Dr. William Detar:

Hello, and welcome to the On-call Consults in Less Than 10 Minutes series on ENT in a Nutshell. A compliment to Headmirror's Online Survival Guide. I'm your host Will Detar. And today we are joined by Dr. Matt Carlson, a board-certified neurotologist. In this episode, we will cover ear foreign bodies. Let's jump right in. Young children and patients with developmental delay are the most common patients to present with ear foreign bodies. Though, occasionally you will see adults with insects, or accidental placements, or lodged hearing aid components. Timely diagnosis and treatment is imperative to prevent infection and morbidity. Dr. Carlson, can you tell us about the differential diagnosis?

Dr. Matthew Carlson:

Yeah. So in most situations on the differential diagnosis would be firm cerumen impaction. When a foreign body has been present for long enough, it'll result in oftentimes smelly otorrhea. So any other condition that can result in otorrhea is technically on your differential diagnosis. So this would include otitis externa or otitis media with perforation, chronic otitis media, and even temporal bone malignancy.

Dr. William Detar:

And what are some of the risk factors or predisposing conditions?

Dr. Matthew Carlson:

Yeah, so young patients are more likely to place foreign bodies in their ear canal compared to adults, of course. You may have a mentally disabled adult. And then, hearing aid users less commonly, but definitely occurs where a component of their hearing aid might fall immediately unbeknownst to them such as the dome of their hearing aid.

Dr. William Detar:

And what history do we need to take for these patients?

Dr. Matthew Carlson:

You'll ask about the timing of the event, the chronicity, or how long the drainage has been present. Whether they had witnessed or unwitnessed placement of an object, the type of object, if known. The mechanism of injury. So most of the time we're talking about just placement of a foreign body in the ear canal, such as a small rock, kernel, seed, or bee, or something like that. But you can have foreign bodies from other mechanisms such as explosion, blast injury, slag from welding, et cetera. You'll want to ask about a prior ear history and then associated symptoms, including pain, otorrhea, hearing loss, and dizziness.

Dr. William Detar:

And what key supply should we bring when seeing these consults?

Dr. Matthew Carlson:

So the key supplies for consultation include an otoscope, loops and headlight for visualization. Ideally, if you have access to a otologic microscope it's very helpful in this situation. Usually, this isn't available in the emergency department setting, but sometimes off floor or somewhere else in the institution it might be available. You'll want to bring an assortment of right angle hooks, loop curettes, alligator and cup forceps, assortment of suctions, and then also your ear speculums. Right angle hooks are

particularly beneficial for round objects, such as a popcorn kernel or a small bead, where you'll advance the hook just beyond the object and then pull back and be able to deliver it. And then for flat objects, an alligator or cups forceps are a nice tools to pull a foreign body out.

Dr. William Detar:

Great. And can you tell us about the physical examination?

Dr. Matthew Carlson:

Yeah. So the goal of your physical examination is to clean any surrounding debris, visualize the potential foreign body, remove the foreign body, and then lastly, evaluate for any associated trauma. Both just abrasions or swelling of the ear canal, but also tympanic membrane perforation or injury. In general, particularly for younger children or adults with developmental delay, you'll often only get one good look. And many times, by the time you've seen them, they've already had multiple attempts by other providers either at the same institution or being referred in. And so you'll want to have all your tools with you and be prepared to do what you need to do to remove the foreign body. It's often really beneficial to build up as much rapport with the patient as you can. And they might even have a, the institution that you're at may have child life specialists that can also help you build this rapport with the patient, which makes it more likely for you to retrieve the object on your first go.

It's also good to look at the contralateral ear and nose and also the nose for other foreign bodies to look for a multiple offender. And then depending on the patient and their symptoms and the way in which they present on an adult who's able to verbalize their symptoms, you might in who reports nystagmus or something else from a more aggressive placement of a foreign body from like explosion or et cetera. You might want to do a tuning fork examination, look for nystagmus. If they have sensory hearing loss or nystagmus, you might be concerned for a state B subluxation or inner ear injury.

Dr. William Detar:

And what diagnostic workup do you order?

Dr. Matthew Carlson:

So typically, imaging is generally not indicated unless there's a high-risk mechanism such as a ballistic injury explosion or concerning symptoms such as vertigo or nystagmus, sensory neural, hearing loss, excessive bleeding, or facial nerve injury. And also, generally, laboratory testing is not indicated in most situations.

Dr. William Detar:

And can you walk us through the acute treatment?

Dr. Matthew Carlson:

So again, if you can get your hands on an otologic microscope, it'll be very beneficial. You want to develop a plan for how you're going to remove it. Again, oftentimes, you have to really work on building rapport with the patient, particularly if it's a pediatric patient or someone with developmental delay, and you'll want to make your first try your best try. As I alluded to earlier, if it's a smooth object, round object, it's best to use something with the right angle and pass it just beyond it and pull back on it. It's tempting to use a suction to try to pull it out, and if it's a very lateral object in the meatus, you might be

able to do that, but it's very difficult for a suction to pull a lodged round object, that's more medially placed out successfully.

You can use alligator cups, or micro cups for flatter objects that can be directly grasped. And then if you see a live insect in the ear canal, which is uncommon, but can happen, you'll want to if it's still alive, you're going to want to kill it prior to removal in most situations. And you can do that by drowning it in mineral oil or 1% lidocaine, which also has the benefit of an anesthetic for the patient.

Dr. William Detar:

And what medical therapy do you order?

Dr. Matthew Carlson:

So if it's caught early and removed atraumatically, there's probably going to be really no significant trauma or irritation in the ear canal, and you can discharge the patient without any topical and medical therapy. But more commonly, the foreign body has been present for some period of time, there's some degree of edema in the ear canal, perhaps small ear canal laceration, or tympanic membrane irritation. And those situations, it's not a bad idea to prescribe a short course of oral topical ear drop with steroid to help aid in recovery.

Dr. William Detar:

So in what situations would you consider going to the OR using procedural sedation?

Dr. Matthew Carlson:

So in most situations, if done properly, you can retrieve the foreign body in younger children, developmentally delayed adults, and then, of course, very compliant adults. It's very straightforward in almost all situations, but there are some situations where it is difficult and it's particularly in a situation with a very young child that's had multiple attempts at removal where they're just not going to let you get a good look. If you're highly suspicious of a foreign body and you can't get it out, you may have to perform a procedural sedation in the emergency department, if it's possible to do so or take the patient to the operating room. If you take the patient to the operating room, typically it can be done very quickly and safely under a mask anesthetic. You always want to ask about the NPO status, whether it's going to the OR or a procedural sedation in the emergency department.

Dr. William Detar:

Okay. And what disposition do you recommend?

Dr. Matthew Carlson:

So mostly patients are able to be discharged. It's very rare that a patient with an external auditory canal foreign body will need to be admitted. At least for routine foreign bodies, as long as they're removed and without significant trauma. Typically, you'll consider an outpatient visit two to four weeks afterwards. If you were able to remove it very early after placement, and it was just something located very lateral in the meatus and there's no trauma, you probably don't need any followup or you could have them follow up with their primary care physician. But more commonly, if it's medially located, if there's any sort of ear canal trauma, it's better probably to see them back at least at one time two to four weeks to make sure that the swelling is getting better. And also at that time when the swelling has

gone down, you can more accurately assess for any potential trauma to the tympanic membrane, et cetera.

So good to see them back at least one time, in my opinion. And then if there's any persistent hearing loss that's suspected or endorsed by the patient, an audiogram is probably good to obtain about two to three months after the event to make sure there's no persistent deficit. With regard to patient counseling, again, if it's removed very early and minimal trauma, generally, no precautions are required, but for the other patient that has more macerations, a little bit of trauma and edema, you'll want them to observe dryer precautions alongside their topical ear drops.

Speaker 3:

So that concludes our Ear Foreign Bodies episode for On-call Consults in Less Than 10 Minutes. We appreciate you joining us. Thanks.