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Practical Video Otoscopy: Everyday Clinical Imaging of the External/Middle Ear

Presenter: Clayton Fisher, M.Cl.Sc

Welcome to today's course, Practical video otoscopy, Everyday clinical imaging of the external middle ear.

These are the risks and limitations associated with today's class, and these are the learner outcomes that are also associated with today's class.

And now I'm going to turn this over to our presenter for today.

Welcome everyone, and thank you so much for joining us today. It's a true pleasure to have you here for the final Inventis Academia webinar of 2024. Well, today's session is led by someone who doesn't need much introduction. Let me say Clayton Fisher, clinical audiologist and audiology consultant. Hello, Clayton, and thank you for being here with us once again.

You're welcome. Before we dive into the topic, I'd like to highlight that all the webinars Clayton has hosted over the years have been accredited and are now available on Audiology Online Inventive's partner page. I strongly encourage you all to take a look and explore the wealth of knowledge we have built together together. Now, on to today's focus, the practical application of video otoscopy in hearing clinics. From exploring various styles of video otoscopes, including Harmonica invent its own video otoscope, to practical tips and tricks, this session is packed with insights for every clinician.

As always, feel free to ask your questions during the webinar and don't forget to fill out the survey. We'll send you afterward your feedback. Help us continue to deliver educational content tailored to your needs. Clayton, the stage is yours. Enjoy the webinar and see you later.

Okay, let me just get my screen shared here. All right, so hopefully everyone can see that. Okay, so today we're talking videotoscopy and we've never had so many registrants on, so obviously people are interested in this topic. So I just want to tell you a little bit about myself. I am a clinic clinical audiologist

and clinic owner and a father of those three little kiddos there.

So I've got a decade of experience working in clinic, the assessment of treatment of hearing loss. And I've worked in all sorts of settings from chain clinics to hospital systems. And again, I now have my own private practice. So a passion of mine is optimizing clinical clinical workflow and efficiency and also like teaching. And as Anna mentioned, you can check out my AO past webinars at that link.

Okay, so just a heads up, I don't have an AED, I don't have a PhD, and just because we're talking about otoscopy today, I'll just let you know, I'm definitely not an ENT, but I love clinical audiology and I'm always trying to improve my clinical practice and the overall patient experience and share that with other clinicians. So to that end, I did create a YouTube channel that has some clinical videos on there that you can check out or subscribe to. And I very recently started a otoscopy Instagram, which I've got some photos up at, and I should continue posting if you subscribe. And I have some people to post to. All right, so our objectives today are to learn about the developments in clinical video otoscopy and the different types of devices available, because there are many.

I also want you to understand why VEO is essential to a modern hearing clinic and give you some tips and tricks for its use, because I use it all the time, so I've gotten fairly proficient at it. And then, which is probably why we have so many people here today. We'll just show some cool pictures of the ear and learn through some examples. Okay, so how are we going to get there? Part one is just the background, why VO is critical history, types of video otoscopes, and the tricks and tips.

Part two is we're going to get into the examples. We're going to start simple and start with the outer ear, earwax, foreign objects, etc. And then we're going to move to more middle ear stuff and then some surgical ears. So if you're having lunch or dinner right now, you better finish it before we get to that stuff.

Okay, so why are we doing a course on vo? Well, my last webinar I did some polls and one of them was, do you use video Otoscopy? And 30% of people said, yep, I use it all the time, which is good. So now the 25% of people said, yeah, I have it, but I only use it sometimes and I don't know how much. But then there's 45% of people who don't have a video otoscope and that's just not part of their practice.

So that's pretty crazy. So this talk is definitely for you as well as for the people who are using it sometimes and hopefully get you using it a little bit more. Just want to share a couple reviews from the last talk here. So, you know, Susan says something about it's not that the information is new, it's more about why we should be doing all this stuff. Okay, I like that.

And then Ann says, good, practical, hands on information on how to improve you Know how I work with patients in the business. I love that. That's kind of what the whole plan is. Alan here says too much common sense. You have not been practicing long enough to give a truly meaningful discussion on this topic.

Anyway, so this talk is, is there's going to be tons of common sense. So if there's any allens out there, I guess you could just log off. Okay. The second reason is. And this is.

This is not a joke. I don't know, the stats on this are crazy. There are 16, 19 courses on audiology online. And if you search for otoscopy, there is only one course that comes up. It's an awesome course.

I'm sure a lot of you have taken it. Otoscopy for Audiologists by Robert Batista, who's an ENT. It's got like 1500 five star reviews. It's a comprehensive overview of normal and abnormal otoscopy. And if you haven't checked it out, I strongly suggest that you check it out.

But as I mentioned, I'm not an ent, and this is not a diagnostic course. So this is not really what we're getting into today. In fact, that course has already been done.

So I got a question for you. What would you prefer? And this is just, I mean, like, this is just the truth, right? So standard traditional otoscopy, you have to bend over and try and look up and to look into the patient's ear. You can't really see very much with the little viewfinder.

You gotta kind of move around. You can only see it once. Unless you want to bend down and have another look in the ear. And you have no record of what you've seen and there's no possibility of reviewing it. And of course the patient is not included.

They're just standing there staring at the wall and with a smile on their face or whatever, they can't see what you see. The alternative with video otoscopy is just the opposite of all those things. So it's ergonomic, which is kind of nice. You don't have to bend down. You can see the patient's eardrum with exceptional quality on a big monitor.

The bigger the monitor, the better you can document it for future review for yourself and for whatever other reason and the patient is included, they get to see what you're seeing. I know what I prefer and that's why I use videotoscopy all the time.

So why VO? I did a quick YouTube video on this that you can check out at the link there. But Very quickly, it's more professional. Patients find it very impressive and interesting. Makes you look good.

Number two, again, the patient is included. They're part of the process. And I think that can only be a good thing. Number three, for diagnostic purposes, figuring out what's going on in someone's ear, it's obviously superior. And number four, you can document that, which you can reduce your liability with before and after shots.

And obviously it's of clinical interest, you can return to these things. You don't just have to go based on memory or your notes.

So when we talk about video otoscopy, is it really video or is it more photo? Well, when we're doing it, you see the live video and so does the patients. But most of the time when we talk about vo, it's really, we're talking about snapshots of the ear. Speaking of shots of the ear, I just wanted to mention there are no stock photos in this presentation. Everything you see is just stuff that we've captured in the clinic with people coming in.

All right, so we're going to go over some options here because there are many. But first, let's get into some history. So apparently, according to this audiology online written article I found from 2011, the first otoscopes came out in the 1980s. Apparently the original cost was around 20k. It kind of reminds me of the Natus ear scanning technology right now.

Few years later, the cost came down, but these things were still cumbersome. Right. I think the fire alarm is going off right now. So hopefully that's not too bothersome for you and hopefully it stops soon. And if you wanted to capture images on these things, you had to invest in additional technology, software.

But the interesting thing is that the advantages are the exact same as they are now. They haven't changed. So you can see the TM on a big monitor. It gives you a much more detailed view and of the structures. And they were designed for capturing images as opposed to just peeking in the ear.

Okay. So you can look at before and after images for things like cerumen management and ear mold impressions. And it also enables image sharing for educational purposes. All right, so Michael Hawkes clinical otoscopy book, you know, the, basically the atlas of the era. The first one was race in 1984.

He's from. He was at U of T. And the University of Toronto reports on their website that he's got over 10,000 photos in his personal library. A lot of you have probably seen a version of this book also, just like the Canadian connection here because I'm in Ottawa, Ontario, Canada. Toronto, which is not too far.

They've got a history with video otoscopy and Otosim is a cool program or a Toronto based company that provides training with VO images.

So I have Michael Hawke's Diseases of the ear from 1994. Okay. If you can see that there, a pocket atlas. It's a great book. You should pick it up if you don't have it.

But he notes in the front of this book that what he's using for all these photos is the Hopkins Rod Tele otoscope, which I've pictured here. I've never actually used this before. It looks like sort of like a medical version of what we would use. But obviously the photo quality is great and probably not a lot of audiology, hearing healthcare clinicians are using something like this.

So speaking of devices, I want to just kind of take you through what the progression that I have used with video otoscopes. The first one is pictured there. This is. So when I was in grad school, when I started in 2012, there was definitely not a focus on VO, which is too bad because obviously you could learn a lot from just always using a video otoscope. But that device there is exactly what ours looked like in the student lab.

And it actually came on one of those rolling stands, just like the old TV that they used to roll into your classroom and you'd watch an educational video and they'd roll it out. It was very much like that. It was for special purposes only, you know, VO demonstrations. It definitely wasn't a staple and it wasn't used every day. And interesting.

When I. Interestingly, when I started working clinically, we actually had some really nice video otoscopes like the ones we'll talk about in a bit. But they just sat there and no one used it. And I think it's just because they didn't fully understand how it worked or how it could benefit them. So really the next major video otoscope that I started using was the Wells Allen macro view, where you just click the micro USB cord into the head.

This is not really an ideal solution. If you've used this, you'll know what I'm talking about. It's not ergonomic. It's kind of find the button and push the button to snap a photo on the back. And it's also awkward to position because you have this long handle when you're doing a regular otoscopy.

You can just hold it horizontally. It doesn't matter. But with video otoscopy, if you do that, the whole image is going to turn right. So you have to try and keep it as straight as possible. That detachable cable used to drive me absolutely crazy because it was always getting unplugged.

And overall it was just kind of a frustrating experience. But hey, better than nothing.

The next major device that I've used a lot is so you've got devices with built in screens, like a built in monitor to it. And the benefit of that is that it can be really great for things like home visits or just in the waiting room because you don't have to plug it into the computer. You just got the monitor right there. You can quickly show the patient downside again is that handle, it's kind of awkward to angle around the patient's shoulder. So some sometimes, often you get images that have an angle to it.

And if you take a look at the images there, you're going to see that you sort of got this quarter turn almost to them, which is fine, but you can't really re angle those later.

Just a quick note on field of view, having a broad field of view is really important and some specula on some models can really limit that. Okay, so these are photos taken from my horoscope, which is the

one that has the built in screen and the standard Haina tip that just clicks onto that just because of the design. You can see how much it encroaches on the actual image. It's still good, but it's not great. And there's other video otoscopes that are even worse, like the Firefly.

I'll show you in a second. But certain devices like the Inventus Harmonica can have like a really, really wide view which allows you to see not only the TM but the ear canal at the same time, which is, which is quite handy. So here's just a side by side of a Firefly, which has a very narrow view, I guess because of the specula that they use. Whereas the Inventus Harmonica and even though it's still using that high neigh tip, it's the design where you don't see the tip at all. All right, so it's extremely wide and that can be really helpful.

That's one of the things that I look for. Okay, so other devices, you might have seen these, you can have extensions to video otoscopes that connect to a cell phone. Like the new Welsh Allen macro view has a connector for that. The only thing with this is that not only now do you have a handle? Now you have the cell phone connected to it too.

So I've had limited experience with this to be fair, but the small experience that I've had, it was not a great experience. And in a standard clinical setup, it's kind of hard to access these photos because they're actually on the phone and they're not on your PC or in Noah or it's not easy to get them into your office management system. However, one thing I will say, if you planned on starting a wax removal, Instagram or something, these are extremely handy for posting photos and videos to social media because they are already on a phone and it's really easy to just load them. And then of course using a phone, you can use the camera feature, the video feature, so it's really easy to snap actual video as well.

It must be mentioned that anyone can have a video otoscope nowadays for it's like 40 bucks. Okay. So some of your patients might have come in and shown you these that they just bought off Amazon. I

mean, these are really cool and it's great that you can have a video otoscope for \$40, but. But it's really.

Most of these don't support the use of any sort of Specula. So it's obviously not. You can't really use that in a hearing clinic. One big thing to look out for is the PC ones that just plug in via usb. They use the camera feature on the computer.

So it's like a mirror image of the eardrum. So you're looking at the right ear, but it looks just like a left ear and it's just not good. So. But any. Anyway, anything honestly is, is, is better than nothing.

But I just wanted to point that out there. So that really just brings us to the gold standard, which is a handheld device that is wired and just USB to your computer and, and is powered via usb. But most importantly is compatible with your Noah system so that you can have everything all in one place. Place. Because really I think part of the reason why even if you have a nice video scope in your office, there's 25% of people who don't use it all the time, is because it just has to be seamless.

It can't be a pain to kind of get it working. So if it's all within Noah, especially if it was, if it's within your pre existing manufacturer module, then it's almost hard not to use it. But anyway, you can see this is a harmonica here and it's got this horizontal pencil like Design. Okay. Which is really important because I was just talking about the vertical designs with the traditional otoscope because you have to hold them vertically, it can be really tricky to use those.

So with these, it's really, you still have to keep it straight, but you just make sure that the button's on top and it's, it's, it's easy to orient it straight up. So because it connects with Noah, hopefully whatever manufacturer suite you're using, whatever device you're using, there's really good viewing and printing options in there. And you know, to the point where like what I do is we actually have the otoscopy. Everyone's eardrums are actually right on the audiogram, the single audiogram report, which is, which is kind of unique.

Just about all manufacturers have some version of this now. So top left is the Inventus harmonica. Then you have the Natus Otocam beside it, which I think is probably the kind of old, the longest standing video otoscope like this, like a high quality one. Then you have the Medrex vo, which I've never used before, but I've checked out some videos online. It looks pretty good.

Then GSI has a version and Interacoustics have a version. Of course, these all work within their suite. So if you're thinking, if you don't have a video otoscope and you're thinking about purchasing one, ideally you would have one that works within with your existing gear. But you may want to get your equipment rep to come in and demo some of these so that you make sure that you're happy with them. Because I would be willing to use like a separate Noah module to get a superior quality if I had to.

Although obviously it would be more convenient to do it all within one suite. So do some research, do some homework.

Okay, so let's just do a quick price comparison. So the Amazon special that we were talking about earlier. Yeah, anywhere from 40 to \$150 depending on whether it has a screen or not. A traditional otoscope with the cell phone connector. Well, the new Welsh Allyns, these are Canadian prices, but I think they're around 1,500 dol.

Then you need to get the sort of connector coupler and then there's the cost of whatever phone you're using. Professional otoscopes, like with the built in screen, like the horoscope that you saw some pictures from, I think they're around \$2,000 Canadian. And then for any Noah compatible clinical video otoscope from all the manufacturers that you know, like the Inventus harmonica is about \$3,000 Canadian, and that's with all the taxes included. And then the other manufacturers are a similar price. They're around that \$3,000 price point, plus or minus about \$500 is what I found.

So you might want to pay a little bit extra money to have something that you absolutely love and that works for your setup. So just a quick note on video otoscopy technique. It's kind of a matter matter of preference. But obviously, if you're using a handle device often, it's kind of nice to be sitting down at eye level. But I actually prefer to do the standing method where the patient is sitting.

But I'm standing. I kind of have the underhand grip and snap a photo with the thumb. But then, you know, you at least pictured in a lot of ads. It seems like the sitting is pretty. Is pretty popular where you're kind of using a pencil grip and your index finger to snap the photo.

I have a little thing here. What's wrong with this picture? Well, the patient is facing the opposite way. They're not actually looking at the images. But that was probably just done for photo purposes, just so you could see the patient's face.

Okay. It's not always easy to get a really good snapshot of the eardrum. So if first you don't succeed, you got to try again. So focus changes with the. With the depth.

So you got to get the depth just right. The light can also adapt with the depth often, so you kind of pull it out, put it back in. Also, it's not uncommon to have to wipe off the tip of the camera. You know, if someone's got waxy ears, especially if you just kind of irrigated them, you're trying to get an after shot, or if they have narrow canals or hairy canals or whatever it is. It's also worth mentioning that with some models that kind of need to heat up, if they're not.

If they haven't been kind of plugged in and ready to go, you can get this fogging that you see here on the left. And then you can see later if once that's heated up, that's a nice clear shot of that eardrum that's clearly got some middle ear issues going on. So it can sometimes take multiple attempts. And then sometimes you just got to accept that you're not going to get the shot that you want. So if someone's got really narrow canals or maybe they're really sensitive and they won't let you kind of get

in deep because often the deeper the better for the photo.

You know, you can, a good tip is to, you can actually take off the specula and just kind of wipe it down to get, you know, a millimeter smaller on the end. Sometimes you need to do that with kids and then wipe it off afterwards, obviously, but sometimes it's not always possible to get a bright shot of the tm. So this, this picture here just shows a TM where we can kind of see, we can kind of see this clear, but it's shadowed just because the tricky canal. And so we can't really say much about the eardrum except that there's not really any wax blocking it. So you need to try another method of visualizing the eardrum.

Which brings me to head worn devices. Okay, so let's not forget that using loops or head worn microscopes, it is otoscopy. Otoscopy is just looking at the outer ear, the eardrum, trying to get an idea of what's going on with the middle ear. So I don't know if you've used these or if you are using them. So like a Hyne loop or a vortex O scope, which is what I use now, these things give you binocular vision.

Like you feel in, I shouldn't say it, but you, you don't feel invincible, but you feel like you can see exactly where you are in the ear canal. Kind of feel like you might if you were an ENT with a big microscope. So for things like wax removal is great, but they're also, they've got really, really bright illumination. So when you have those tricky ear canals like we just saw, you just grab a small specula, the appropriate size specula, you go in there and then you blast that light and you can really get a good idea of what's going on. So again, these are essential for cerumen management, safe cerumen management.

The O scope is going for about \$2,700 Canadian after tax. And the HINE loop is a little bit more expensive for about \$3,500. The Hinae system has a bit better magnification, but apparently the headworn microscope, the O scope gives you better depth perception, especially for small ear canals, which I think because I've used both of these. So these are also, they're well worth it if you don't, if you don't have one of these in your office. They're also amazing for doing ear impressions.

You just do the whole thing with, with the spec frames or the, the head loop. And they're also just great. They're so good. Once you get used to these, I, I just, I'll just throw it on quickly just for, you know, checking a probe tube or something like that.

Okay. So regarding wax removal, a lot of video otoscopes have they come with cerumen removal speculum. Okay. To be honest, I've never actually used these. I just.

When you have something that's head worn, like I just showed you, I mean, it's so far superior. But I would not recommend this because you don't, you can see what you're doing, but you don't have depth perception because you're just looking at the monitor. It would be kind of awkward to use the otoscope itself like a curette because it's obviously significantly bigger. So that might work in a pinch, but it's definitely not recommended. I know there's a lot of people, especially in the US who aren't able to do wax removal, but I, I don't know how they get by.

Like, in my opinion, you can't have a hearing clinic without doing earwax removal and you can't have proper earwax removal without using head worn otoscopes because. So that you can actually, you've got two hands free and you've got full depth perception and you can brace properly. Bracing is extremely important. So just on that note, I don't think that using otoscopes for cerumen management is a good idea if you can avoid it again because you don't have true depth perception. And what does that mean?

It means you're guessing. And don't tell me you're not because I know that you are like pretty sure I know how deep to go. Whereas when you have binocular vision, you don't need to guess. And it can also be really difficult to brace the working hand. And again, I talk about how this would be great for social media videos and I've posted some here, but, but it's really not in the patient's best interest.

So you can see a couple different setups here and in all of these photos. So the one on the left and the one on the right is the same procedure. And actually this person is actually, I believe he's using this Hopkins otoscope that I was talking about earlier for all the hawk images, which is kind of cool. And you can see that he's bracing with the left hand with the otoscope, but on the right hand he's using suction and there's he's not. At least he's not bracing.

I don't know if his arm is sitting here, but this one, this Dr. Earwax 5000 likes on this thing. And you can see that there's zero bracing going on with either hand. And that just terrifies me. And anyway, obviously people like these videos, but I worry about this guy's eardrum getting punctured if he moves.

Wow. Anyway, I digress. Okay, just again, back to the video otoscopy as opposed to sort of photo. You can't record video with every single manufacturer in Noah and be able to save those in Noah, but you can definitely record video on any computer just by doing sort of like a screen grab. Okay.

So like with a PC, what you can do is just press the Windows button and, and G at the same time and that puts you into a gaming mode and then it allows you to record your screen. Okay. That's the way that I have figured out to do it. There's probably other ways to do it, but. But because sometimes the photo.

And here's a photo of someone's left ear here, it doesn't tell the whole story. So here's what we were seeing before we took the photo. And I'm going to play the video so that you can watch. This is done with the Inventus harmonica. You can kind of see it pulsing there, can't you?

And if you wait a little bit. Yeah, it really goes wild from time to time based on patient movement or when she was speaking, that sort of thing. And there, there you have it. So sometimes video is worthwhile capturing not just the photo, especially if there's movement. So obviously that patient be worthwhile for her to probably see an ent.

And she was getting this pulsing.

So anyway. Okay, how are we doing for time here?

Actually can't see my clock now. Anyway, we're just going to keep going. So this is what, what you guys probably came for. We're going to go over some. Some case examples.

Okay. We've got about 20 minutes left. That's awesome. So here's just a bunch of cool stuff, pictures I've taken with the Inventus harmonica. And we're going to going to kind of get into some of these here.

These photos are taken with various video otoscopes. First, let's start with the one that we see most commonly. So earwax cerumen removal. So you'll see all different types of earwax. Here's some harder, drier earwax.

You know, you see some sort of Hair in the ears there. Why is it that you always see these patients right after you finish? Lawson, you look in the ear and this is the first thing you see and it's like, all right, here we go. But I would probably rather deal with the hard earwax than, than the softer types. Okay.

We see some soft skin, like stuff on the left side and then very full ear there. That's going to take a lot of work there on the right side. Probably going to take that out with the curette at first. And then realistically, depending on how packed the ear is, we're probably going to have to irrigate the ear as well. So again, the beautiful thing, I didn't put any after photos in here, but the beautiful thing is when these patients come in, this is, you take this photo and this is what they see.

And then you work really hard, you get the earwax out and then you show them their eardrum and it's like this, oh, oh, wow moment. And obviously, so you save those, you can document it, you can send it

to them and then it's often a good idea. I like to just run a quick tip on each side as well. It takes two seconds. And then you've got full documentation that you never perforated someone's eardrum or anything like that.

Okay, get into some foreign objects. What would be, what would an otoscopy webinar be without foreign objects? So this was a six year old boy who, it appears like he's got a ball of wax really deep up close to the TM there in his left ear. This was removed with a curette by me after an irrigation attempt by a co worker. But what we found out was it wasn't just earwax.

And there's, there's the after shot here. This is the clear ear. You can see there's still a little bit of water in there. Shots a little bit blurry. You can't always get a perfect shot or you don't always have time to go back and get it.

But it wasn't earwax. He actually had put these little plastic rubies into his ear and over time the wax had just kind of clung onto them. So here's his right ear and there was actually two of them in his right ear. One was clear to see and that's why we knew what we were dealing with after we removed that. The middle photo there, there's the second one that's even deeper.

What I was using for this is just, is just a curette. Again with the headworn microscope, the O scope. And because those things are hard to use, we couldn't even get it out with. With irrigation easily. So you just.

You know exactly where you are with the eardrum, and you can just get behind it and pull it out. And there's the right ear. And you can see that I think there were some drops there used as well. There's some water still left on the eardrum. And here's what we took out of there.

The funny thing was with this guy, and this was on a Saturday morning, and I came in to help out and, you know, the mother was appalled that the boy had done this. And I kind of tried to make it clear that he shouldn't do it again, but the look on his face showed that he did not regret his decision.

Anyway, here's a classic one. I'm sure you guys have seen this before, where you have a cotton swab that's broken off the applicator that's stuck in there, obviously detached. Someone's trying to clean their ear with a Q tip. This particular patient had no idea that this was in there. It wasn't occluding the ear.

It wasn't affecting her hearing in any way. Got this with a right angled hook and specula, of course, and the headwarm microscope. And I really love this. This after photo of the ear. If.

If it could be even blown up, you would see that it's just such a crystal clear photo. And you can see just the. The little fibers of the cotton and you can see the hair in her ear as well. Anyway, it's a good time to be doing video otoscopy. Gotta say, here's a classic one on the left side where you're seeing a hearing aid dome wedged in the ear.

We've all seen that a million times. You GR. Forceps, you take it out. Here is a less common one. I actually didn't see this patient, but my colleague found this silicone earplug in the ear and she successfully removed it.

I was quite proud of herself. And the patient was quite happy, as you can imagine. Again, sorry, I didn't. We didn't think to grab the after shots. We should grab some after shots of that.

Okay, moving on to some external ear conditions. Here is a fungal infection that was in my father's ear. You gotta love at family gatherings where people know there's. Hey, hey, Clay, can you have a look in my ear? And this is what you see.

It's like, okay, great. He required some antifungal Drops. This was actually an ongoing thing. And interestingly, you know, it became clear that this wasn't really what was affecting his hearing. And he actually did have a sudden sensorineural loss.

And this was after recently having Covid. Actually had some prednisone and got a bunch of that back. But still a significant change. Yep. So, and again, I had sort of after shots of this where the ear is looking significantly better after using some drops for a couple weeks.

Here's just, you know, infection discharge in the ear, whitish on the left side, greenish on. On the right image there. And gosh, yeah, that's not fun. When you look in the ear and you see this, you know, you can try and clean it out as best you can get. Get an idea of what the eardrum is looking like.

I know a lot of clinicians aren't really comfortable cleaning that stuff out, and you might just, you know, refer out, but, yeah, that's not what you want to see after lunch. Okay. This is an interesting case of a fleshy growth in, you know, the outer ear canal. What was really wild is that this patient came in for earwax removal, and there was indeed a great deal of earwax. You can see the gap on the bottom here.

And there was lots of earwax kind of all over, but. But it was stuck in behind there. And we were actually, after several visits, able to successfully get this out for him because he couldn't hear anything. And believe it or not, his temp was normal after the earwax removal with. With a curette and irrigation.

But obviously there's this mass here that I don't know what's going on, but that is a whole. He needs to see an ENT, Right. He's got a whole other issue. Interestingly, when you touch this with a curette or something, it was not painful whatsoever. I think the medical term for that is called when you palpate it.

And I know a lot of people aren't really comfortable doing that, but it gives you really important clinical information. I remember showing a video otoscopy photo to this ENT that I was working with. And this patient I was seeing on the private side, I was like, hey, what? There was a growth sort of deep near the tm. And I was like, what do you think this is?

And the first question he asked was like. He said, I don't know. Like, did you touch it? What did it feel like? No, I never.

I didn't touch it. This is a long time ago. And, you know, well, why would I touch it? But it actually gives you a lot of important information because sometimes, like this growth here, which is very much on the more peripheral outer portion of the ear canal, this was very. This, this growth that you see, this sort of purple growth was actually very, very hard to the touch.

And of course, the patient was concerned about it, but it wasn't painful or anything. And we, you know, her GP is aware of it, they're just monitoring it. They didn't feel like she needed to go see an ENT for that. So every time she comes back for hearing aid stuff, we just have a look in there. Doesn't really look like it's.

It's growing. All right, moving more on to the middle ear issues, here is someone that was sent to us by the family doctor for barotrauma. This was actually after 10 days of treatment with decongestants and nasal steroids and all this stuff. I apologize that the shots, a little bit blurry there, but apparently, according to the patient, she didn't see. But when the doctor looked in, apparently it was way worse.

Scuba diving thing. And it was just extremely, extremely red behind the eardrum. But anyway, that's kind of neat. Here's an example. GP wanted them to have a hearing test, diagnose acute otitis media.

This doesn't have the kind of classic bulging that you often see with most of the photos, if you just Google that. But I believe this is a ketotype media and the temp is flat. And I think it might actually be in a more sort of advanced stage. But there you have it.

I can't remember if this is a pediatric ear or not. So. Speaking of otitis media, here's some with effusion I can never remember. You know, is this mucoid? I'm not sure, but it's.

This is the dark, dark fluid that you can see. Okay, so there's often no peak on the temp, but, but. And if there is, it's like super, super negative in pressure. But these are kind of cool. And these are.

These are all different cases of it. You can see the image on the far right. We could probably have gotten a better shot of that, gotten in a bit deeper. But again, it depends on the ear canal. And I did not take all of these photos, so I don't know exactly what's going on in some of these cases.

These ones here, I feel more comfortable saying that the fluid is like a serous, serous otitis media. And that's where it's like a clear fluid you can kind of see into. The middle ear a little bit better. We can see some bubbling, especially on the right side. The image on, over here on the right.

Okay. Yeah. And there's often no pain, but obviously their hearing is significantly down. You got to wait for it to clear and retest them.

So some more fluid in the middle ear space. And this image over here on the very right side, I just. It was a note from a colleague of mine. I had her snap some shots for me for this, for this webinar. There was a PE tube in there at some point and it had moved out and probably going to have to put another one in.

So speaking of tubes, we do do testing for an ear, nose and throat specialist who is an otologist. So we see some cool stuff as you're going to see coming up and we see lots of tubes. So here's a couple tubes that seem to be doing pretty well. Here's some tubes that maybe aren't looking quite as good, especially this image here over on the very right side where, gosh, that, that, you know, things are just infected there and they need to get back in to see their ENT, you know, as soon as possible.

Okay. I gotta say, this is pretty cool. I was happy to be able to have this for the webinar. I've never seen this before. This was a young woman who's had tubes her whole life.

Pretty much where the tubes have actually gone in and moved in to the middle ear space, but the eardrums are actually intact. So this is the right ear, this is the left ear over here. Wow. You guys ever seen that? Okay.

No. And obviously the temps were flat on those ones. Pretty cool. And amazing, amazing pictures. Okay, let's move on to some perforations.

Here's one. This person had had middle ear issues her entire life. She's kind of in her 70s or 80s, I can't remember. But we've got a little perf here in the posterior superior quadrant. It's been there for a long time.

We ended up fitting her with some, some hearing aids and she's, she's doing quite well. But depending on what you're using for otoscopy, you might miss this hole. But of course, when you run your temp, you see it's flat, but it's got a very large volume.

Here's a bigger perforation, sort of more of a medium sized one in the posterior aspect. Kind of nice shot here in tympanosclerosis, you know, towards, towards the front, which is obviously pretty common. These people who've had Ongoing middle ear issues, perforations, etc. Here's a really neat

shot. And this would definitely be from the ENT testing that we do.

A right ear perforation with really severe retraction that you can see there. And it's down here in the posterior inferior quadrant.

Here's another large perforation. Reportedly, I don't know. The note on this one was just due to Q tip use and there might. It's hard to tell that. It looks like it's probably wax.

There could be some blood in there. We probably could have gotten a better shot of this. But again, it really depends on the ear canal. But you can just see that things are very, very open there to the middle ear space. And here's one again.

I wish we had gotten a slightly better shot. You can see we're kind of going a little more into the side of the canal. If we. This is a right ear. If we directed that a little bit more towards the nose, we would be able to see that open middle ear space a little bit better.

But you can still see it pretty clearly. Yeah. Wow. That wouldn't be fun to have.

And just for good measure, some monomeric tympanic membranes. So probably healed perforations. We see that. You know, the darker color here. That's a pretty common thing to see.

What would an otoscopy presentation be without some cholesteatomas? If you have the pictures, again, we work with this otologist, so you can see this sort of what they mention in the Hawk book as being called attic wax here, which really is always kind of up top in the pars flaccida, close to the pars flaccida there. So you really have to sort of look around for this if you're using a traditional otoscope, whereas with a wide view video otoscope, I think it's a little bit harder to miss something like that.

Pretty neat here. So I did not see this patient, but right ear double mastoidectomy with large perforation. Yep. So there you have it. And even for these mastoid patients, having that wide view is even better because you just see more of the.

How the outer ear space has been enlarged, right ear, mastoidectomy, tympanoplasty. So yeah, that's. That's not a very nice looking ear. That's a surgical ear. And again, I didn't really have the time, but at some point it'd be kind of great to do a webinar where we kind of go through the whole case history with these folks and show the audiogram and show the temps and everything else and the change pre post surgery.

So speaking of pre, post surgery, the only thing with working with this otologist, we're not actually in the same spit with this space. There's not a lot of communication. So sometimes I don't. If the patient doesn't know and it doesn't say on the note, I don't actually even know what the surgery is. But here's a pre, post surgery, the pre photo was taken with the Natus Otocam.

This patient was getting, you know, their hearing was way down, they were getting a lot of pain in the ear and a lot of discharge. And the post photo is taken with the Inventus harmonica post surgery. Again, I don't know exactly what it was. I should have asked about it for this presentation. But afterwards he wasn't getting the pain, he wasn't getting the discharge and his hearing had improved a little bit, but he didn't really notice a significant difference because he still had a pretty significant mild flat conductive hearing loss, but it improved about 10dB overall.

Okay, so want to leave a little bit of time for questions, so just give a quick summary on this whole presentation, which has been a lot of fun. I hope, hope you've enjoyed it. In my opinion, video otoscopy is essential to having a modern clinic and in my opinion, it should be used with every patient. Hopefully you agree with me after this. Veo makes your clinic more professional.

Okay? It makes you look more professional and it also makes you less liable if someone's coming back to you with any sort of issues, whether it be ringing in their ears or pain or whatever after some of these procedures. And also it just makes sense in terms of diagnostics and documentation. And then the best of all is that it's actually better for the patient experience. It's inclusive and it's patient oriented for them to be seeing what you're seeing.

As you found out, there are many, many, many styles and models of video otoscopes out there. So you got to kind of do a bit of research. But in my opinion, the gold standard are devices that are extremely high quality images that are extremely easy to use and, you know, just wired, plug and play USB powered by your PC and compatible with your NOAH system through a manufacturer's module right in Noah for great printing options and everything else. So if you're not already doing it, I would encourage you to start using video otoscopy with every patient. And if it's like Me, this will change forever how you practice and you can start creating your own library of VO images so that you can do your own presentation someday.

I think I got. We got a while to get up to 10,000, but anyway, we've got time for a few questions here and we probably won't have time for all of them. So hopefully if you have any questions, you can just fire me an email there. All right, thank you very much. And Anna, do we have time for some questions?

Of course, Clayton, There is plenty of time, so no worries at all. Okay. I already seen three questions for you on the screen. Okay. Right, so let's have a peek at them.

To make medium ear injections like corticosteroids, do you prefer with video otoscopy? I'm not an ENT and I have never done that.

Can we do tympanometry in subtotal perforation? I've heard different things about that, so I'm not really going to comment on that. But as I mentioned, sometimes running a TIMP can be really, really practical

to have diagnostically because you confirm the perforation is there if it's really hard to see, or you confirm that there is no perforation. For people who have had, let's say ongoing perforations, or they know their eardrum is perforated and they're not sure if it's healed yet. Why wired is preferred over wireless?

I. I mean, I don't know. I've actually never used a wireless otoscope. It just kind of freaks me out a little bit. I don't mind dealing with the cable.

I know if it's plugged in it's going to work. But we've got some really great wireless options. I now use, you know, a wireless probe tube with the Aventus trumpet. Like the probe setup, I've never really had any significant issues, but wired is typically always just slightly more reliable. Thank you.

Great presentation. Thank you.

And how do you remove impacted wax? Do you prescription clear wax drops. So I do not like to use suction. I find it a bit awkward. And it's definitely possible to give someone noise induced hearing loss because of how loud it is.

So what we use in our clinic is irrigation if there's no contraindications like a hole in the eardrum. But the go to for me is manual removal with a curette under a headworn microscope. Are you comfortable doing a temp after irrigating? I often am concerned that the ear canal is still wet and may affect the tip. No, it's not a big deal.

In fact, if you run a temp, you'll notice that if the eardrum is looking normal, the temp's going to be normal. And then you have that again. It's the second thing to have that just shows that everything is good with the tm, the head worn loop that you prefer. So the one that I showed here. So for a loop it would be the hine.

That's the system I use. It was pretty great. Nice magnification, really, really bright. But I presently use the Vortex O scope where the magnification isn't quite as strong. But it's amazing for binocular, even in small canals.

Amazing presentation. I have the harmonica. It's great. Good. Yeah, I've been happy with it.

Does audiologist prescribe clear wax in order to remove wax? Again, if they're coming to see me for an earwax buildup, I'm going to take the earwax out for them because. And you need to have the right equipment to do it. Right. If you're not set up properly, it's not good.

You're guessing you're trying to use lighted curettes. It's just not an ideal situation. But if you're set up properly, in most cases you can get it out in just one appointment without even having to ask them to use any sort of drops. But in the odd case, you might have to get them to use drops and come back. But as someone once said to me, as a patient once said to me, when I was.

It was honestly like my first week of practicing and I wasn't comfortable getting out this really deep earwax with just these crappy lighted curettes. The guy said to me, if you can't get it out, who. Who can't? Like, why are you telling me that you can't do it? Anyway, that really stuck with me, so.

So yeah, now I can get it out in most situations.

All right, thanks for the beneficial presentation. And can we remove earwax? As an audiologist, that really depends on, on where you're practicing. Luckily, where I practice in Ontario, Canada, it's fully within our scope of practice. And yeah, we, we actually do.

I do a lot of earwax removal and it's, it's a nice service to be able to provide because people have this acute problem and you can solve it for them and they're very happy. All right, great. Well, thank you for attending and I appreciate it. Hopefully it was helpful.

What a fantastic session. Clayton. Thank you so much. You're welcome. Thank you all for attending.

It's always a pleasure to hear you share your expertise, and we are already looking forward to seeing you again in academia next year. Okay, fantastic. So, speaking of 2025, I'm thrilled to announce that the first webinar of the new year is scheduled for January 27th. It will be hosted by a returning guest and the precious KOL, Dr. Jay Jindal from Audiology Planet UK.

The session will focus on advanced ear examination for clinical decision making. I'd like to take this opportunity to thank everyone for participating so enthusiastically in our webinars throughout the year. Your engagement is what makes Inventis Academia a driven educational platform. Stay tuned for more updates by checking out the academia session on our website and following us on our social media channels. Thank you all and see you next year.

Bye.