

Dr. William Detar:

Hello. And welcome to the On-Call Consults in Less Than 10 Minutes Series, on ENT in a Nutshell. A complement to Head Mirror Online Survival Guide. I'm your host Will Detar, and today we are joined by Dr. Matt Carlson, a board-certified Otolaryngologist. In this episode, we will cover Otitis Externa. Let's jump right in.

So conditions associated with inflammation and usually infection involving the external auditory canal are referred to as Otitis Externa. This episode will primarily focus on Acute otitis externa and Malignant otitis externa. But we'll also discuss chronic otitis externa, meningitis and other conditions associated or presenting with otorrhea.

Malignant otitis externa refers to a more aggressive infection associated with skull base osteomyelitis. Acute otitis externa, often referred to as swimmer's ear, is most commonly bacterial with pseudomonas and staph species predominating.

Dr. Carlson, can you tell us about the differential diagnosis, including the Can't-Miss diagnosis?

Dr. Matthew Carlson:

So the most common conditions on the differential diagnosis of otitis externa include otitis media with perforation. Malignant otitis externa, most commonly presenting, almost exclusively presenting an immunocompromised host, external auditory canal, or temporal bone malignancy, ear canal foreign body, CSF leak, Ramsay Hunt Syndrome, perichondritis, dermatologic conditions affecting the ear canal, osteonecrosis of the temporal bone. And you can also have a canal wall down cavity with acute infection.

Dr. William Detar:

What are some predisposing or risk factors for otitis externa?

Dr. Matthew Carlson:

A narrow ear canal, dermatologic conditions, including eczema and psoriasis, history of water exposure, most commonly dirty or unchlorinated water. It's more common during the summer months or in humid climates. There's an increased risk in patients with diabetes or immunocompromised status. Hearing aid users, ear plug users, patients with poor hygiene, Q-tip use, cerumen impaction, and radiation exposure.

Dr. William Detar:

And how does that otitis externa typically present?

Dr. Matthew Carlson:

So most commonly patients present with otorrhea. They may experience otalgia. And very severe otalgia is more common in acute otitis externa and also malignant otitis externa. That's in contrast to chronic otitis externa, which typically has less pain and more itching or pruritus. Hearing loss is most commonly conductive. And again, as mentioned, pruritus is more common with chronic otitis externa. Patients will often report ear fullness. Tinnitus is very frequently occurring in the setting of a conductive hearing loss. And then concomitant facial nerve paralysis or other Cranial neuropathy is suggestive of a much more severe infection or another underlying conditions such as a neoplasm and should be looked at more carefully.

Dr. William Detar:

And what history should we take for these patients?

Dr. Matthew Carlson:

Why not find out if it's unilateral or bilateral. The exact timing and rate of progression. Acute generally a condition developing in less than 48 hours versus chronic, it's been present for over six weeks and typically presents with more low grade symptoms. You'll ask about associated symptoms as described above tinnitus, drainage, pain, symptoms of facial nerve paralysis, hearing loss, et cetera. You'll evaluate for risk factors in particular water exposure, diabetes, immunocompromised status. And for patients with diabetes, it's good to ask about their typical glucose levels and as well as Hemoglobin A1c values, if known. You should ask about a history of similar events in the past. History of ear surgery, including known perforation or an ear tube or another notable ear history. History of non-melanoma skin cancers. And then you'll ask for more concerning symptoms, including dizziness, cranial neuropathy, fever, photophobia, altered mental status, diplopia, aphasia, dysarthria, headache, lethargy, other signs of a more aggressive neurological process.

Dr. William Detar:

And what are the key supplies when seeing these consults?

Dr. Matthew Carlson:

You'll want to bring with you an otoscope, 512 Hz Tuning Fork, to assess hearing loss, cerumen cures, ear wicks with small alligator forceps for placement of an ear wick. If you have access to an operating microscope is very helpful to clean out the ear canal, but you may use surgical loupes as an alternative. Of course, want to bring with you an assortment of ears speculums, suction, and a suction source. You'll want to bring with you a culture swab, and that's typically obtain cultures in a patient who's immunocompromised or refractory to regular treatment. But in a very straightforward, acute otitis externa after swimming and otherwise healthy patient, we don't typically perform culture.

Dr. William Detar:

And can you tell us about the physical examination of these patients?

Dr. Matthew Carlson:

The physical examination is directed towards examining and evaluating the ear canal, tympanic membrane in the middle ear. You want to evaluate for concomitant chondritis and parotid swelling. Acute otitis externa is pain with posterior manipulation or pulling the auricle and tragal manipulation. There's always, or almost always a very narrowed and edematous ear canal. In contrast to key feature of malignant otitis externa, is exposed bone or granulation tissue and severe pain that's out of proportion to exam with or without concomitant cranial neuropathy. And again, a key feature of that condition is immunocompromised status. You'll want it to debride the ear canal if possible. Typically, cleaning out the ear canal is very painful for patients with acute otitis externa. You want to inspect the tympanic membrane and middle ear from meningitis, otitis media fusion, perforation, cholesteatoma, ear canal or middle ear mass.

Also look for black or white dry hyphae, which may be suggestive of fungal otitis externa. Of course, you'll perform a full cranial nerve examination with particular attention to the facial nerve. 512 Hz Tuning Fork is generally most commonly suggestive of a conductive hearing loss. Weber will lateralize

to the affected ear, and bone will be greater than air conduction, particularly with complete occlusion of the ear canal.

Dr. William Detar:

So I know the diagnostic workup is directed by a prioritized differential diagnosis. Can we talk about that a bit?

Dr. Matthew Carlson:

So uncomplicated acute otitis externa is mainly a clinical diagnosis and extensive work. It is generally only reserved for evidence of a more aggressive process or in a high risk patient. Temporal bone CT scan may be indicated for evaluation of trauma, complicated otitis media or complicated otitis externa. Whether you have a suspicion for malignant otitis externa, intracranial complications, et cetera. In most cases, an audiogram is not obtained unless there's evidence of persistent hearing loss after resolution of the infection. In most cases, MRI is not obtained in the very acute setting unless there's concern for cranial complications or malignant otitis externa. Although controversial, MRI with gadolinium is largely supplanted nuclear medicine scans for Malignant otitis externa, including gadolinium and technician.

Classically a technetium scan is used to make the initial diagnosis and gallium is used to follow the process. You'll want to consider laboratory testing for immunocompromised or diabetic patients, including glucose, CBC, Hemoglobin A1c. Additional testing may be based on directing history. As alluded to earlier, you'll consider culture for recurrent or chronic otitis externa or higher risk patients and consider biopsy if there's a concern for an underlying malignancy.

Dr. William Detar:

Can you tell us about the acute treatment, both for acute otitis externa as well as briefly for malignant otitis externa?

Dr. Matthew Carlson:

So if your ear canal is very edematous and swollen shut such that topical drops won't reach the middle ear canal, you'll generally place a wick, and that aids in delivery. You can perform drops for acidification such as the acetic acid, which generally has antibacterial and antifungal property. Antibiotics are generally first-line simply because pseudomonas and staph are the most common bacteria for acute otitis externa. Where Ciprodex or floxacin drops are generally preferred. You want to maintain dry ear precautions. Oral antibiotics are typically reserved for otitis externa in higher risk patients, including diabetics with poor glycemic control. Or cases demonstrating more extensive infection, or when for refractory to a topical treatment. In general, you want to avoid ototoxic drops when there's a tympanic membrane perforation or PE tube presence, including a acetic acid, amino glycosides. For malignant otitis externa, long-term oral and IV antibiotics are generally indicated with, or without hyperbaric oxygen and then reversal or treatment of the underlying condition resulting in immune suppression is also valuable when possible.

Dr. William Detar:

And what is the disposition and follow up that's recommended for these patients?

Dr. Matthew Carlson:

So patients with acute otitis externa without more concerning symptoms or aggressive disease course can be managed on an outpatient basis. We typically see patients back about a week after, just to make sure they're continuing to add in the right direction. Admission is generally reserved for people with more concerning symptoms suggested of complicated course of otitis externa or media, aggressive process, immunocompromised status, or failure to improve as an outpatient.

Dr. William Detar:

And what counseling do you provide to these patients?

Dr. Matthew Carlson:

For patients that are managed on an outpatient basis, you'll want to ask them to avoid water exposure or hearing aids or earplugs. They should seek medical attention if their symptoms don't improve within the first week. And then as discussed earlier, tight glucose control is critical for patients with diabetes.

Dr. William Detar:

That concludes our otitis externa episode for our On-Call Consults in less than 10 minutes. Thank you for joining us.