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Managing the "Earie" Canal –  
Methods of Cerumen Removal  
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- [Christy] Hello everyone, and welcome back to the Classroom. We are so delighted to have Dr. Rita Chaiken back with us today. She is presenting Part Three of this wonderful series. Just a little bit about Dr. Chaiken. She is a private practitioner in Atlanta, Georgia, and also an Adjunct Professor of Audiology at Salus. She has also been the President of, the Past President of the Academy of Doctors of Audiology. Dr. Chaiken has traveled all over North America and internationally for the past 20 years to provide cerumen management training to audiologists and AuD candidates. She was also honored by the Audiology Foundation of America with it's Professional Leadership Award for her work in this area. Thank you so much for being back on with us, and at this time, I'll hand the mic over to you.

- [Rita] Thanks, Christy, and thanks again to AudiologyOnline for this opportunity and for all their help. Welcome everyone to Part Three of the three part Cerumen Removal series. You'll remember in part one, we covered many rules for performing cerumen management, contraindication, some special circumstances. In part two, we talked all about lighting and magnification, also about some special products and about infection control. Today in part three, we're gonna actually talk about performing cerumen management. As a reminder, before you purchase any instruments, any equipment, try and get some supervised practice from somebody who is experienced so that you can try out some of the instruments and equipment, or try being at a hands-on course where you have that opportunity. Your learning outcomes today are you'll be able to name the instruments used for cerumen management, you'll be able to describe various equipment used for irrigation, and you'll be able to discuss the protocol for performing suction. One of my favorite pictures, because I think this is exemplary of all three methods: instrumentation, suction, and irrigation. Instrumentation generally is thought of in the literature as used with sticky wax, suction with wet wax, and irrigation with deep or dry wax. I generally use a combination of instrumentation and suction, but I always use some form of instrumentation, and we'll talk about that later. One method we're really not gonna spend any time on is ear candling. There's so much literature about the danger of ear candling, and the danger is burning the ear. There are people

who really speak very highly of this. I think that you'll find that there are more problems than positive things about it. I know the first person I ever saw who had their ear candled had a TM that looked like scrambled eggs to me. We'll start with instrumentation, and this is really most widely used by audiologists, why? Because it's quick to assemble and less expensive in many ways. As we discussed in Part Two, you may need to soften the wax if it's adhered to the skin. There's a rule, and this goes for both instrumentation and for suction, and really, for irrigation as well. Always be able to see the tip of the instrument in the ear on the wax. Don't go in blindly. If you can't see it, don't do it. We talked about that also in Part Two. We have an array of instruments here, starting on the left side, with a Day Hook, a Buck curette, Shapleigh curette, another duck, another Buck curet, we have a Billeau Loop, and here are a few different kinds of forceps.

I will tell you that some years ago, I had a patient who came to see me, and he had dementia. He was, he came in with his aid, and when he was rolled in on his wheelchair, I noticed that the receiver of his hearing aid was facing out. When I did my otoscopic examination, I saw a great big plus sign reflect back to me, so there was a battery stuck in his ear. Well, I was concerned about using instruments because I couldn't get behind it, it was perfectly round in his ear, and I was, didn't wanna use suction, 'cause I didn't wanna tap on it for fear that that might make it deeper. Of course, I wouldn't use irrigation. So I ended up using the magnet side of a wax pick. I say that to you 'cause sometimes you have to do what you have to do, but that's not an instrument for cerumen management, so we don't want to indicate that it is. Here we have a closeup of a Billeau Loop, a Shapleigh curette, a Buck curette, and a disposable curette. I do want to make mention of talking to your vendors when you choose to purchase some metal equipment to make sure that the metals that you choose, the stainless steel and so on are, will not tarnish when you sterilize them, particularly in Sporex, like we talked about in part two. So be sure that you have that conversation with them, and don't, you know, something might be, cost less, but you also might have a greater chance of tarnishing in sterilization. Start with the disposable

curettes, and there are several different sizes of them and different configurations. There are some people who feel like these are actually safer than metal, and I believe that if you are following all the rules, you shouldn't have any trouble with metal curettes. They're, these are great if you're out in the field, if you're working in a nursing home, if you are going on a mission and so on. They're great because you can dispose of them and you don't have to sterilize them. In fact, you can't sterilize them, they're porous. So don't reuse these, clean them and reuse them, because you need to dispose of them. This is carbon fiber, which is also disposable. They're more rigid. I know there are a couple of different companies that put these out, distribute these, disposable. I know some, Bionix make them, and I'm sure if you look in your Oaktree catalog, you can find an array of them. Buck curettes: a rod with a metal ring at the tip. They come in different sizes. My favorite are 00, 0, or 1. You can also have a Size 2. Some people like the larger sizes because they feel like they can grab more and take it out of the ear that way. I like the smaller size because I think it threads a little better in the small spaces.

They also come angled, or not. It's a 45 degree angle. So my preference is to have an angled, small buck curette. Also the Billeau Loop, they come in the same sizes: 00, 0, and 1, my preference, and also angled or not. Some people think that the Billeau Loops are safer because they're wires at the, it's a wire at the end. I really think that if, again, you're following the rules, you're not gonna have any problem with the Buck. A difficulty I've had in the past with the wire is that it slices through wax that's a little bit softer. A few other styles, we have Day hooks. Day hooks are right angled hooks. They might be pointed, they might be blunt, they might have a ball at the end of it. They are meant to get behind an impaction and pull it forward. I tend to use the Buck curette at the 90 degree angle instead of this, I'm sorry, the 45 degree angle instead of this, at the 90 degree angle, and find that it does just as well. Shapleigh curettes, they are a metal rod with a teardrop shaped ring at the end that's hammered down and serrated at the tip. Why serrated? I'm told to break down wax when there is an, a dry impaction or impaction that you want to make a hole in to put another curette through it, an

angled or a right angle curette. I find if you're gonna go to the trouble of breaking down the impaction, you really, don't really need to do irrigation with that, and again, I would prefer to soften the wax rather than to break down an impaction. I think it's safer to soften the wax with ear drops, as we talked about last time. These are Vorotek Ear Loops, and they were designed at the same place that the O Scopes that we talked about during the lighting segment were designed. They're shorter, and I'm gonna show you a video in, on the next slide, to show you the difference in the hand. They are loops at the end, and just a little smaller in the hand. I'll go ahead and show this video. You'll see me picking up the standard, Buck curette, and I have my O Scope on my head and my lighting and magnification, and I'm bracing the head with both hands. Same thing, and, with the shorter one. It's just a little different in the feel in the hand.

Some people like to use ear lights, or penlights, to do cerumen management. I find them very bulky in the hand, I find that they are a little more occlusive in the ear, because they are bigger, and I find that there are a couple of other things I've been told about them, that, my pointer won't come down. There we go. I find that when you see, there is a little loop embedded in the plastic, and I'm told that sometimes the wire, the metal wire in the plastic, rusts, and the other things I'm told is that wax gets lodged in there, that you can't get out when you're cleaning it or sterilizing it. So for some people, it's easy to find these, and it's easy to use this, and this is what they have. Again, my preference is to use better lighting and magnification with metal cures. Lighted cures, this has become very popular. First of all, she's all to happy. Kids I work with don't smile that much. One this second, going on. I also have a issue with not being able to brace the head as carefully 'cause you have to be out here where the light is. These are disposable, you cannot reuse them. So if one is thinking that you're gonna save some money by have, using disposable cures, you will not. I think they're great to give the child to play with, sort of as a light saber, but I still prefer using my better lighting and magnification with metal instruments. I wanted to show this to you, we mentioned this last time, being able to do cerumen management using video otoscopy, and this is the attachment that's put on the end of the camera, I believe with

the MedRx style, MedRx model. There may be other models that I'm not aware of that also have an attachment that you can use. One of my favorite pictures, this really helps exemplify how you will work with a patient in removing wax. What you want to do is take your curette, and I, again, probably would use an angled Buck curette, you want to slide it in this hole without touching the canal wall, and it's, make sure that the angled part, the larger part, is turned towards the back of the impaction and pull it forward so that you can grab it with forceps, or continue to pull it out of the ear with your curette.

Now, this looks like pretty wet wax. I'm gonna talk about suction in just a little while, and I probably would go the route of doing suction with this instead of using a curette, and in this case, where you would start, like you do with instruments is in the, where there's a hole, or where, and superiorly, where the weakest portion is. On this ear on the left, same thing. You're gonna go and turn your curette up, upwards, the bulk of the curette upwards without touching the rest of the canal wall, and pull the impaction forward, also might moisten this with some ear drops and might use suction as well. These are forceps, and I don't think I could do cerumen management without forceps. There are a couple of different kinds that we'll talk about. At the very least, I would use forceps to bring the wax that I have brought forward with a curette out from the opening of the canal or the concha.

One type of curette are alligator. I'm sorry, one type of forceps are alligator, and alligators can be cupped or pointed or rounded tips, and they seem to be the most popular with audiologists. They can have a longer blade, and the feature about alligators is that the point of articulation, the hinge, is down towards the tip, towards the inside of the ear as opposed to the Hartman Dressing Forceps, which you can see, the hinge is on the outside of the ear, towards the finger loops, and you have a wider range of motion with the Hartman Dressing Forceps. I tend to prefer to Hartman Forceps, but I like to have at least one of each when I'm doing cerumen management, because there may be a small wisp of something that I want to grab with the alligators.

There's a rule that I want you to remember. Always enter the canal with the forceps closed until you're at the wax impaction. Always enter the canal with the forceps closed, otherwise, you run the risk of abrading the ear. I will mention, looking at forceps makes me think about insects, and I'll mention that if there's a bug in the patient's ear, like a roach, you want to drown that roach, if it's alive, you want to use some ear drops or oil, and then you want to use your forceps to pull the legs of it out of the ear and then the body of it. You probably aren't gonna be the first person to see somebody with a roach in their ear, but just in case, you'll know how to take care of it. I'm going to show this video, we can go ahead and show it, and show you the difference between the two types. There you see this, that was an alligator, this is the Hartman Dressing Forceps with the hinge towards the outside of the ear, towards the finger loops, and this is another style of the Hartman Dressing Forceps. You will see a couple of other types of forceps, the Lucae Bayonet, and the Wilde forceps. They resemble jumbo tweezers to me. I find them, for me, too occlusive, too large in the ear. There are some audiologists who use these.

Perhaps if you have a large impaction that you've moved towards the opening of the canal or into the concha and you want to take it out with these, that would be probably the time to use it. It's a little bit more difficult to see it down the ear canal. I've put together a little protocol for you that I use, that I recommend you start with, and you're gonna start, of course, with your case history to determine that you're gonna do instrumentation. Always sit eye ear level, always do otoscopy, and always brace the head. When you instruct the patient, you'll tell them that they're going to, perhaps, feel a little pressure in their ear, that they may hear some scratching, and that, many times, they feel that you're going deeper into the ear than you actually are. Tell them that if they feel discomfort, that you'll stop, but please don't use the phrase, it won't hurt, because one, if it does hurt, then you lied to them, and second, when you use that, it won't hurt, it kind of sticks in their mind. You'll do your instrumentation, you'll follow with otoscopy, and end with documentation. Document what you saw initially, and why you're doing cerumen management, what you did, and what the outcome is. It can be

as simple as removed with no incident, or you can say there was an abrasion, say, in the superior canal wall. But be sure to document right after you see them, or right when you're seeing them. A few tips. Of course you always wanna observe patient responses. You want both eyes to be open, which is much easier when you are using head worn magnification and lighting. As I've said earlier, you start at the superior or the weakest aspect, wherever the hole is. You wanna try and get behind it and roll the impaction out. Always enter the canal with closed forceps, and don't remove attached skin or touch the canal wall. Well, how will you remove the attached skin, or how will you move it aside? Take your curette or a curette, put a little bit of the ear drops on it, or oil, and pat it away from, or onto the skin, away from the canal, so that you can get directly to the impaction that you wanna get to. Perhaps there's a little bit of skin that's sort of waving across the canal and it's causing some feedback with the instrument that they're wearing. Just pat it away with drops, and it'll work its way out itself. Also, remember when you're doing cerumen management, either of the methods, any of the methods, to have, perhaps a tissue in your hand to wipe off the instruments, and something on the patient's shoulder, it could be a four by four that you are holding and it's on his or her shoulder, or some gauze, or a paper towel or so on.

Take a look at this and tell me what you think. Sort of runs a little shudder down my spine, because, as you can see, he's not bracing the head at all, and this is really an example of danger, and also, he's not wearing gloves. Here we have Dr. Bob Manning again, and he is using a headlight to use his forceps towards some wax that is probably right at the opening of the ear canal. He's bracing with his, both his left hand, as he's pulling his ear out and up, and with his finger. So the only problem is he's not wearing gloves. I'm gonna show you in just a second this video. This is Dr. John Vorrath. He was the designer of that O Scope, and he's, his company is Vorotek, and he's going to demonstrate his method of removing cerumen with an instrument. He's using those Vorotek Ear Loops, those shorter ear loops. He's using a plastic speculum, because he feels like the metal ones that we talked about last time, in Part Two, are too bright. There's too much reflection. Unfortunately, he's not wearing gloves and

doesn't feel that's a need, but of course we audiologists are held to a different standard than perhaps ENTs are, so we wanna be sure that we have the highest level of infection control. So go ahead and let's roll this and we'll watch.

- [John] Pull the tragus forward, look through the speculum, use thumb and first finger, two hands to get it into the exactly right position, and then switch to either to just one, in the left hand, then the right hand, if you, Jason, wouldn't mind getting me one of those instruments, and then here, we'll just go up and the fifth finger, you can rest it anywhere, on the side of the head, on the edge of your speculum, on your finger, but if you don't do that, you're taking a risk. Some day, something'll happen and the head will move and the eardrum will be at risk unless you've got that steady finger. You know, it's amazing how precisely you can see what you're doing, and loosen wax, and then remove it. Now, in the outer canal, it's not likely to hurt, but a lot of difficult wax will be in the deep canal, and then this, that's when this concept of loosening it and lifting it before you try and roll it out really pays off. Why do I know this more than most? Because I've spent a lot of my career dealing with small children who eventually work it out that you can remove wax from the deep ear canal without hurting people.

- [Rita] That's a great video that I really enjoy seeing and having my participants watch. All right, we're coming to suction, my favorite method of cerumen management. Why, because you're always in front of the impaction, you're never having to get behind it. It's an old wives tale or old audiologists tale I guess that make audiologists fearful that you're gonna suction out the tympanic membrane and the ossicles, and you shouldn't be near any of them, or either of them. If a patient complains of pain, as I said before, I don't do pain, so if there's any chance that there's something attached to the TM, and there's a little discomfort, I will refer them on. As with the instruments, you may need to even soften the wax more, and if it's dry wax to start with, you can soften the wax so you can use suction instead of using other instrumentation or irrigation. 'Cause as long as the wax can be softened away from the skin, you can use suction, and it may even come out as a ball. You wanna remember that, and tell your patient that it makes a

loud sound. Prepare them for it. You can use a otoscope, a headlamp, a head loop or a head worn microscope to do this. There are contraindications, and we talked about that in the first of the webinars, and those contraindications are if the patient has chronic tinnitus, has hyperacusis, or is post otic surgery, and of course, don't touch the skin, only touch wax. There are a couple of different kinds or styles of manufacturers of the suction, and one on the left is Gomco, which has been around a very long time, and on the right is a Jedmed. The little arrow is not coming down. There are a couple different parts to these. One is of course the motor, on this side and on this side, and you have a gauge. Sometimes that gauge is internal and you don't see it. I leave it at where the manufacturer sets it for cerumen management. You have a filter on each of these, and you have a collection receptacle, a jar, a glass jar for the Gonco, and on the Jedmed, it is a plastic container that you can either clean and disinfect or you can just throw it out and get, they send you a couple of extra ones. On the jar you, I like to disinfect it, and I will often will put some of the sterilant in there overnight, too, when I'm cleaning it. Either, also I would recommend that you put some mouthwash at the bottom of these. It's for the smell and for the look of it, like Listerine, you know, green Listerine or blue, just a little bit, maybe a inch or so, a couple inches on the bottom of the collection jars. They will be, attached to it will be tubing, and you can see this is opaque tubing, my preference. I think it comes standard with the Jedmed, but you can get it with any of the models, and you, I like that, because the patient doesn't see the debris that's flying through into the collection receptacles. The suction tips come in some different sizes, and it's very important that you remember to clean these and sterilize them, and you have to clean the debris from the inside of them.

So there's some smaller ones, there's some larger ones. A couple of things to remember. You can actually suction through some warm water, and I, if you remember, when I showed you the crash cart, there was a little cup of water there, and I said that's not to drink, we can talk about that when we get to suction. That's if you're suction tip gets clogged with some wax. As you're doing suction, you can use that water to suction through to clear it temporarily. But don't suction too much, or it will fill

the filter, and that will be a problem. So you can suction a little warm water through to clean it, you can take it apart from the tube and run water through it, you can syringe water through it. I like to drop it or bathe it in ultrasonic cleaner. The effervescence will get some of that wax out, and hopefully all the wax out, to clean it before sterilizing. The suction tips come packed with reamers, wire reamers, different sizes for the different size suction tips. Don't throw those out. Those aren't for just packing. That's so that you can ensure, by sliding it through the suction tip, that all the debris is gone. So use that to make sure that the debris is gone from the inside after you've cleaned them. Here are three of the styles: the Frazier, the Ferguson-Frazier, and the Baron. Did a little informal setting myself, but you can hear it yourself. The Frazier and the Ferguson-Frazier, even in the same size, are louder than what you hear from the Baron. Also I like the Baron 'cause it's small in my hand. I like the Baron Size 7, and I'm gonna show you those sizes just now.

So the Size 3, I actually purchased when I first got my first suction pump, and really all that's good for is cleaning the receivers from hearing aids, 'cause it's so small, and it would get occluded very quickly. And a lot of people have Jodi-vac, so they don't need those, but it really has a little bit more pressure than the Jodi-vac, and it really worked well with cleaning the receiver tubes. There have been studies that the best size to use is Size 5. I find that it gets occluded too fast with the wax, so my recommendation is a Size 7. You're not going to be just suctioning the wax, or in the ear, without being on some wax, which does attenuates a loud sound some. So hopefully you won't be introducing a lot of noise into the ear for a long period of time. The suction tips have bleeder holes on them, and even without covering that hole, there still is some suction that goes on, until you cover that hole, there is still a little suction, so a rule that I want you to remember is not to cover that hole until you're at the impaction. Don't cover the hole until you're at the impaction. Otherwise, you might be suctioning something you didn't mean to, because you'll have max, you'll have the vacuum, and you'll have maximum suction. Again, when you're on the wax impaction, it does attenuate some of the sound. You can see here, this is Dr. Bob Manning again, and he is bracing the

head, as he should, and he is suctioning through an otoscope, and she's way too happy, again. My patients aren't, don't look like that generally, when I'm working with them. But he's not wearing gloves, as we've mentioned in the other webinars. This is Dr. Jiovanne Hughart, and she's gonna follow some steps in doing the cerumen management with suctioning, and she does a lot of the hands-on classes with me that I do. So let's roll this. Okay, she's doing her otoscopic examination, and now she's stepping over to her crash cart. She is going to get her tubing in her hand and she's gonna get the suction tip that she prefers, turning on the suction machine. It's a beautiful cabinet there. She is putting on her magnification, then she's using the O Scope, and turning on their lighting, and she will be at the right angle to do the cerumen management for this patient. The patient's a little bit lower than she is, and she's not having to bend the head, she's tilting the patient's head. She is using a plastic speculum. She uses her forefinger, you'll see, to cover the hole. I happen to hold my hand a little bit more underneath and use my thumb to cover the bleeder hole. She's moving the tip around to get, loosen the wax, and I'm assuming that that wax has gone through the suction tip, or else she's coming back to get it with her forceps.

Once again, we have our protocol, our case history. You're sitting eye ear level, otoscopy, embracing the head, and we are going to instruct the patient. This time when we instruct the patient, you wanna remember to instruct that they're gonna hear some loud sounds, they may hear some screeching, but you can stop any time if there's discomfort. Don't use the phrase it won't hurt. They may feel a little pressure in their ear. You'll begin your suctioning followed by otoscopy. You may also have to use some instruments after suction, otoscopy, and then your documentation. As we've said earlier, you wanna observe the patient response, keep your eyes open. I tend to talk to my patients. Obviously I have no trouble talking, and that relaxes them. A lot of times you'll see patients whose faces are grimacing or they're squinting or so on, and it's not because it hurts, it's because they're expecting it to hurt. So every now and then I'll just ask if they're okay, if they're comfortable and so on, and usually they are. You'll start the superior or the weakest aspect as we talked about, and you'll gently rock the

impaction, or change the position of the tip on the wax to loosen it from the skin. They may hear a screeching sound, and once again, you're not gonna remove the attached skin. When are you gonna do? You're gonna pat it down with a, gently, with a curette that has an ear drop or a, oil on it. Don't forget that cup of water that you may need at the crash cart to clear the inside of the tube in case it gets plugged up. I'm gonna show you this video, just a minute. This is Dr. Elena Pizarro, and this is a great video. She, a couple of things. She's not wearing gloves, she instructs the patient a little bit while the machine is on, so I don't think he's hearing her, and she does say something about it not hurting, but watch how she braces the head at all times, and how she rocks the impaction, moves around the tip to loosen the wax. So let's show this.

- [Man] It's on, hello.

- Hello, my name is Dr. Pizarro, and what's your name?

- It's Harvey.

- Harvey, we're gonna look at your ear, okay.

- All right.

- Let's look with the camera, excuse me. We are gonna take a look, and I want you to look at the TV. We're gonna see if your ears are clear. Uh-oh, boy, we have a lot of wax.

- That's wax in there, isn't it?

- Yeah, mm-hm. Well, we're gonna take care of that today.

- [Harvey] You're gonna clean that out?

- Uh-huh, yeah. What we're gonna do is we do it with a suction, like a vacuum, and it sounds like the wind blowing really loud, but it doesn't hurt. Have you ever had that done before?

- Oh, I think so, a while back.

- Okay, we're gonna do that today, and I just look through here, and we're gonna go in, and you see how loud that is? But it doesn't hurt. Okay, we're moving that around, trying to find a place where I can loosen that up. I'm just rocking it back and forth so it gets loose.

- [Harvey] Can it?

- [Elena] Huh?

- [Harvey] Can it suck that wax out?

- [Elena] Uh-huh, yeah. Okay, here we go, it's coming right out. It's a boy, look at that, it's a boy!

- Oh, for heaven's sake.

- [Elena] It's a boy grub. Yes, Mr. Harvey, we got it.

- Is that a bug?

- No, that's a, that's wax. That's not a bug, yep. It was a big one.

- I thought it had to have been a bug.

- [Man] Good job Dr. Pizarro, good job.

- I thought there might have been bug in there.

- [Rita] That's great. I would tend to tell you that I would not suction through the, or pull it, I would drop it, I would drop the impaction at the opening of the canal or in the concha and remove it with a forceps for fear that it would drop from the suction. I certainly wouldn't suction, she didn't, I wouldn't suction it through the speculum itself. Which brings us to irrigation, and irrigation has its place. I, it's most commonly used by paramedical professionals like MAs, PAs, nurses, and so on. It is messier, and if the impaction is near the TM, if it's very dry or firmly attached to the canal wall and you can't soften it to get it out, or if it's too deep to use the other methods comfortably, I recommend that you might need to use irrigation. As we discussed in the very first webinar, there are some contraindications which include if they have a history of dizziness, you know, you don't wanna irrigate their ear, if they have diabetes or other systemic diseases, you will want to, you know, think about whether you wanna do irrigation or not. You, if they have a vulnerable TM, if they have PE tubes or a hole in their TM, a perforation, or if they have a vulnerable TM, you may not want to do irrigation as well. I'm gonna show you, as soon as I get my little pointer going, there are a few different pieces of equipment you would use. Traditionally, a 60cc syringe was used, has been used with an emesis basin that's held by the patient. Hopefully they can hold it straight underneath their ear, or sometimes a dental irrigator's been used, and this is the catch basin, the emesis basin, and I like my patients to use a plastic apron, I like to put towels around them, it is, does get a little bit messy sometimes. I like being eye ear level and using magnification and lighting so that I can see in the ear and see what I'm doing. In that case, I might use a mask, because once you've had splash back, you really won't want, you'll always wanna use a mask. You wanna be sure not to occlude the ear with this tip. There has to be a way for the water to get out of the ear, so don't occlude the tip. The water should be room temperature or body

temperature, either. When you're irrigating with a syringe, you wanna make sure that you don't irrigate straight at the impaction or straight at the TM for fear that you'll cause some problems, some irritation. You want to point towards the hole that's in the impaction, and of course, as we discussed earlier, you want to be able to be sure that you have a canal volume, an appropriate ear canal volume by using a tympanogram. So you'll have to be sure there's a hole in the impaction for you to do that. You know that irrigation can increase the risk of Otitis externa and a TM perforation and middle ear infection and so on, and dizziness, so you want to really know your patient and know their history. So if you, as I've said earlier, if you want to irrigate and you don't know the volume of the ear canal, don't do irrigation. Here you have the instructor showing the student about tilting it towards the hole in the impaction, or toward the superior aspect, and here the student, students are working with students. Now, he definitely looks more like the face of the patients that I see when I do cerumen management. She's pulling the ear up and back, he's holding the emesis basin straight, and she is irrigating the ear. She happens to be wearing safety glasses in case of splash back.

A company called Bionix makes a interesting product called the OtoClear tip, and as you can see, there are three holes at the tip of the OtoClear tip so that the water is diffused in the ear. Because of that, you don't have to worry about how deep you have this in the ear, and you don't have to worry about the amount of pressure, nor do you have to worry about tilting the tip towards the superior aspect, because you're getting, the water is irrigating from three different aspects. At the base of the tip are large holes, so you don't have to worry that you're occluding the ear 'cause through those holes, the dirty water will come out of the ear. You put that on to an adapter, and there are different adapters depending on which of the units you use: a dental irrigator, a dental massager, the Aquabot unit, which is, you push a button, then you can, it's very easy to irrigate. This is a spray wash system, and this is a syringe, a smaller syringe for gentle irrigation. Here we have, in a minute, a video, and this is the spray wash. One nice feature of this is that it has a little gauge on the side to let you know when the

water is too warm to use, whether it's too cool to use, or if it's okay. One thing to keep in mind is if you're gonna use this between patients or between ears, or you're gonna stop to look and do an otoscopic examination again, to see how the ear looks, and then go back to irrigating, you wanna be sure that you irrigate some water out of it, perhaps into the emesis basin, before you go back in the ear, because the water cools very quickly in the adapter. So we can show this video. You can see that she was just spraying in the ear. Kyrosol is a new product that have, they have a system that uses the OtoClear at the tip, and it also has some drops to soften the wax, and it's all in one unit that you can purchase from your vendors. This is the Welch Allyn Ear Wash System, and I'm going to point to it, here we go. It has really been around for several years, and it answered a lot of the questions and the problems with using irrigation. This part fits onto a faucet, and you run the water from your faucet until it's, from both the hot and the cold, until you get to the right temperature, and there's a gauge on this gun-like part that will tell you when the water's the right temperature to be able to do the cerumen management. At the tip is a disposable tip, that, creates a seal in the ear so that water should not drip down.

Now, from my experience, if I move my hand a little bit, I break that seal. So I do have a patient use an emesis basin under their ear while I'm using this, even though you're not supposed to have to. So then the water is flushed into the ear and suctioned back into the unit through another side of this tube back into your sink. It's affordable, it's not very expensive, it's portable. The problem for me was that the only places where there were sinks in my office were the break room and the bathroom, and there was just something about about having a patient sit on a toilet lid for me to flush their ear out that just didn't sound or feel right, so we stopped using it. You do have to be careful that you clean these tubes out carefully and dry them, else bacteria may form in them. This is an Earigator. This is a product that's been around for many years, designed by an otologist, but really of late has been marketed more aggressively. It is always ready to be used. The water is heated, and you have a gun-type unit again that has the correct pressure going into the ears. So the temperature's regulated, the pressure's

regulated. You can, there's a little magnification from the piece that goes in the ear. It's also a shield, so you don't have splash back. It is fairly expensive, very expensive, so if you're gonna do a lot of irrigation, it might be worth your while. In my case, I don't do irrigation frequently, so I haven't really used it. Once again, you have your protocol here. You're gonna start with your case history, of course at eye ear level, do your otoscopy, brace the head. When you instruct the patient, you are going to tell them that they're gonna have a little bit more hearing loss, 'cause you're filling up their ear. They're gonna feel some pressure in their ear, and you know, they're, until the water comes out of the ear. Certainly you're gonna tell them if you're uncomfortable to let you know. It is loud. It's loud, similar, really, to the way the suction is loud. So tell them it's gonna be a loud sound, to sit very still and to hold that emesis basin straight up. You'll irrigate, you'll follow with otoscope, and I'd like you to look in the ear frequently to make sure that the, especially if you're pointing towards the superior canal or pointing towards the canal, make sure that the canal is not getting irritated. Followed by documentation, of course.

A couple of things to remember. Of course, you're gonna be observing the patient response, as I said. Always document the integrity of the TM, instruct the patient they may feel fullness or pressure. You want to begin at the lowest setting if you're going to use an electronic device that we talked about, and what's important is the steady stream of the water. It's not the pressure, it's not how hard you're irrigating. It's not how hot the water is. What's important is the steady stream of water. So you won't hurt the ear, you don't want it to be too forceful. You might also want to put white vinegar in the water to balance the pH. What I recommend is that you dry the ear post irrigation. How are you gonna dry it? You might use suction, you might use some drops of alcohol, which will get way down to the TM, so you'll know that the ear is dry, the whole ear canal is dry. A couple of other products that are available, there's something called Afterswim, also made by Bionix, and it's a sponge that goes in the ear. I like to cut them in half so that I use one on one side and one on the other, or that I have half for another patient if I don't need both. The sponge dries the water from the ear canal.

Another product that's available is the Mack's Ear Dryer, and it's a hair dryer or ear dryer for the ear. It takes a little while, and these are, I'm told, sterilizable. You can sterilize them, the tips, and patient would use it in their ear for a couple of minutes to dry the ear. This is a video about putting it in the ear and showing you how it's used. It does take some time. As I said, it, as I said, it just takes a little time to use that. Some children use that who are swimmers after their swim meets and so on so that they can dry their ear. All right, couple of things. You know, if you follow the rules, I tell you that you won't have problems with abrasions and bleedings and so on, but it does happen. I'm told there are no major blood vessels in the ear canal, so that, you know, the patient can't really bleed to death from it. But it looks like they're bleeding to death, and it really unnerves you, I know, when it happens.

So the first thing you wanna do is apply pressure to stop the bleeding, just like you would if you had a cut on your hand or your finger, or wherever. The first thing you do is apply pressure. So use your forceps, and get an otiblock, and apply some pressure. You can use some water on there, you can use saline soaked in a cotton ball. If you can't stop the bleeding, around, what's used in the industry and the profession frequently is putting some Afrin, the nasal spray, on the otiblock, and again, holding it and using pressure. The Afrin, if you're using that, the package warns against using it if you have an enlarged prostate or heart disease, diabetes, high blood pressure, thyroid disease, but I'm told that it's such a small area and they're not, it's really not gonna get absorbed to any degree, and that it's really okay. There's also a product called Neo-Syneprine, which is stronger. I tend to have the Afrin on hand instead. Once it's in the ear, you can use that Afrin, as long as your TM is intact. Make sure that it's not any deeper than just on your abrasion itself, and not longer than three to five minutes, because as you can imagine, if you waited longer than that and pulled it off, it would cause it to start bleeding again. A couple of slides I wanted to show you. This is a problem because a curettage was used, a curette was use, and you can see on the anterior canal, there's, where the exostosis is, there's some hemorrhaging, and on the, there's also a small hematoma posteriorly. Really you have to know where the cerumen

ended and the skin began. You might could use irrigation, but if you did, then it looks like there is a cavity behind the exostosis, so you'd have water in there, so you might have to use some alcohol to get in there and dry it, which I am sure would burn if you have an abrasion in the ear. All right, as soon as I get my little arrow to work, I'm gonna show you a couple of other problems in the ear. This is a small wound from suctioning because the suction tip was on the canal. This is damage in the bony portion due to too strong irrigation. Unfortunately here we have a situation where the tip of that large syringe blew into the TM. You have to make sure that everything, on your equipment is attached tightly. This is on, number four, is a ruptured blood blister on the TM. Poor patient feels like they're deaf. And we have a dry blood blister several days after irrigation, too strong irrigation. Here we have where the blood coagulates and blocks the TM.

My last picture for you is a picture of a hematoma. I show this to you, if for some reason you make an abrasion that's just a hematoma that, you know, 24 hours after the abrasion. If that occurs, you really, if you have to wait until it dissolves, until it migrates out of the ear. This is about a month after. This irritation was caused by a curette and then a hematoma was formed. You know, before you insert a device of any kind or try to clean more wax out of the ear, you really wait to have, you have to wait until that hematoma is dissolved or migrates out of the ear. Well that really brings us to the close of this webinar and of this series, and I hope that after watching these three webinars, you are more comfortable starting to do CM or continuing to do cerumen management. I will recommend to you that you practice, practice, practice, just like you did when you started making ear mold impressions and you finally got that work of art, and you will become more and more comfortable the more you practice. I have given you my contact information here at the bottom of this slide in case you're, have questions, or are interested in bringing a class to your state or business. I know several people who teach classes, hands-on classes, which might be real worthwhile for you. I thank you once again.