Introduction to Migraine and Neuro-Ophthalmology

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This is Doctor Talks, real talk from real doctors on the issues that matter to you most. Hello, everyone. I'm Dr. Rudrani Banik. Today, I'm thrilled to speak with Dr.

Kathleen Degree, who is a leading neuro-ophthalmologist with a special interest in migraine. Thank you, Dr. Banik, for having me. Absolutely, it's an honor to interview you.

I've looked up to you for much of my career as a leading neuroophthalmologist, so it's wonderful to have this chance to chat. So Dr. Degree, could you begin by just sharing with our audience, what is it about migraine that interested you so much?

There's so many different topics within the field of neuroophthalmology that people could focus on, but you've chosen migraine, so why is that? Dr. Banach, every single day that I'm in clinic, I see people with migraine.

And every ophthalmologist in the whole world has somebody with migraine in their clinic almost every day. There are so many visual symptoms that people complain about that are actually from migraine and not something actually in the eyes whatsoever.

I immediately saw that I cannot practice neuroophthalmology without knowing about migraine. And the other side of the coin is when I'm in the headache clinic, I can't even imagine doing a headache clinic and not knowing something about neuro-ophthalmology because the visual system is involved in migraine every day.

Those are such important points, Dr. Diggory. And I feel the same way. I feel as though at least 50% of my patients coming into neuro-ophthalmology clinic have some kind of headache syndrome, whether it's migraine or something else.

It is important for us to understand migraine and all of its various characteristics and symptoms. Let's talk a little bit about headaches in general, because there are so many different types of headaches, different classifications.

What are the most common ones that have to do with vision? I think we have to first understand that headaches can be primary headaches. And a primary headache means it's migraine, tension type, cluster, or one of the autonomic headache syndromes.

And these have no pathologic background, like you don't do an inch, find something. Then there are secondary headaches, and that's where a provider needs to actually listen to the patient to figure out what kind of headache that they have.

Understanding Migraine Types and Diagnosis

Now, in the migraine, there is migraine with aura, and that means there's a neurologic event that happens before the headache occurs. 90% of the time, these are visual.

Less common is like numbness of the hand and mouth, a little bit of weakness on one side of the body, or trouble with speech. Otherwise, it's either with aura, which is less common than the kind with aura.

Now what makes migraine so unique? You mentioned that it's a neurologic condition. There's something that happens in the brain. What do we think is happening there that's different than what may happen in a tension headache, for example?

So migraine is actually associated with a family predisposition. So in other words, usually people have a migraine family history. And sometimes you have to ask, did your mom have sinus headaches or something like that?

Because about 95% of the time when people say they have sinus headaches, they actually have migraine and they don't have sinus headache at all. So it's, first of all, important to realize that there's a familial predisposition.

Then the brain of somebody with migraine is a little bit different. It acts a little differently, much more sensitive, just in general. Light is a little bit brighter, sounds are a little bit louder, smells.

People with a migraine brain probably can smell somebody's perfume three pews ahead in church. And they're also prone to a little bit more dizziness, car sickness, and so on.

And then about 20% of people who have migraine, 20 to 30% of people who have migraine will get the aura. And the aura is actually, we think, a neurologic disturbance called cortical spreading depression.

It's like a wave in me that occurs when it's visual, it's occipital or the back of the brain. And it will start like in the center of or come from the outside and move in.

And then it can be followed by a head or not. So it seems like stages of migraine, right? So there are different things that happen in the brain, and then there's a sequence of events that happens that leads to the full-blown attack.

And then there are things that happen after migraine as well, right? It's not just No, there's a prodrome phase where people may have cravings or, you know, feel there's some trigger that they think they're having, but it's really part of the prodrome.

Then there can be the aura phase. If you have aura, then the attack phase, and then the post-drome where afterwards you feel like your brain is fuzzy and it doesn't work quite right.

Yeah. Yeah, and I myself, I have migraine, so I can relate to everything you're saying. I've experienced all of that. And I know a lot of people out there probably have experienced it as well, but they were never actually officially diagnosed with migraine, correct?

So there are people out there who have the condition but not realize it. So can you tell us a little bit about the diagnosis of migraine? Like, how can you know for sure that you have migraine versus some other type of headache syndrome?

Okay, yes, and you're right that a lot of people are undiagnosed. So a HIC that causes things like light sensitivity and nausea and it starts to severe, there's been a study called ID migraine that says if you have two out of those three symptoms, it's 90% chance of it being migraine as long as it's not something else.

Whereas attention type is going to be just nondescript, mild, maximum moderate. no more than light or sound sensitivity, and there is no nausea whatsoever.

The other thing about is they often get better with activity, whereas migraine, if you have migraine, it will get worse if you're more active. So that's why people with migraine tend to stop what they're doing, maybe go to a dark, quiet room and stay away from noise and light and sound and activity.

So to summarize Dr. Degree, you mentioned, okay, the three things to think about are the light sensitivity, the nausea, and the severity of the headache, correct?

And that may signify that you have migraine versus one of the other types. And I always tell my patients, you can look online, you can Google, you can go to Dr.

Google, but it's always best that you be under the care of a doctor, that you go see your doctor, whether it's your primary or a neurologist, if you can get an appointment.

or even your ophthalmologist, talk to your doctor about these symptoms really to get the proper diagnosis. So important. You're absolutely right. You're so right.

Dr. Diggory, let's dive into very specifically the visual symptomatology of migraine.

Visual Aura and Light Sensitivity

Could you describe for us what, I know there are so many different symptoms that can happen in migraine, but what are the top five types of visual symptoms of migraine people may experience?

Let's start with the aura. And this is a visual, and I alluded to this a little bit ago, but frequently people will have zigzag lines or spots or dots that'll start centrally and move out to the, it happens over a period of time.

It's always less than an hour. And there's usually a positive phenomenon, meaning there's something bright and maybe a little negative phenomenon, meaning something dark.

And it's, but it usually goes off to one side or the other. And people feel like it's in one eye. Like they think it's, oh, it's in my right eye. But unless you take your book and look at the book with one eye and the other eye to determine that this actually is in both eyes, because it's coming from the occipital lobe and it will be in both eyes.

The aura usually lasts less than an hour. So if you have visual symptoms that are going on, sparkles and dots and things like that for more than an hour, that's like a warning sign that you really have to talk to somebody.

And there are other things that can confuse people about aura, like an occasional spot or a dot or something like that. And you can talk to your eye care provider about that as well, but the visual symptom of migraine aura, this visual phenomenon is a discrete symptom that builds up, and it's usually followed by a headache shortly thereafter the aura.

Now, the other thing I want to impress upon our listeners and viewers is that people who have migraine are also very visually sensitive. So they may have a little flicker here or a little spot here, or they may see their floaters more easily, or they may be disturbed by, you know, something going on in their environment, like stripe-induced discomfort or Venetian blind syndrome, where stripes can really bother people or shadows can bother people.

And that's because they're visually, and having those symptoms is not an aura. Okay. it is that visual sensitivity that's occurring in migraine. But an aura is a discrete neurologic event that has this buildup with positive phenomenon, negative phenomenon, and less than an hour.

I wanted to hear something with you related to what you just said about being visually sensitive. Two things that bother me a lot are we have blackout shades in our bedroom, but there sometimes is like a little sliver of light that comes in from the edge of the blackout shade, and I cannot tolerate that when I see that.

And the second thing is, especially if I'm feeling I may be having a migraine coming on, even driving in a car and watching the world go by, scenes go by very quickly or even through trees, seeing sunlight going through trees can be very disturbing.

So there is a host of different symptoms people can get in between their attacks, right? It's not just during a

migraine that people may have some of these symptoms.

And that, and I think it's reassuring to the migraine. I say it's like you have a Ferrari-like brain. It's real sensitive to all these things, and it's a good brain to have.

people with migraine are great multitaskers and they're, they're very sensitive people and they see things other people don't see and, and pick up on things.

So I, and it's, there's a yin and a yang to having migraine, but a migraine brain is very visually sensitive in general. Some brains are not just light sensitive, but more sound sensitive, like little noises just people crazy or Some people's brains are smell sensitive, and some have all of that, or emotion sensitive.

Yeah, it's really an interesting, it's an interesting brain. It's a really interesting brain. I love that analogy. I'm going to use that. I'm going to borrow that from you.

Go right ahead. But it helps you understand that's why when you have migraine, you have to learn how to take care of your brain a lot more than just a normal Volkswagen-like brain.

Absolutely. So let's get back to the visual symptoms. What's the second most common visual symptom you've seen in your migraine patients, Dr. Degree? Light sensitivity, also known as photophobia.

And this is a really interesting symptom about the extent of people with migraine get photophobia, and it's known to be the most bothersome symptom that people can have.

So photophobia is extremely bothersome to people when they have their migraine. They'll get the shades down, they'll go into a dark room, and I've had people say even the LED light on their radio alarm clock, they have to cover it up when they have a migraine because that will bother them too.

So, light sensitivity. And light sensitivity is such an interesting symptom because you don't even need to have vision to be light sensitive. As long as you have, there's a kind of cell in our eyes, an intrinsically photosensitive retinal ganglion cell that doesn't respond to what you're looking at, but it responds to light.

And it's very old, like it's in amphibians and birds. mammals and all kinds of other animals. And these cells also pick up on light. Okay. And then it goes back into the brain and in people with migraine, it connects with the pain center as well.

And then you're off to the races with severe less activity that also can create more pain. So it's a very common symptom. We can treat photophobia. There are treatments for photophobia in general with lenses and things like that.

But the main thing is to control the underlying migraine. So that I'd say is the second most important visual symptom with migraine. Dr. Degree, do we know why these particular cells in the retina are more sensitive in migraine patients?

Has that been shown? We don't know why they are more sensitive. I would suppose that it's not just the cells that are sensitive, because everybody, every animal has these cells, but it's the way the cell sends signals back to this area of the brain in a person with migraine that might be altered.

I think it's the brain that's different, not the cell in the eye. Got it. Okay. Understood. All right. This has been such an incredibly fascinating discussion about migraine and vision with Dr.

de Grey, our expert for today. We are going to take a very short break. We'll hear from one of our sponsors and we'll be right back. If so, you may want to consider the migraine bundle designed by America's integrative neuro-ophthalmologist, Dr.

Ronny Banach, M. D. Com, the signature supplement in the migraine bundle, contains magnesium malate, riboflavin, feverfew, curcumin, and rosemary extracts.

Nourish, the foundational supplement in the migraine bundle, is a premium multivitamin for eye and brain health. Soothe is the third powerful component of the migraine bundle.

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Say goodbye to migraine and hello to a brighter, clearer day with the migraine bundle. Order now and take control of your migraine, naturally. So continuing on our previous thread, Dr.

DeGray, what is the third most common visual symptom of migraine that you hear from in your patients? I would say the next most common is a lot of people have burning itchy eyes, especially in chronic migraine.

Chronic migraine, by definition, is migraine more than 15 days per month. So when you have migraine more than 15 days a month, you have chronic migraine.

And in studies that have been done, people with chronic migraine almost always have dry eye symptoms. And I think it's underdiagnosed in our patients with migraine.

And you can imagine the cornea, which is the clear covering of the eye that protects our eye, it's in front of the iris or the pupil, has the most dense trigeminal endings.

Sponsor Break

And so the cornea has the same endings as the pain system for the whole eye orbit and the whole system for the brain. So that's why people who get meningitis can come in with eye pain and even light sensitivity because of that trigeminal innervation of the dura and the vessels around the brain.

So having dry eye symptoms, so if you have migraine and you have a lot of pain in your eye, Think about it. It's every day you're like stimulating your migraine center.

That's not good. You don't want something stimulating your migraine center like dry eye. And dry eye is ubiquitous. It's all over the place. I'm at the University of Utah.

Every day we live in a dry climate. Every day people are complaining about dry eye symptoms. and people with chronic migraine almost ubiquitously have dry eye symptoms.

And so this is one that you should definitely talk to a care provider about because there's so many easy treatments over the counter, derivative-free tears that can be used to take care of that symptom.

Yes, absolutely. Yeah, so it's important to recognize this. I think you hit on this point that migraine is common, but dry eye is also common. When you put them together and it's just, I don't want to say it's an epidemic, but it's just so frequently we hear these types of symptoms from our patients.

Wow, okay. Let's talk about number four. What's the fourth most common visual symptom in migraine?

Dry Eye, Pupillary Changes, and Ocular Red Flags

I have patients that come in and say, Oh, something's going on with my eyes. My pupils are going up and down and up and down. And, or they're on equal or somebody will be having dinner with some goodness.

You've got a blown pupil on one side. That must be bad. But the reason for that is that our autonomic nervous system. the sympathetic and parasympathetic system, these systems go right to the iris.

One constricts the pupil. One dilates the pupil. And in migraine, the autonomic system can be somewhat disrupted. And so you can have episodic pupillary dilation or episodic pupil constriction or even unequal pupils.

So it's a symptom. It's not all the time. And some people have it in between headaches. And it's adjusted with headache, and so it is another symptom that people can complain about.

Yeah, that's I think it's a really important one to recognize that it could be related to migraine. I would say every few months I have a young, it tends to be a young woman for whatever reason, come in with a very big people on one side and perhaps they have a headache with it or perhaps they have no symptoms otherwise with it, but it does require an evaluation.

So if that happens, I would suggest people go and get it checked out before saying, oh, it's just my migraine. Definitely get it checked out because it could be other things as well.

Other than your dilation or constriction, you're absolutely right. So have your NICARE provider check it out. Yeah. And some of those other conditions are potentially serious.

So it's even more important to go quickly. Don't wait. It's the weekend. I'll wait till Monday until it goes away. Please don't wait. Try to get in to see at least an urgent care center if that's possible.

How long does it usually last? Like if somebody has a pupil change associated with migraine, how long the duration would you expect it to be? I think that's extremely variable from person to person.

Sometimes it's like an hour or two and sometimes it's all day and sometimes it's several days. So I don't think you can actually say that the time, amount of time, but if you have a continuously, let's say dilated pupil and then you have any other symptoms, double vision or pain around the eye with that or something like that, then I would, I agree with you.

You got to get it checked out. Yeah. The other kind of red flag would be a droopy eyelid is yellow, right? Yeah. So definitely get it checked out. Don't wait on that one.

All right. Now we are up to our last visual. Not that this is really the last, but the last for today. What is the fifth most common visual finding in migraine?

I think this one is not a symptom, but it's a referral. I get these referrals for ocular migraine. Okay. There is no such thing as an ocular migraine at all, all right?

And because there's migraine with aura, and that's what most people mean when they say ocular migraine, but then there's a very rare condition called retinal migraine.

And a retinal migraine is truly limited to one eye only. But retinal migraine is so rare, it's a rare condition, yet there are many other dangerous causes of transient monocular blindness, meaning you go blind in one eye.

Each eye, yep, it's only in one eye. Those, that symptom is very rare. It can be retinal migraine. There are a host of other things and some of them are dangerous like transient ischemic attack or something like that that could occur to cause the visual loss in one eye.

So that is another symptom that people should definitely see their primary care ophthalmologist or optometrist about because that's really important to get to the bottom of what is causing that.

And retinal migraine is low on the list. I'm so glad you brought up this term that's so often used, ocular migraine. I've heard it used by ophthalmologists, optometrists, primary care doctors, and I always try to really tell them, emphasize that it's not a real term, but it's become so common in lay terminologies.

If you're a provider listening, please use the correct terminology, visual or for binocular visual disturbances related

to migraine and retinal migraine for monocular issues related to migraine.

because it helps us so much in our workup. I'll let you explain, Dr. DeGray, how do we work or differentiate these two and work them up differently? Or do we need to work?

Yeah, if it's a transocular blindness and possibly migraine, we're looking for vascular problems, possibly in the carotid artery or in the heart. and or blood coagulation factors.

So there's a whole workup for transient monocular blindness. And that differential, as I said, is quite long of what can cause it. And retinal migraine is at the very bottom, meaning everything else has been ruled out and there's no other cause whatsoever.

And it's very rare. I have, I just don't see retinal migraine in my practice. And yet I see a lot of people with transient monocular blindness, but it's usually due to some kind of vasculopathy or vascular disorder.

Versus if someone has the visual aura, the binocular visual disturbance, do they need a workup? So if you just have an aura followed by a headache, migraine aura followed by a headache, most of the time you do not need to have a big workup.

However, if the auras are really frequent or if they're persistent longer than an hour, or if they're unusual, then a lot of times people will have to do a big workout.

Yes. Imaging and blood studies and things like that. Yeah.

Migraine Management and Treatment Options

One screening test I use in my practice, if somebody comes in with a visual aura, is I do a confrontational field, asking them to count how many fingers do they see in each quadrant.

As long as that's okay, sometimes I'll do a proper visual field, like a formal visual field. As long as they're okay, then I tend not to work up visual aura on its own.

But I don't know if Dr. DeGray, if you have any thoughts about that. No, I think that's a standard practice and provided that the neurologic examination is also normal and that there aren't any red flags.

Red flags like people having under systemic diseases or malignancy or they're pregnant, then I check up blood pressure immediately and those kinds of things.

So you have to, that's why a provider is such a good person to see, because they can think about all these other things that could potentially look like an aura, but they mean it's an aura related to an underlying problem in the brain.

Absolutely. Yeah. Thank you for that, for sharing that. So let's shift gears a little bit, Dr. de Grey. We've been talking about symptoms and the complexity of migraine.

What are some practical strategies that you often talk to your patients about and how to manage some of these issues that they're having related to migraine?

First, I feel like understanding that I've got a sensitive brain is really important because then it says, all right, I'm not going to get worked up if I have a little sparkle here or a sparkle there to my sensitive brain.

So it's like reassurance, all right? And then I really go into how do we prevent migraine from occurring? And prevention is not just medication. Prevention is lifestyle.

Remember Ferrari brain? You have to take care of your brain when you have migraine, and that means you have

to sleep well every night. If you don't sleep, migraine is not to occur.

You have to eat well. Some people can't fast. You have to stay hydrated. And you have some techniques for stress reduction because stress doesn't cause migraine, but it can make it worse.

So you do have to have some stress reduction techniques and then things that just downtime for the brain. People with migraine kind of need downtime. They probably should be out taking a walk in the woods.

at least once a week or maybe every day. If you can, if you live in New York City, you could go to Central Park every day and take a walk and let your brain enjoy what I try to do.

Yes, that's exactly what I try to do. Yeah, I know lifestyle things that are extremely important. Yeah. Also, I think you touched upon this earlier, Dr.

DeGray, to take care of your Ferrari brain. I always tell my patients, if you have migraine, your brain loves regularity. So try to keep patterns with your lifestyle.

So eat your meals at the same time every day. Don't skip meals. Please don't try fasting because your brain is not going to like that. Try to sleep regularly.

So go to bed at the same time every night. Wake up at the same time every morning. No matter if it's a weekday or weekend, even if you're on holiday, try to maintain that regular schedule to really give your brain that expectation of what's coming next rather than sudden stimuli that may trigger a migraine.

I found that really helpful to control my own symptoms as well as getting that regularity in place. Absolutely. Great advice. So Dr. Diggory, our time together is coming to a close.

I'm sad because I'm learning so much from you. You're such a wealth of information. But I wanted to ask you, is there any common myth or misconception about migraine and vision that you oftentimes hear that you'd like to dispel?

I think one of the myths that I would like to dispel is that there's no hope or there's treatment. We have more treatments now than we've ever had before to prevent migraine, to treat it when people have it.

This is absolutely the biggest myth to say that there's nothing to do. There are things to do. Besides lifestyle, there are preventive strategies that involve medications.

nutraceuticals and even devices. So you don't want to take medication at all. There are devices out now for migraine. So there's so much to do to prevent the migraine and also treat acute attack that that myth I would like to disparate now.

Yes. Thank you for saying that because I know some people, there are people out there who've been suffering with migraine for a very long time, years, even decades, and they feel like There's nothing left that will help them, but there are always options.

There's also new treatments in the pipeline, new pharmaceuticals that will get approved probably in the next few years. So there's always something for everyone.

There's always something you can continue trying. Absolutely. So thank you for that. And then I do wanna for the people who do have that there is a tinted lens that was discovered or brought up in the eighties by Dr.

Good in England, FL 41 lenses. And these block a certain wavelength of light. And for some people with migraine, it really helps their light sensitivity, but also even prevents migraine.

And in his little study that he did, actually in an orphanage where he put kids in various glasses, he found that it

could reduce the number of migraines that people had.

And it's not expensive and it's really easy to do. So I highly encourage people who do have that light sensitivity component to use that strategy. It doesn't work for everybody, but nothing works for everybody.

And there's a certain amount of trial and error involved in this. Yes. So thank you for sharing that. Again, that's an FL-41 tinted lens. Correct, Dr.

DeGray? That's right. We truly appreciate all your insights and your amazing knowledge about this condition that so many people suffer from, but they don't necessarily have to be suffering, right?

There's options out there. So thank you for sharing those insights. And thank you for having me. Thank you for tuning into Dr. Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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