

Isolation in Conservative Dentistry and Endodontics

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- This word came from latin, it means confine, separate
- In the dental practise means the protection of the operating field from the undesired moisture and infections
- The operating field must be protect from the saliva, from the crevicular fluid, from different micro-oranism,water vapour of the expiration

The operating field must be protect

- Saliva
- Crevicular fluid
- Blood
- Different micro-organism
- Water vapour of the expiration

The types of the isolation

- Relativ
- Absolut (Rubberdam)

Relativ isolation

- We can protect the operation field only from the saliva, but we can't protect from the other unbenfical (blood, crevicular fluid) materials

Instruments of the relativ isolation

- Cotton rolls
- Salive ejector
- High performance vacuum evacuator (Exhaustor)
- Other instruments (Cotton rolls holder by Bányai, Huszár)

Salive ejector (nyálszívó)

- It's made from metal, porcelan, glas, plastic
- Mostly we use the disposable plastic salive ejector
- Easy to use

Absolut isolation (Rubber dam)

- We can avoid all unbenefical material
- We can keep dry the operation field
- It is a thin rubber dam
- We can isolate one or some teeth



Sanford Christie Barnum

1864. Discovered



Advantages

- Isolate the operating field
- Can prevent the aspiration, and swallow
- Protect the soft tissues
- Better visibility and access
- Operation Efficiency is higher
- Part of the infection control (protect the operator too)
- Sometimes we don't need to use saliva ejector

In which cases mandatory to use

- Endodontal treatment
- Fixation of adhesive inlays/onlays
- Adhesive filling
- Removing of amalgam fillings
 - Allergy
 - Pregnancy
 - Childs

At which step of the treatment have to place the rubber dam

- Endodontics
 - Before the opening of the pulp chamber
 - Before the removing of the temporary filling (2. appointment)
 - Pulp capping
- Restorative treatments
 - After the cavity preparation
 - Before removing of the amalgam filling
 - After the try-in of the inlays/onlays

The instruments, and materials of the rubber dam isolation

- Rubber dam
- Punch
- Retainer (rubberdam clamps)
- Forceps, Retainer forceps
- Frame, Holder
- Dental floss
- Other intermediates (wedges, rubber tube)



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- We can buy in 6"x 6", 5" x 5" sheets, or in rolls
- Different thickness is available: thin, medium, heavy, extra heavy, special heavy
- It's made from rubber (latex), but there could be allergic against latex
- For this patients was made dam from silicone

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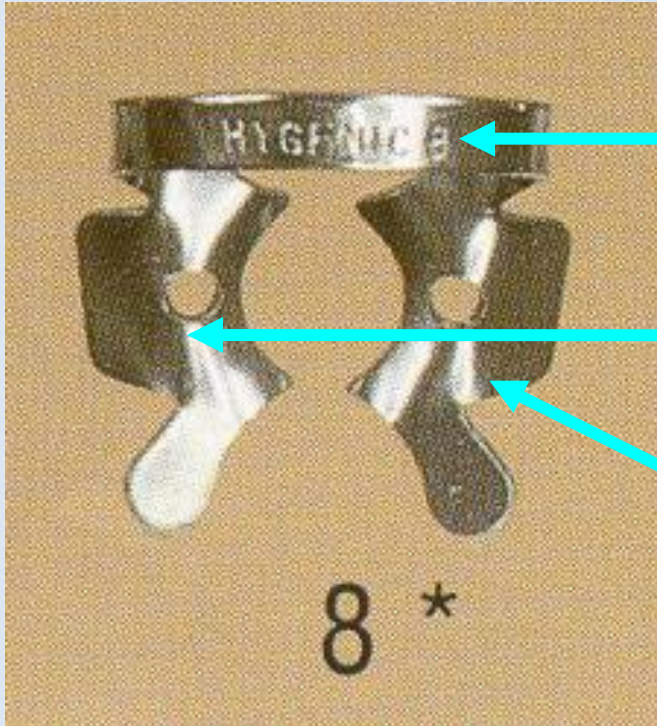
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Retainers (clamps)

- Retainers can fix the rubber dam on the tooth
- Plastic, metal
- Mostly we use the metal clamps
- The physical characteristics of the metal clamps are better, but it has an X-ray shadow. By endodontic treatments could be some problems

Parts of the clamps

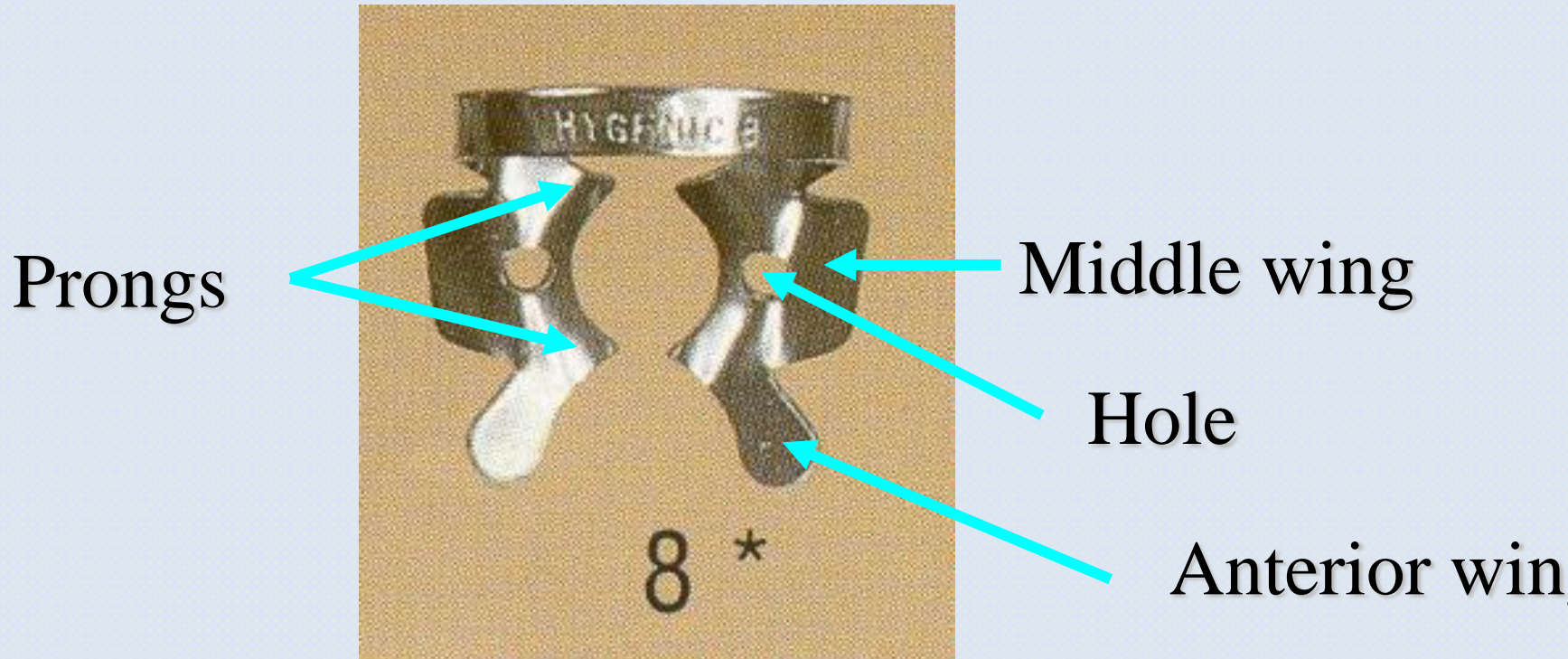


Bow

Buccal jaw

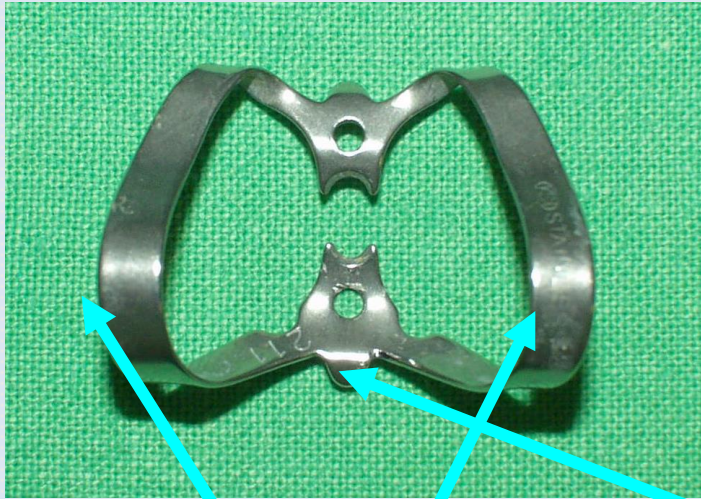
Oral jaw

Parts of the clamps



Parts of the clamps

Labial wing



Oral wing

Bow

The types of the clamps

- Winged - Wingless
- Crown - Root
- Clamps designed for certain teeth

Winged - Wingless

Bicuspid Clamps



00*



W00**

00, W00 For upper and lower bicuspid & incisors with small necks. High bow prevents lower lip from displacing dam.



2*



W2**

2, W2 For larger bicuspid & deciduous molars.



2A



W2A

2A, W2A For bicuspid & upper central incisors. Jaws slope downward to grasp firmly.

Winged - Wingless

Molar Clamps



7 *



W7**

7, W7 General purpose flat jawed lower molar clamp.



8 *



W8**

8, W8 General purpose upper molar clamp.



8A *



W8A**

8A, W8A Designed for partially erupted or irregularly-shaped molars. Jaws slope downward to grasp firmly (Pedo).



14



W14

14, W14 Designed for partially erupted or irregularly-shaped molars.

Winged - Wingless



14A *



W14A **

14A, W14A Designed for partially erupted or irregularly-shaped molars. Jaws slope downward to grasp firmly.



3



W3

3, W3 Flat jawed, small molar clamp.

* Denotes contents of System-7 Clamp Pak (Winged)

** Denotes contents of System-7 Clamp Pak (Wingless).



W56

W56 Molar clamp, wingless only.

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- **Forceps, Retainer forceps**
- Frame, Holder
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The forceps, Retainer forceps

- With the forceps can we place the clamps on the teeth

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The frame

- Maintains the border of the rubber in position
- Metal (By Young)
- Plastic
 - Solid (Nygard-Ostby-féle keret)
 - Fould-up type (Sauveur-féle keret)
- Special types of frames (Optradam)



Other Intermediates (retainer materials)

- Dental floss
- Wedges
- A little piece of rubber dam
- Rubber tubes

A kofferdam használat lépései

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

Gumilepedő kilyukasztása

- Template
- Stamp
- We can mark the tooth in the oral cavity

Placement

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

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

- We need assistance
- Nurse hold the rubber in position
- Dentist place the clamp on the tooth
- Then place the holder

Placement of the holder

- Metal frame- over the rubber dam
- Plastic frame – under the rubber dam
- We can make pockets

Take off

1. First the retainers
2. In some cases, we need to cut through the rubber dam
3. Take off the rubber dam and the frame together

Singe tooth isolation

- Root Canal Treatment
- Inner Bleaching
- Filling without approximal surface

Several teeth isolation

- Tooth in a bad condition, big destruction
- Filling with approximal surface

Problematic Cases

- Mass tooth structure missing
 - Gingivectomy
 - Prior filling build up
- Radix / Roots
 - Special clamp
 - Gingivectomy
 - Clinical crown lengthening operation
- Bridge

Disadvantages

- Abridge the respiration
- Allergy
- Clamp aspiration or swallow
- Can hurt the enamel or cement
- Can hurt the soft tissues (strangulatio, gingiva wound)
- If we use the proper instrument, and we ask carefully the patient before the treatment, we can't make mistakes

„We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard”



Thank you for your attention!

Special thanks to dr. David Jelencsics