

Suham : Good morning. Today I'm speaking with Dr Isabel Mello, an endodontist from Dalhousie University. Isabel, thanks so much for taking time out of your busy day to talk to us about treating ankylosed teeth in young patients. It's something that we do see from time to time and it's really great to have you come and talk to us about what we can do and how we can treat these patients.

Isabel: Thank you for inviting me, Suham.

Suham : Isabel, first off, what can cause ankylosis in a young patient?

Isabel: It's usually severe trauma to the tooth that can cause ankylosis, especially in cases of tooth avulsion with extended extra-oral drying time. The reason being is that the PDL cells attached to the tooth will die and this will cause ankylosis.

Suham : So then let's say, we see a patient in our practice and we haven't taken an x-ray yet. I know oftentimes we can see ankylosis on an x-ray, but how do we diagnose 100% that the tooth is ankylosed or do you have any tips?

Isabel: Absolutely. Well, if you check the history and if a patient had an avulsed tooth, he/she will probably remember and parents will remember, so that will raise a red flag right away. Then, things we look for include discoloration, a non-vital tooth, a tooth that may have received a root canal treatment already, so patients may remember these things. When we're checking the mobility of an ankylosed tooth, you will find no mobility. When we are doing the percussion test, there is a very high pitch sound to percussion. Some people don't really know or understand what the sound is when I'm telling them about this, but, if you compare the sound from a normal or control tooth to the sound of a tooth that you suspect has ankylosis, you will notice the difference. At the time that you take a periapical radiograph, you will see no PDL space on the radiograph or areas where there is a PDL space and areas without a PDL space.

Suham : Isabel, like everything in dentistry, there's always more than one way to treat a tooth or a condition. How do we treat ankylosed teeth? Do we have more than the option of just extracting the tooth?

Isabel: Yes, but it depends if it is an adult patient or on a child patient. On an adult patient, if you determine that the tooth is ankylosed, there's not much you need to do because the bone is not growing anymore. You inform the patient and you monitor that tooth. The problem with ankylosed teeth is that replacement resorption, when the cementum and dentin are replaced by bone, is usually a complication of ankylosis. The tooth is basically being eaten away over time and needs to be extracted.

In a child, it's a different story. We want to avoid extraction at all costs because as soon as we remove the tooth, the bone will shrink and the patient has limited options to restore the area while growing. We can leave it the way it is, but because the patient is growing, the bone is growing, and the tooth will remain in infraocclusion or become infraoccluded over time. Aesthetically, this is not ideal especially in a child. So, we prefer to take action which is decoronation., We remove the crown of the tooth and leave the

roots in place to be resorbed through replacement resorption. In this case the bone is preserved for an implant later. in the meantime, restoring the area until the patient is old enough to receive an implant is much easier when we perform decoronation. When decoronation is performed and the patient is ready for an implant, fewer or no grafts are required. It makes things a lot simpler in the long run for the patient.

Suham : Can we go into a little bit more detail about decoronation. How do you carry out decoronation and when exactly would you use it?

Isabel: Yes. So, decoronation is a very good treatment option again for growing patients that cannot receive an implant right away and there is at least one millimeter or more of infraocclusion. This is when we intervene and there is no relation to age. We plan the coordination when there is at least one millimeter of infraocclusion.

We use local anesthesia, create an envelope flap in the area and with a diamond bur, we remove the crown of the tooth and maybe one millimeter more apical to the CEJ. If there is a root canal, we remove the filling materials, because as the tooth is being restored and the bone is being laid down the material will not be resorbed. We close and suture the flap and over time resorption will take place and new bone will be laid down.

Suham : Then, once the replacement resorption has taken place and bone is laid down, are we basically holding that space with an appliance or a type of prosthesis until the patient can have a bridge or an implant or another type of fixed solution?

Isabel: Correct. So decoronation will preserve the bone, but aesthetically the patient will need some sort of appliance. If the patient wants to have an implant later on when he or she is old enough to receive an implant, placing the implant and restoring the area is going to be a lot simpler than if that tooth had been extracted. If the patient decides not to have an implant but a fixed prosthesis, restoring the area is a lot easier as well.

Suham : Perfect. Isabel, thanks so much for your time and thank you for teaching us about the decoronation and how to treat an ankylosed tooth.

Isabel: Always a pleasure, Suham. Thank you again for inviting me.