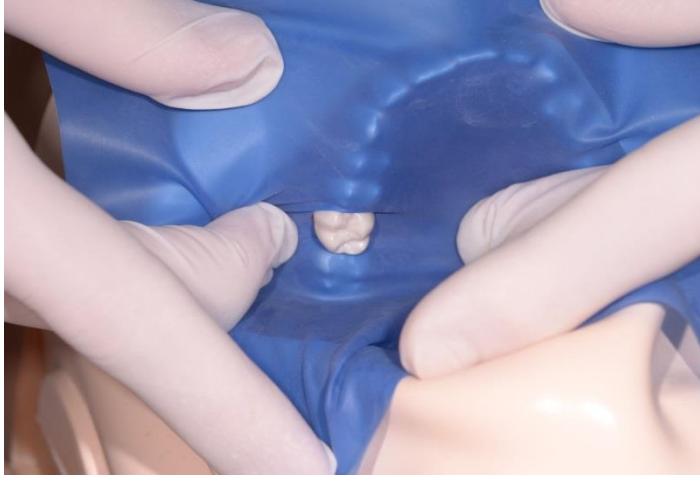
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We need assistance

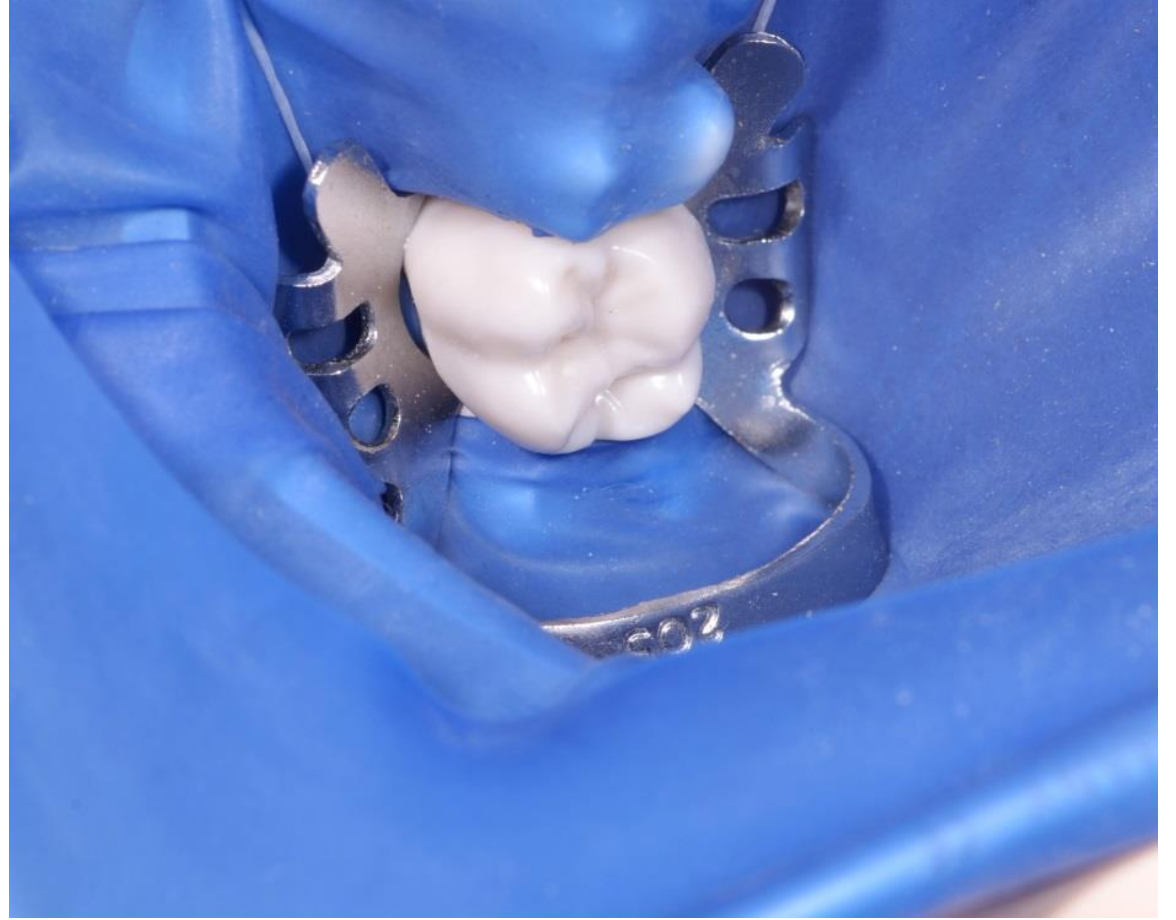
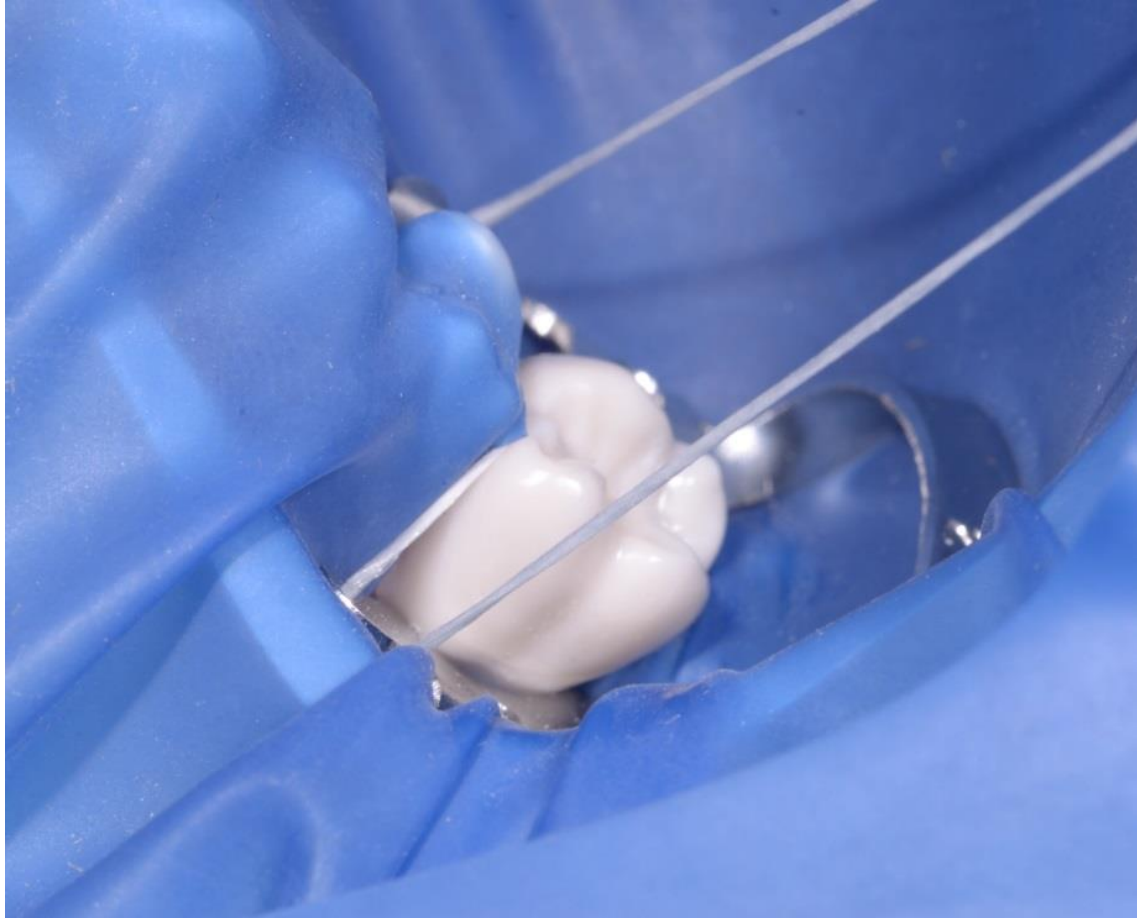
Nurse hold the rubber in position

Dentist place the clamp on the tooth

Then place the holder

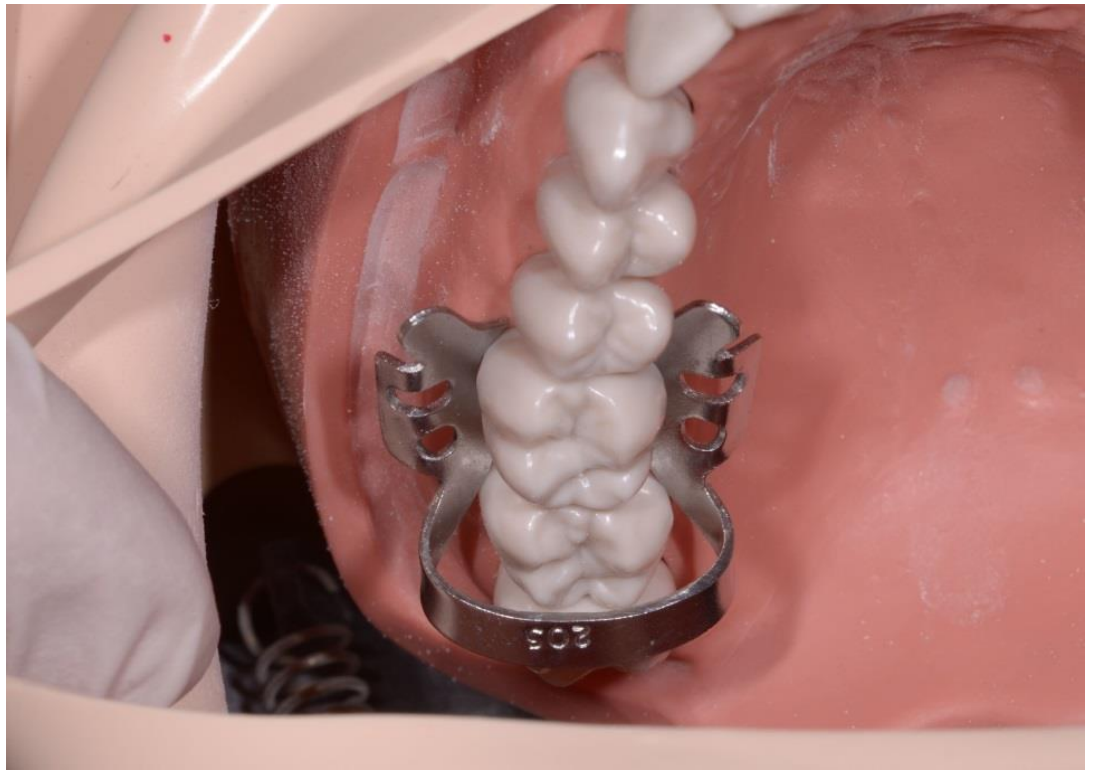
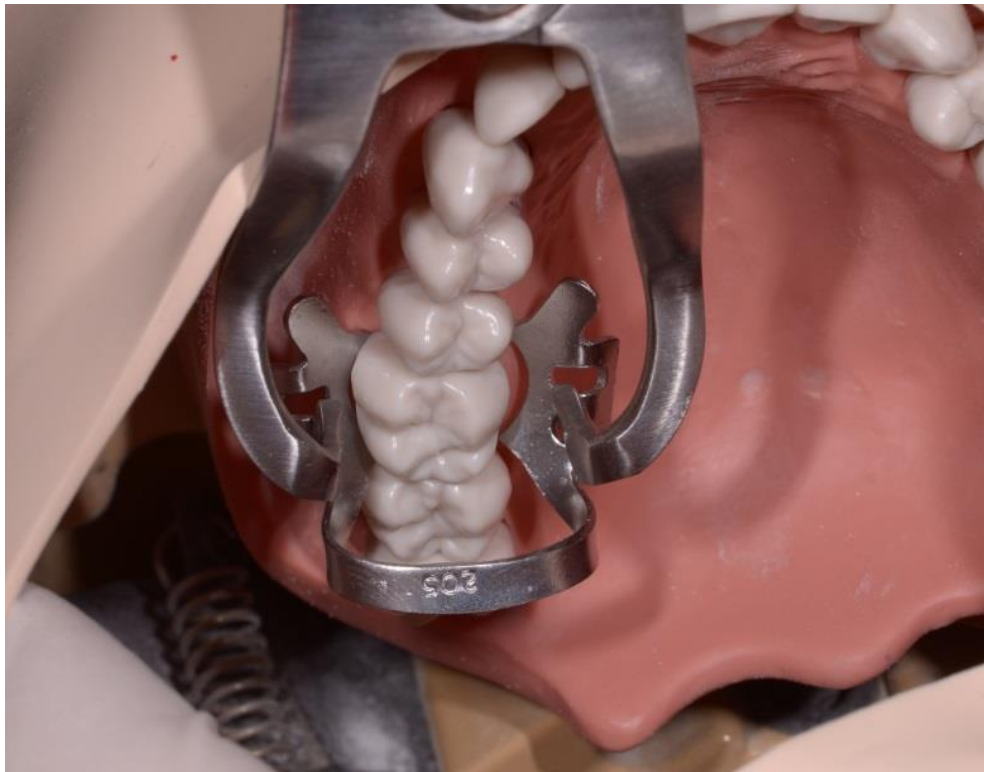


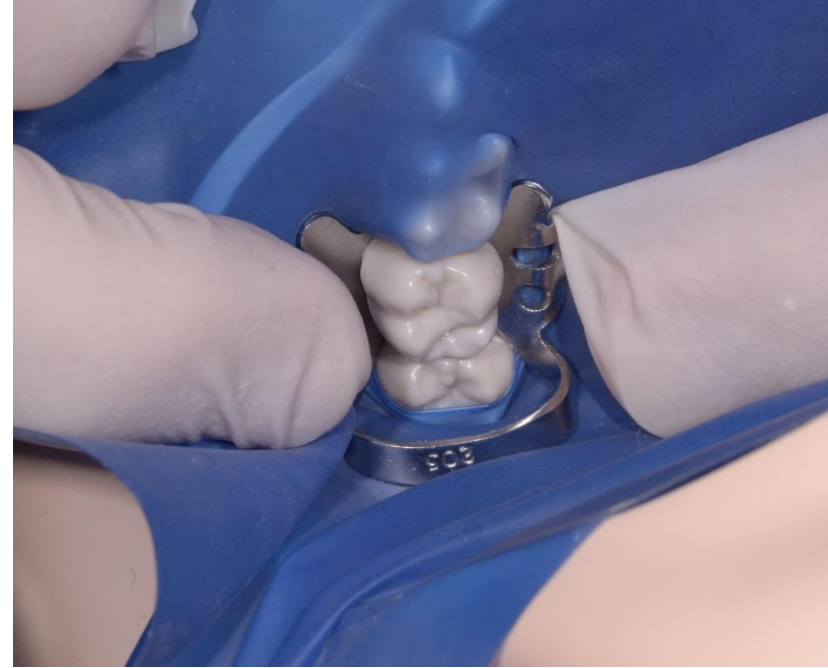
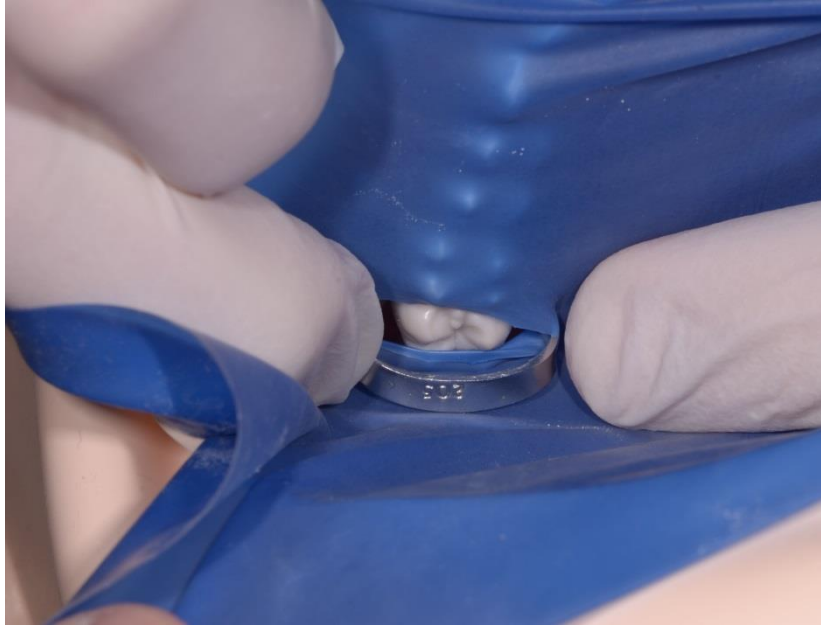




Place first the clamp, then pull the rubber dam through the clamp and then the holder

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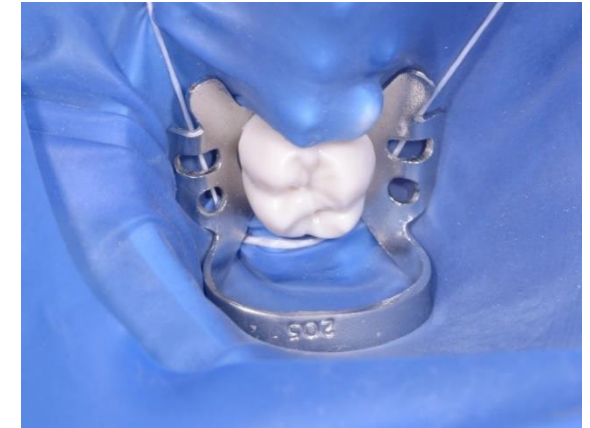
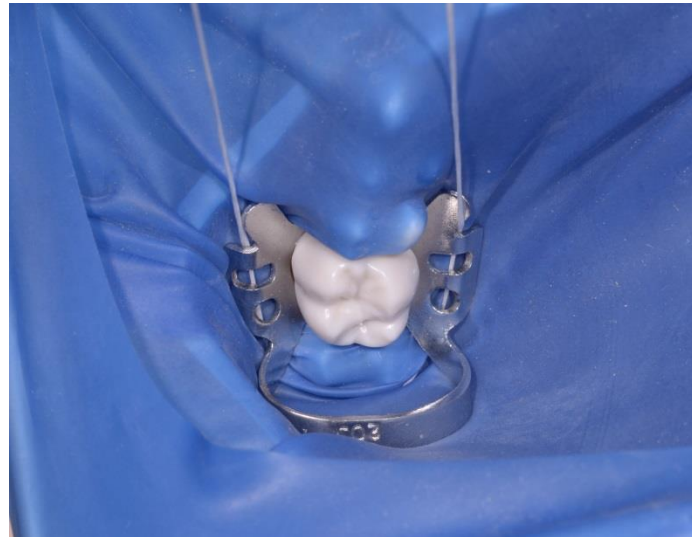






# Adaptation of the rubber dam

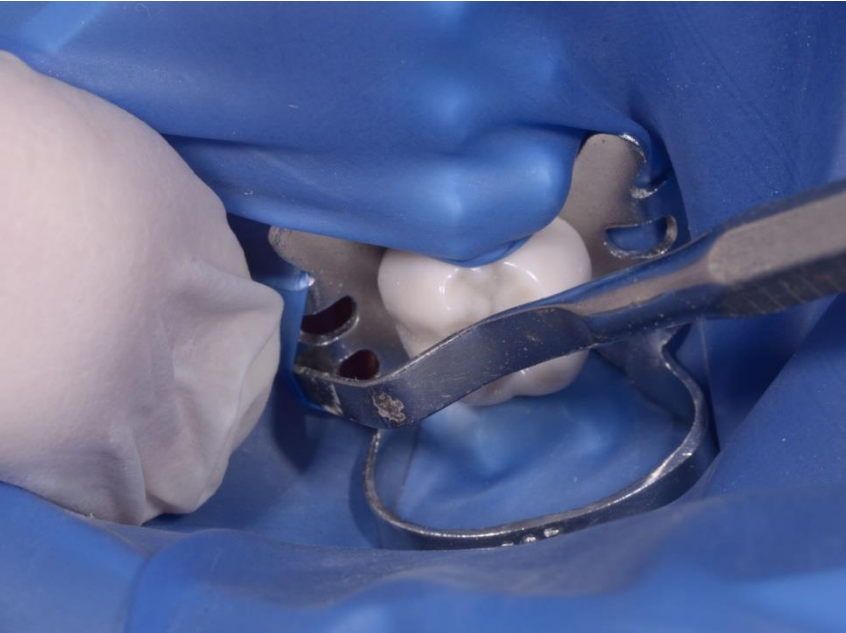
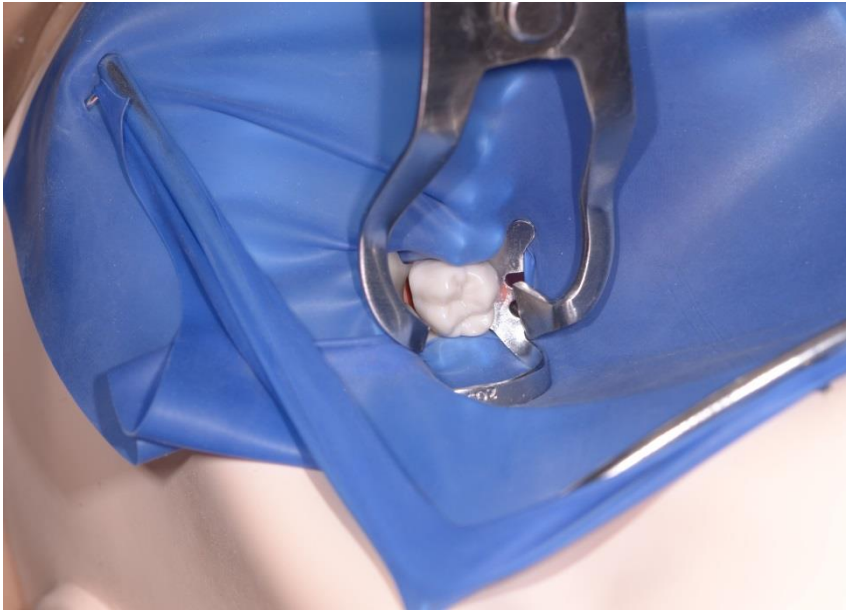
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Place in one piece the retainer, the rubber dam and the holder

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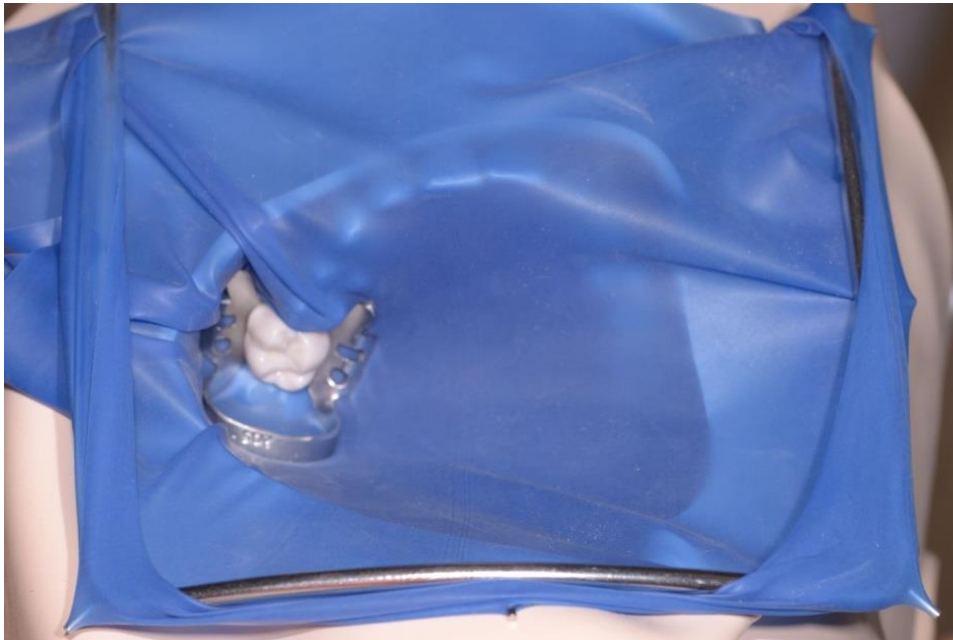
# Placement of the holder

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Metal frame- over the rubber dam

Plastic frame – under the rubber dam

We can make pockets



# Take off

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1. Accessories (wedge, dental floss, flowavle rubber dam etc.)
2. First the retainers
3. In some cases, we need to cut through the rubber dam
4. Take off the rubber dam and the frame together

# Errors in application and removal

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Off-center arch form

Inappropriate distance between the holes

Incorrect arch form of holes

Inappropriate retainer

- Too small
- Unstable
- Impinge of soft tissue
- Unadaptable wedge

Torn dam

Incorrect technique for cutting septa



# Thank you for your attention!

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