MIGRAINE WORLD SUMMIT

INTERVIEWS WITH WORLD-LEADING EXPERTS

TRANSCRIPT

SINUS HEADACHE MISDIAGNOSIS & TREATMENT

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Introduction (00:05): When they do studies — and they've done large population studies, and even smaller studies where they ask people to come in for evaluation with the complaint of a sinus headache — it turns out between 80 and 90% of the time those complaints are actually migraine. Often these migraines present in the midface, so patients complain of pressure under their eyes or between their eyes. Often in these migraine sufferers, they have a stuffy, drippy nose during the migraine process. So, when people have the complaint of a sinus headache, it turns out that 80 or 90% of the time they're describing a migraine problem.

Lisa Horwitz (00:38): People frequently confuse migraine for sinus headaches. What they think is a headache in their sinuses with pressure and nasal congestion is really migraine. To help us uncover how commonly migraine is identified as sinus headache, and whether we may be mistaking them ourselves, is an expert who literally wrote the book: *The Medical Textbook on Sinus Headache and Migraine*. His book is a comprehensive guide for clinicians. So, who better to break down this misleading condition than Dr. Mark Mehle, a professor, surgeon, and ENT with extensive knowledge in headache and migraine. Dr. Mehle, welcome to the Migraine World Summit.

Dr. Mehle (01:21): Thank you very much for having me.

Lisa Horwitz (01:24): So, we're going to start pretty broadly in our interview today to make sure that we get the best information on this condition. So, very broadly, what are the sinuses?

Dr. Mehle (01:35): Well, sinuses are air-filled spaces that are in the head of every mammal. We think they are there to lighten the skull — and for lack of any other better explanation. But these spaces, unfortunately, can become infected; they become a source of pathology. In a healthy individual, the sinuses are filled with air. If there's a sinus infection, the sinuses are filled with infected mucus — pus, basically. So, we really do see these as a source of problems in the "ear, nose, and throat" world. But normal physiology is an air-filled sinus.

Lisa Horwitz (02:08): So, if there's anything in there besides air, there's an issue.

Dr. Mehle (02:12): Potentially. About 30% of people, when we really X-ray the sinuses, have some abnormality, a cyst, or a thickening of some membrane. So, we consider some abnormality in the sinus to be a normal variant. So, we can't really trust a CT scan, for example, to tell us for sure what's happening. It's really a global picture of what's going on with the patient when we want to look for an infected sinus versus a healthy one. So, healthy ones are filled with air, but sometimes not so much. You may have some membrane-thickening and it really doesn't mean a whole lot outside of a clinical picture.

Lisa Horwitz (02:44): So, taking that definition into consideration, what then is a sinus headache?

Dr. Mehle (02:50): Well, that's a great question and the source of a lot of confusion. So, I'm going to, sort of, erase the term "sinus headache" temporarily. In my opinion, sinus headache is a patient complaint. I hear this all the time. I'm in Cleveland, Ohio; people walk in here every day and say, "Dr. Mehle, I'm having sinus headaches." So, what that is to me is a patient complaint. When they do studies — and they've done large population studies and even smaller studies where they ask people to come in for evaluation with the complaint of a sinus headache — it turns out between 80 and 90% of the time those complaints are actually migraine. Often these migraines present in the midface, so patients complain of pressure under their eyes or between

their eyes. Often in these migraine sufferers, they have a stuffy, drippy nose during the migraine process. So when people have the complaint of a sinus headache, it turns out that 80 or 90% of the time they're describing a migraine problem. And that's the main thing that I try to share with my ENT colleagues who often have to sort out these complaints.

Dr. Mehle (03:52): It's important to be aware that you can have pain in the sinus areas from sinus infections. In a study by Dr. Eross — about 15 years ago [that] was done in Phoenix, Arizona — in his population of 100 people complaining of sinus headache, only 3% of them were found to have an infection in the sinuses. Almost 90% had migraine, or probable migraine. So that complaint can be a descriptor of an infection in the sinuses, but the vast majority of times it's really a migraine when we ask the right questions. A much larger study was done by Schreiber, again about 15 years ago. Same story, exactly. Less than 4% of people complaining of sinus headache have a sinus infection, which again can cause head pain, but almost 90% were found to have migraine. So it's very important for us to sort out exactly what is going on in these patients based upon the clinical presentation and not really hang our hats on that complaint. That complaint, again, is a patient complaint. It doesn't necessarily tell you that the sinuses themselves are responsible.

Lisa Horwitz (04:55): That is so much amazing information. I just want to break it down a little bit for all of our watchers today.

Dr. Mehle (05:01): Sure.

Lisa Horwitz (05:01): So, what you have found, and what studies show, is that 80 to 90% of people who complain of sinus headache, which may not even be a real phenomenon, are really experiencing migraine.

Dr. Mehle (05:16): That's entirely correct. Absolutely. And what throws people off, honestly, is those migraines often present in the midfacial area, so it's between the eyes, or under the eyes. And often these migraines carry with them a nasal response — the nose gets stuffy or drippy during the headache. And the last thing that's really important: Often these patients are told it's your sinuses, repeatedly. This is by well-meaning urgent care doctors, well-meaning practitioners, well-meaning physicians who have treated this serially with antibiotics and decongestants, etc. Because migraine typically will resolve within 72 hours in the classic cases, it has the appearance of responding to these therapies. So often patients come to me with this history of multiple antibiotics, multiple episodes. But until you ask the right questions, sorting out that its identity is migraine, basically, as opposed to an infection, can be very difficult. And our patients are not idiots; our patients have been misled by multiple diagnoses by well-meaning people with the illusion of proper therapy. So, yeah, it gets complicated.

Lisa Horwitz (06:22): Yeah, I was definitely one of those misidentified patients for a long time, so I can really understand how easy it is to think it is your sinuses causing this problem. Do you find that now in the training of new ENTs and new front-care providers, like primary care physicians, that they're being told this information, or is this still part of the physicians' world that needs to catch up to the studies that are coming out?

Dr. Mehle (06:49): Well, I have been giving lectures to the American Academy of Otolaryngology – Head and Neck Surgery for over 15 years now, really discussing this topic. Sadly, there was a Dr. Buse, who published a publication last year — last name is B-U-S-E — who found that the No.1 misdiagnosis still in migraine sufferers, who obtained a diagnosis other than migraine, is

sinus headache. Again, they're using the term sinus headache because that's what people are told. So I think, sadly, this is still a word that needs to get out. We do know that roughly 50% of migraine sufferers have not been yet diagnosed. And this is one of the reasons why we miss that diagnosis, is because of the phrase "sinus headache," [and] because of these multiple, apparently effective therapies, that it's still a problem. So, to answer your question, no, I really wish that everybody was being educated on this topic. But you will find, if you meet multiple laryngologists or multiple primary care doctors, that perhaps this is not as well appreciated as the management of laryngeal cancer or things that they focus more on. So, yeah, you cannot trust your provider to know this necessarily. It really is the patient's prerogative to at least find somebody who deals with this or can diagnose it or perhaps, you know, start figuring it out on their own. It's a symptomatic diagnosis. So, again, the patient themselves, with a little education, can actually put their finger on this diagnosis even without their physician's help.

Lisa Horwitz (08:16): So, shifting to the term sinus headache, which we've already discussed is more of a patient complaint than a condition.

Dr. Mehle (08:23): Correct.

Lisa Horwitz (08:25): How common are these?

Dr. Mehle (08:27): Well, again, as a patient complaint, it's a very common one. I think that what we really need to do is to sort out that patient complaint from migraine, which is a very common thing, to what we like to — in ENT at least — refer to as rhinogenic headache: That means a sinus infection or a nasal inflammation has triggered the headache. And, again, if you look globally at the sinus headache complaint, less than 4% of them are rhinogenic. So, the rhinogenic headache I think is important to sort out of this whole thing. We do know that migraine is extraordinarily common, one out of five women, roughly. In an ENT office, people who walk into the door, almost 20% of the people we see in ENT have a migraine problem. If we ask the right questions, we can identify that. So how common is this? Extraordinarily common. What isn't common is the sinuses, [in] themselves, being the source of that complaint. So it's, again, it's important we sort that out.

Lisa Horwitz (09:20): If a patient does approach an ENT with this issue and they determine that really, it's more of a migraine, is that ENT then equipped to treat them? Or would they be referred to a neurologist or maybe a primary care physician who has the better knowledge of the treatments available?

Dr. Mehle (09:36): No, it's very individual. You're going to find a lot of otolaryngologists (ENT doctors) are comfortable treating this themselves. When I gave my last academy meeting — again, I do this every year at our ENT academy national meeting — I had 300 attendees and the majority of them were educated on how to treat this; a lot of them raised their hand that they already treat this. So, at least among ENT doctors who are focused on sinonasal complaints — that's sinusitis, etc. — the majority of them are comfortable at least doing a first round of treatment using migraine-specific medications and making recommendations that can be helpful. Other otolaryngologists are not comfortable at all managing or treating migraine and they'll refer to neurology.

Lisa Horwitz (10:17): What are some things that can cause a rhinogenic headache?

Dr. Mehle (10:22): Well, two more common things. One is acute sinusitis. So, it's certainly true that an acute sinus infection can cause pain and pressure, no doubt about it. There are four main symptoms for acute sinusitis: It's pressure in the face, but also nasal discharge, nasal stuffiness, and a blunted sense of smell. So, we see a lot of that with COVID lately, but blunting the sense of smell is one of the classic things we see with acute sinusitis. Those four symptoms are the main symptoms of acute sinusitis; you need at least two of those four. The important thing for our audience today is that headache, in and of itself, is not a symptom of acute sinusitis unless you have thick drainage in the nose, unless you have nasal stuffiness, or unless you have a blunted — a temporarily blunted — sense of smell as part of that presentation.

Dr. Mehle (11:09): Moreover, we really think that acute sinusitis is a process that lasts at least a week to 10 days. So if you're having facial pain and pressure for seven to 10 days — which is longer than a typical migraine episode — and having thick drainage, or having nasal stuffiness (which is new), or having a lack of a sense of smell, that would support acute rhinosinusitis or acute sinusitis as being the source of that facial pain and pressure. So it does exist, certainly. It's less than 3% of people presenting with this problem. That does happen.

Dr. Mehle (11:42): Now, we also see problems with chronic rhinosinusitis or chronic sinusitis. So, chronic sinusitis is more than 12 weeks of symptoms. Yes, that can cause pain and pressure, but again, that stuffiness, dripping, and lack of a sense of smell are part of the presentation. Note that I'm talking about time. So, if you have pain constantly for 12 weeks or more straight, in addition to stuffy, in addition to that drippiness, in addition to a lack of a sense of smell, then that supports chronic rhinosinusitis or chronic sinusitis as the source of that pain. That would go along with this. Remember that most migraine presentations as sinus headache are 72 hours or less — these are episodes. So, typically patients have at least five episodes. The episodes are shorter and they resolve, whereas that 12 weeks straight would support sinusitis as being the source of this. So, yeah, rhinogenic headache definitely exists; it's just a rarity. And I think it gets overdiagnosed, unfortunately, as opposed to underdiagnosed which is, you know, seldom a problem. And so, it is out there, but not something that's terribly common.

Lisa Horwitz (12:47): So, for most of the people who experience sinusitis, is that coming from a virus, an infection, or could it just be inflamed allergies, an overstressed immune system?

Dr. Mehle (12:59): The answer to that question is: Yes. You summarized it very nicely. It can be all of the above. So, when we talk about acute rhinosinusitis, that usually starts as a common cold. About 2% of colds go on to a bacterial infection, which is — the virus itself is an infection of course, but that bacterial infection is where we reach for antibiotics. And most ear, nose, and throat specialists won't reach for an antibiotic until people are sick beyond 10 days, or certainly beyond 14 days. If it's getting worse after 10 that's symptomatic — where that's typical of a bacterial sinusitis. And, again, that typically follows a cold. It's about 2% of colds that will turn into that. So, good physicians usually don't reach for that antibiotic right away because we realize that the common cold, which is viral, will not benefit from the antibiotic. So, quite literally, the antibiotic is all side effects, no benefit.

Dr. Mehle (13:46): Chronic rhinosinusitis, when it's more than 12 weeks, falls into your later descriptors of an inflammatory condition. Allergy may set you up for that. Nasal polyposis is a great example of an inflammatory condition: Little sacs of fluid form in the nose, they block the sinus openings. Yes, that can generate pressure and pain in addition to drainage, and stuffiness, and lack of a sense of smell. And again, that's entirely inflammatory, and does not appear to have an infectious component. For chronic sinusitis, that 12 weeks or longer, it's still hotly

debated among ENT doctors whether infection is really part of that at all. So we have a tendency to traditionally use longer courses of antibiotics as an effort to clear it up. But very few studies have ever shown benefit from antibiotics, and there's not a single antibiotic which has been studied and approved by the FDA for chronic sinusitis. That becomes a frustration. We use nasal steroids, we use other treatments, but there's no indicated treatment for chronic sinusitis because these studies on antibiotics have never shown a benefit. So again, we're not really sure there's an infection as part of that, although typically we'll try antibiotics before we consider surgery.

Lisa Horwitz (14:55): I know we've answered this question multiple times throughout our other questions, but I'm going to ask one more time. What is the difference then between a sinus headache and a migraine?

Dr. Mehle (15:07): So again, the term sinus headache is a complaint. We've talked about rhinogenic headache where sinusitis causes that pain and pressure and then we talked about migraine. Now migraine typically is episodic; it typically is — in the classic descriptions — between four and 72 hours of symptoms. That's still the vast majority of patients who have the sinus headache complaint of migraine. With that, you may have stuffiness and dripping, but again, the periodicity, the fact that it happens off and on in bold bursts, and the fact that it typically resolves on its own within three days, would support the use of the description of that as being caused by migraine.

Dr. Mehle (15:42): So, I use those migraine diagnostic criteria very openly in my practice: How long does the headache last? What happens during the headache? The main criterion for migraine is: It's worse with movement. So I ask them if they like to lie down during the headache. I ask them if they have moderate or severe pain. I ask if it's unilateral, although 40% of migraine is bilateral — it's both-sided pain. And again, I ask them if with this sort of complaint that they have issues with secondary things like nausea or vomiting, or don't like lights and sounds. A lot of times it really falls very much into classic migraine territory, with the exception being the presence in the midface; so midfacial migraine is often misdiagnosed — it's behind the eyes, between the eyes, under the eyes. That's where they feel this pain. But again, the periodicity, every four to 72 hours, that's very typical for this sort of thing.

Dr. Mehle (16:35): Last but not least, I ask about a throbbing character; the throbbing character is very typical of migraine. Why that's important is if you look on your ads on television, they often advertise Advil Sinus or these sinus preparations. They often show that throbbing face and that throbbing. When I hear that I hear about throbbing, it's almost always migrainous. So I always ask that question because that's one of the main criteria to diagnose migraine, as well. So again, that's what sort of throws us off our course here because the patients are often told it's your sinuses when it's midfacial. Often, they have stuffiness or dripping during the episode. But again, the pain is neurogenic, it's related to migraine process; it's not caused by blockage of the sinuses. That's why it's important we sort out the timing. Acute sinusitis longer than 10 days we consider antibiotics, chronic rhinosinusitis longer than 12 weeks we consider intervention, but migraines up to 72 hours, typically. So those shorter-duration episodes would point one toward the diagnosis of migraine and away from the diagnosis of a sinusitis-related pain.

Lisa Horwitz (17:40): It is very interesting that the sensations of pain in the face can feel almost identical. And we really are looking at these secondary symptoms to make the determination of which type of condition you're experiencing.

Dr. Mehle (17:53): Yeah, that and the timing; the timing and the secondary symptoms are exactly what you want to hang your hat on. And I think the pain is identical. It really is. It's just stimulation of the trigeminal nerve — whether it's stimulated in the sinuses by pus and infection or stimulated centrally by the brain-triggering pain along the trigeminal nerve, is kind of irrelevant. It feels the same to the patient. So it's very hard to sort out. And I think that the timing is the key factor plus those secondary effects.

Dr. Mehle (18:19): One of the things that throws a little wrench in this is, last but not least, it's possible to have chronic sinus problems *and* have migraine; you may have them both. And that's where it gets a little difficult because I have many patients come in to me and they are carrying with them a CT scan. The CT scan shows findings consistent with chronic sinusitis and they're referred to me for consideration of surgery. They are still having episodic pain; they're still having episodes of these sinus headaches that unfortunately are very typical for migraine. So, they may have migraine plus have chronic sinusitis.

Dr. Mehle (18:53): Large studies have looked at sinus surgery. And when they look at sinus surgery in these larger studies, some studies have shown that surgery does nothing for sinus headache. And other studies have shown it's the least likely symptom — the headache — that we're going to resolve. And I think the reason why that's the case is because we're not really screening out these migraine sufferers in the chronic sinusitis population. So, unfortunately, it gets cumbersome when people have a positive CT scan for sinusitis, but if you don't ask the right questions, you may miss the fact that, actually, [the] episodes are migraine. Because it's possible to have both, and they're considered comorbid. There are studies that came out that look at patients in general, and they find that if they have chronic sinusitis and migraine, the migraines may get worse because they also have chronic sinusitis. So again, the real world is hazier than the summary we just chatted about. But the episodes are a good way to start. It's a good way to look into this as this is sorted out. And most good ENT doctors are going to realize that you don't operate until you ask those migraine questions. And I think that's an important thing, I guess, to conclude with when we talk about that sort of presentation, is that it gets a little cumbersome from a diagnostic standpoint based on that.

Lisa Horwitz (20:09): So, if you're a migraine patient who also has severe allergies or regular issues with your sinuses — congestion, sinusitis — how can you, at home, maybe determine which medicine you need to take that day? I have allergies, I have had sinus issues, I also have pretty regular migraine, and I often have difficulty deciding: “Do I need a decongestant today? Do I need my abortive meds today?” Is there anything we can do at home, as patients, to kind of make sure we're treating ourselves correctly in that moment?

Dr. Mehle (20:43): Well, no offense, but you're exactly the type of patient I'd like to see, because somebody who has both problems, or multiple problems, are people that can really help as we tease this apart. So, a couple of things here that I think are important. First of all, there are a lot of good over-the-counter medications for allergy nowadays. By far the most effective over-the-counter medication is a nasal steroid spray — things like Flonase spray, Nasacort spray — those are two trade names; fluticasone, triamcinolone are the generic names. You can buy those over the counter. If they're used every day during your allergy season, they are by far the most effective allergy treatments we have. They have very little systemic interactions. So again, these are things that will work on stuffiness and dripping, but they have to be used every day.

Lisa Horwitz (21:28): They are a preventative more than a "take in the moment." OK.

Dr. Mehle (21:32): Exactly right. That's exactly the case. We had a new one added, which is azelastine spray that was just released about a month ago. That one works quicker; it works within about a half hour or so. Again, for stuffiness and dripping it is effective; it's a nasal spray which is often quite helpful. If you're having itching, and sneezing, and watery drainage then antihistamines can be helpful. So, over-the-counter antihistamines — the newer-generation ones — trade names used to be Claritin, or Allegra, or Zyrtec, they are all available over the counter now; cetirizine, fexofenadine, loratadine are the generics — the generics are fine with these. Those are wonderful for dripping, and sneezing, and itching. So, if your eyes itch, for example, and the nasal sprays aren't helping, then oral antihistamines are fine. They have very little baggage nowadays. The ones that are available sedate minimally, or not at all, and they're a good thing to add to this.

Dr. Mehle (22:27): Decongestants are sort of a double-edged sword. So, decongestants are medications like pseudoephedrine — Sudafed's the old trade name. These are the ones you have to go to the pharmacist and ask for them. And these sorts of decongestants, which affect only stuffiness — that's the only symptom they work on is a stuffy nose — may be helpful. The problem with decongestants is that they're similar to caffeine in that they will have a tendency to affect blood vessels. And in a migraine sufferer, if you take Sudafed every day, just like if you drink coffee every day, it'll start triggering headaches when you don't take it. So I'm concerned about pseudoephedrine, for example, taken every day, and somebody like yourself who has nose problems plus has migraine, that these decongestants may actually start triggering headaches. So, you have to be careful with that because you can convert into a chronic daily headache situation by just taking Sudafed every day.

Lisa Horwitz (23:19): I also want to come back to ... you gave such a great description of ways to treat sinusitis, or sinus inflammation and pain, and a lot of it was really preventative: staying on top of it by taking a daily allergy med, a histamine blocker, or the nasal sprays. Is that just to help the overall inflammation to keep things kind of at an even keel?

Dr. Mehle (23:45): Yeah, absolutely. And if patients do have nasal allergy or if they do have chronic sinus problems, those nasal sprays are the mainstay. That's one of the cornerstones of management. So, sprays help to decrease inflammation; that's all they do. If you have allergies, for example, the sprays help stuffy, drippy, itchiness, and sneezing, all four symptoms of nasal allergy. And they're the best. They work better than any of the sprays. So a preventative course during your season will help to minimize the flare-ups. Now, every time I see somebody with rhinitis from allergy, like yourself, who also has migraine, will report a seasonal pattern. They'll find they have more migraines in the fall and the spring; that's a very common thing. I think part of that has to do with rocking the boat because we're getting the allergies under control. Part of that is that I think there's a natural tendency for there to be a seasonal pattern in migraine that happens even without the nose problems. So those times of year, I think maintaining the nasal spray is a great idea for somebody like you because you at least know that [that] variable is controlled. So, if you wake up with a headache, but you've been using your spray, you can determine that, "Well maybe this headache is more likely to be migraine. Maybe my triptan is a better choice this morning."

Lisa Horwitz (24:54): And I just want to clarify when we're saying nasal sprays, we're not talking about nasal decongestants. We're talking about nasal — they are steroidal, correct?

Dr. Mehle (25:04): Steroids. They are steroids, yes. And don't let anybody be afraid of the term steroid. For example, the absorption in the system for something like fluticasone, the old trade

name is Flonase, is well under 2 or even 1%, depending on the study. So, it doesn't get absorbed systemically. They're not addictive, they're not habit-forming, there are no whole-body side effects in the vast majority of people, so they're over the counter because they're very safe. Now, also over the counter are decongestant sprays like oxymetazoline — the old trade name is Afrin spray — or 4-Way nasal spray is another trade [name]; those ones are habit-forming. Those have the sudden opening-up effect as a decongestant. And I will personally use those when I have a cold, maybe one or two days. But beyond occasional use those are habit-forming; those will create a worsening of problems. And I think particularly if you have a tendency toward migraine, getting hooked on that sort of nasal spray will make matters harder to manage for you.

Lisa Horwitz (25:56): Where can we learn more about what you're doing or follow your work?

Dr. Mehle (26:00): Great question. I don't have a website, per se. I mean I do publish things on occasion. Migrainedisorders.org is a website that a colleague of mine set up; I'm on the board that manages that. And I think that's probably the single most useful place for physicians and patients to get information; it's really delightful. The website's geared toward both: So there's a physician click-on and there's a patient thing that you click on there. I have found the majority of my patients with migraine who are on the internet looking for information actually will learn to tolerate the physician end of things, and will learn how to read that literature and will certainly run down that path. It's a great way to learn more and more about this, and this is — in my patient population — some of the most educated people. I think they're forced into that because they realize a lot of the migraine information is not broadly known.

Dr. Mehle (26:54): I think that's why we are doing this sort of program is to share information. But they will find themselves on the physician click-on site. So they'll find themselves reading the medical literature on this, after they get used to some of the terminology, which is really fairly straightforward. So, migrainedisorders.org — there's no space in that — is the one thing I would recommend [and] is a very good resource. And again, I'm involved with that. I'm not responsible for it, I didn't invent it, but I always play along with the people there. And I think that it's a very nice resource for physicians and for their patients to get more information. It's very much updated, which is kind of fun, too.

Lisa Horwitz (27:30): Are there any other additional resources that you recommend for patients?

Dr. Mehle (27:35): Other than that, no. I think that certainly, you will find there's a lot of good information on the internet and I think that, certainly, presentations like this; I think that meetings like this that are, you know, around the world, well attended, I think are very helpful. This is exactly the sort of resource I think is useful.

Lisa Horwitz (27:52): I just want to sum up quickly what we've gone over today because we have covered so much amazing information.

Dr. Mehle (27:58): Sure.

Lisa Horwitz (27:58): I think the main takeaways are [that] 80 to 90% of people who are complaining of sinus pain, sinus head pain, or headache are actually experiencing migraine. And the best way to determine which you are experiencing is to look at the secondary symptoms. If you're experiencing aura, sensitivity to light or sound, maybe nausea, you might be experiencing

a migraine; whereas if you're suffering from extreme congestion, mucus discharge, you might be experiencing a sinusitis episode. Is that correct?

Dr. Mehle (28:36): That's entirely correct, with the one other thing being the timing. You know, typically the midfacial pressure would be 72 hours or less for the migraine, and longer than 10 days for a sinusitis episode or even longer than that. So, I think the timing is important in addition to the secondary symptoms. I guess the last caveat is: Don't expect your doctor to identify this right away, necessarily. Because most of my patients have multiple episodes of antibiotic treatments and decongestants, etc., being told it's your sinuses when really these questions may not have been asked. So, I think the patient who is well educated, who sorts this out on their own, is probably the best weapon and the best step toward a correct diagnosis or proper diagnosis. Because I think people then diagnose this themselves; it's all symptom based. So that's why these sorts of presentations are very important.

Lisa Horwitz (29:23): Is there anything else you think we should get out there to the public?

Dr. Mehle (29:27): You know, I think you've done a very nice job. I think the one thing you got to get out to your public is: You may want to get a second opinion. Not all ear, nose, and throat specialists treat migraine or understand the migraine diagnosis. I think the majority of people do. But if you're not getting the kind of results you expect — perhaps from an ear, nose, and throat doctor who didn't adopt migraine therapy, which is maybe 50% of the ear, nose, and throat population — never hesitate to get a second opinion. There is no good physician who is offended by a second opinion. That's the one thing that's certainly true. So, feel free to ask, feel free to get that second opinion, to try to put all the information together properly. Now that's the one bit of advice that I think is very useful for patients.

Lisa Horwitz (30:07): That's awesome. Thank you so much for your time today. This has been really great.

Dr. Mehle (30:12): Well, thank you very much, as well. I appreciate being part of this.