**Sheet no: 13**

**Refer to slides no: 2**

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Rubber dam

Today's lecture is about isolation while doing root canal treatment. We'll be talking about rubber dam placement ,its advantage and how to use it, and things we need to take in consideration while doing root canal treatment.

Root canal treatment: it is an infection control, we either do it to prevent infection or to treat and establish infection. So in order to do this we need to isolate our working field from the oral cavity.

-we don’t need any saliva or fluid like blood to be in our working area.

* **There is different method to achieve isolation :**
1. The simplest one is to use something that can absorb fluids like cotton pads or gauze, but the cotton pads will get soaked so we have to change them every now and then, and you cannot prevent your patient from swallowing and rinsing.
2. Suction (high volume suction) or saliva ejector also here the patient will talk or swallow.
3. A barrier such as rubber dam ( the best method ) ( it’s the only method that gives you 100% control)
4. Or we can use a combination of them.

**Rubber** **dam**: is a barrier that prevent saliva, infection from entering the tooth.

* **Advantages of rubber dam:**
1. Good isolation.
2. Protect the patient: for example we use files, if it fall it may go to the pharynx and the patient will swallow it ,or it could be worse, it may go to the lungs …. It is a massive mistake where u cannot defend yourself!
3. Retraction of the tissue: (you need a mirror to retract the tongue, and the assistant to retract the cheeks in order to be able to work on the molars. So already, you are half paralyzed, you only have one hand to work with, and your assistant has only one hand to help you with). Therefore, the rubber dam retract the tongue and cheeks without using your hand.
4. Protect yourself and your assistant.: the water that comes out from the hand piece creates aerosol , so if the patient has disease that can transported by aerosol like TB , flu or any other disease you will get infected , so by placing the rubber dam you are protecting yourself and your assistant .
5. Improves visibility: putting the rubber dam improves your visibility and by this, you improve the efficiency of your work .
6. Improves your tactile sensation: if you worked without a rubber dam, you will firmly grab things and you will not be able to work freely, so by putting the rubber dam you will work in a more easy and comfortable way.

Sometimes you may suffer with your patients if it is the first experience for them with the rubber dam, they find it hard to accept it specially mouth breathers, it could be a problem for them, but soon they get used to it. It prevents the dramatic effect that they get when their mouth is full of water and fluids.

1. If you get a phone call you can answer it, there will be no problem. (It is a kind of privilege :P).
* **Rubber dam parts:**
1. **Rubber** **sheet**: there is different colors, sizes, thickness and different materials. Most of them are made of latex; some patients are allergic to latex. We have good percentage of patients allergic to latex its type 3 or 4 hypersensitivity the dr. is not sure.

The scary thing that we might face is that some patients may develop anaphylactic shock!

1. **Punches**: it consist of perforator and a rotating disc with different sizes of the hole

Small hole for the anterior teeth, and the largest for molars. Its diameter (0.7-2mm).

* **Placing the hole :**

We want the rubber dam to cover the entire oral cavity without covering the nose or eyes.

We create the hole extra orally.

Put the rubber sheet on the patient’s mouth and by your finger mark the tooth you want to work on it and then create the hole extra orally then insert the rubber dam in the patient’s mouth.

1. **The** **clamp**: it hold the rubber dam in place, it is made up of stainless steel.

Butterfly shape is for anterior teeth.

The clamp must fit the undercuts of the tooth.

Examples of teeth without undercuts:

1. Partially erupted tooth.
2. Perforated crown

\*\*\*\* We need four points of contact in order to have stable clamps otherwise we will lose it, the clamp will not stay in place \*\*\*\*

Clamp made of two jaw and a bow

\*\*You have to know the clamp’s parts the dr. will ask about them in the exam.

The Bow is placed distally in order to retract the rubber dam, and it should not compromise our working field so we cannot put it mesially.

Not all clamps has wings, we have wingless clamps.

* We can use different thing to hold rubber dam in its place :
1. We can make wedges from the rubber dam itself : cut pieces of the rubber dam if we have rotated teeth for example its impossible to put a clam around it
2. Dental floss.
* We use rubber dam for isolation to many things other than endodontics treatment, ideally even when we want to place composite we must use it.
1. **Forceps** : we insert them in the holes to hold rubber dam in place
2. **Frames**: they hold the rubber dam in place, we have different shapes, and materials (metal, plastic, and disposable , which comes with the rubber dam itself.

The Dr. prefers the metal frames, and hates the plastic one.

1. **Lubricants**: if you will keep the patient’s mouth open for an hour or two you need to lubricate the lips and Vaseline is enough for this, but if you want to lubricate the rubber dam itself, you cannot use Vaseline because if you want to do composite you do not want the Vaseline to be around it.
2. **Napkins**: you put it beneath the rubber dam to reduce the contact between the rubber and skin, so you can reduce the irritation; also, it absorbs any saliva or fluid.
3. **Floss**: you use them in more than one thing
4. Before we put the rubber dam we check that the contact area are open so we can place the rubber dam
5. We use them to tie the clamps (wingless clamp)

\*\* some time we place the clamp before the rubber dam if we want to do this we have to tie the clamp before insert it, because if its breaks it will go to the pharynx ,and that's why we have to tie it with long piece of floss in order to easily take it out of the pharynx .

* **Techniques :**
1. Create a hole in the rubber sheet and fit the clamp inside this hole (you need winged clamp) then you hold the forceps, clamp and the sheet together and fit them in the patient’s mouth, then fit the frame.
2. Create a hole, place the rubber dam itself around the tooth, you can use the wingless clamp here. then put the frame
3. Create a hole, hold the clamp and the frame together and insert them in the patient’s mouth.
4. Put the clamp before placing the rubber dam; if you want to use this technique make sure you tie the clamp.
* **Removing the rubber dam :**

If you put a temporary filling material and you want to remove the rubber dam you may dislodge the filling, and you will have coronal leakage. In order to avoid this simply cut the rubber dam.

\*\* if you don’t have four points contacts you can use composite to create under cuts in the tooth to put the clamps on , and when you finish your treatment you can remove the composite by the bur.

\*\* If the rubber dam is pulling the clamp because it is thick, simply change it and use thinner one.

\*\* If you have a bad tooth, you have to remove all caries and rebuild the tooth in order to put the rubber dam. You can rebuild the tooth by composite, glass ionomer or any other material.

\*\* Sometimes, you can put the clamp on the adjacent tooth if the tooth you are working on is highly destructed.

\*\* In some cases, you need to put the clamp on the gum , for example if it is the last tooth in the arch and it is badly destructed.

\*\* Sometimes, we put the rubber dam and still there is a minor leakage, because there is some gaps between the rubber dam and the tooth structure. So we can use the (Cavit) which is a temporary filling material, or oral seal which is a paste in a tube you just ejected around the tooth , also it absorbs moisture and give you extra sealing .

\*\* If we insert rubber dam around a bridge, the bridge may prevent the rubber dam from entering between the contact points. So we our sealer to improve the seal.

Good luck ^\_^