

Carlecast #5 – Macular Degeneration

Hello and welcome back to this fifth Carlecast. Once again, I'm Dr. David Graham, your host and tour guide, if you will, through the various topics of medicine that we discuss. I'm really glad to have you back today for what ought to be a great, interesting topic.

Now, hopefully you've been keeping up on these shows as we've released them. If you need to go back and get some of the earlier shows you can always go to our website at www.carlecast.com and either stream the shows live or download them to listen at your leisure. You can also get them at the iTunes music store or any of the other common podcast registries.

Wow, our fifth show and it just seems like a week or two I started this. We've had a lot of interesting topics. We've got another one yet today.

You know, macular degeneration, our topic for the day, is a topic that is really scary for a lot of people and I can understand why. The whole notion of just gradually going blind - of slowly, inexorably losing your vision - has got to be one of the scariest things I can imagine to be going through and yet there are people going through this every day. Fortunately, there's a lot of good work going on in the field, a lot of interesting new treatments, research and advances in the area.

Today we have Dr. John Lowery, a board-certified ophthalmologist at the Carle Eye Department, to talk with us about the area of macular degeneration: how it starts, what to think about, what to look for and some of the new treatments that are ongoing.

So, lets get right to it with Dr. John Lowery.

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Dr. David Graham: We are here with Dr. John Lowery, a board-certified ophthalmologist at our Eye Department at the Carle Clinic and we're here today to talk about macular degeneration.

Dr. Lowery, thank you for your time today and helping us out with this.

Dr. John Lowery: Glad to be here.

Dr. David Graham: Certainly we're talking about a topic that scares a lot of people. What kind of person may be thinking that this could be a problem for them?

Dr. John Lowery: Well, macular degeneration is an age-related problem; it's generally seen in older patients. You never see it before age 50, but even so, it's not very common until after the age of 60 or 70. The average age for people to begin to notice visual problems due to macular degeneration is 74. And so it's primarily for older patients to be concerned with.

Dr. David Graham: Well, that's good to know for those of us who have a few years yet before we have to worry about these things. What kind of things would a person notice that would make them say, "This could be something like macular degeneration?"

Dr. John Lowery: Well, macular degeneration starts out with just mildly blurred vision. There are many other things that could cause a similar kind of symptom. It could be anything from a change in the glasses, to cataracts or possibly macular degeneration. So, patients noticing decreased vision should have an eye exam. But as macular degeneration gets worse, it can begin to cause things such as distorted vision. Straight lines may begin to look bowed or curved and you can have difficulty with small blind spots or difficulty seeing things that were clear before.

Again, there are other diseases that can cause these symptoms, but these are common symptoms for macular degeneration.

Dr. David Graham: So at the very least, if you start to notice some sort of change it really makes sense for you to go get your eyes checked.

Dr. John Lowery: Of course, because there are other things that could be the cause of these symptoms that are easily correctable, but it could also be macular degeneration - and sudden vision changes in

macular degeneration should be evaluated by an ophthalmologist for possible treatment.

Dr. David Graham: Are all macular degenerations the same or are there some different types?

Dr. John Lowery: There are two major types of macular degeneration. By far the most common type is called dry macular degeneration. Eighty-five percent of patients will have only dry macular degeneration. This usually is just associated with mild blurring of the vision and is not commonly associated with severe vision loss, but it is possible to get severe vision loss with this type.

The other type is called wet macular degeneration. This is only present in 15 percent of patients with macular degeneration, but this can often result in severe blindness if not treated. Usually, this is not total blindness, but it is blindness of the central vision. There is a big central blind spot that prevents you from seeing. And there are new treatments to help stop the progression of wet macular degeneration.

Dr. David Graham: We're going to talk about those new treatments in a minute or so, but if a person is coming to see you for macular degeneration, what kind of things would they expect to have happen during their appointment or during the work-up?

Dr. John Lowery: Well, we would do a complete eye exam. We would start by checking the vision and going over their medical history, but we would also look at the eyes, dilate the eyes and then look inside the eyes at the retina. The macula is the central part of the retina, which is the layer of the eye that interprets light - and we examine that after dilation.

Dr. David Graham: Are there any other more invasive types of work-ups or evaluations that might be done?

Dr. John Lowery: If we suspect macular degeneration, we may do scans of the eye, where we take pictures of the eye. If we suspect that there might be progression to a wet type of macular degeneration, we may do an angiogram.

This involves starting an IV and injecting a dye into the blood vessels. This dye flows through the blood vessels and we take pictures of the blood flow in the eye with a special camera and this can show us what type of macular degeneration or other problems may be causing your visual problems.

Dr. David Graham: That doesn't sound like it would be too painful or uncomfortable to go through.

Dr. John Lowery: No, we start an IV and after that, it's not too bad.

Dr. David Graham: We certainly do a lot worse things than that to people.

So once we know that this is going on, if it's dry or it's wet, are there some treatments that can make a difference?

Dr. John Lowery: For dry macular degeneration there are no set treatments. It tends to be an aging process, but as I said, dry macular usually does not progress to severe vision loss and there is no need for treatment much of the time.

For the wet type of macular degeneration, there are definitely treatments. Oftentimes we will recommend vitamin supplements to help prevent the progression to wet macular degeneration.

Dr. David Graham: So when you hear on the radio advertisements for various vitamin things for your eyes, is that mainly for the dry to keep it from becoming wet or does that actually help improve some of the other types?

Dr. John Lowery: It is mainly to prevent the progression to wet type of macular degeneration. These vitamins have been proven to be effective for that, but not for anything else. But in high-risk patients - patients that we believe have a risk of transforming into the wet type of macular degeneration - we have found that we can lower their risk by vitamin supplements, and there are many available over-the-counter.

Dr. David Graham: Are there easy things that patients would recognize themselves to say I'm one of those high-risk people?

Dr. John Lowery: Not really. The risk factors are identified on examination done by an ophthalmologist.

Dr. David Graham: Okay. So, if a person develops the wet type of macular degeneration, what options do they have?

Dr. John Lowery: Well, first of all it's essential to catch the wet type as early as possible. Any patients with macular degeneration who are experiencing a visual change should be evaluated as soon as possible. We like to do so within a few weeks. If these changes are present and it is the wet type of macular degeneration, we have many treatment options available.

The standard of care right now is something called photodynamic therapy. We inject a special kind of medication into the veins. This medicine collects in the damaged cells in the eye and the new blood vessels that begin to grow. Wet macular degeneration is caused by a growth of new blood vessels in the retina that can be damaging to the eye. This medicine will concentrate in those blood vessels and using a form of focused light we can help to eliminate the blood vessels and prevent the progression. This has been very effective in preserving vision and it is a great advancement over the previous types of lasers that were done in the past.

There are also new drugs available for injection. One is called Macugen. This is a medicine that is injected directly into the eye and this has also been proven to help stop the progression of wet macular degeneration and help to slow or eliminate the vision loss. They are also injecting steroids into the eye with each of these treatments and it's been shown to be effective as well.

Dr. David Graham: Now, in the cancer field where I work, certainly we recognize a lot of problems with growth of blood vessels causing troubles as well. We actually have some drugs available that slows the growth of blood vessels. Are any of those potentially something that are or might be looked at in treating this?

Dr. John Lowery: There is a drug that is just about to be FDA-approved and it's being used in trials widely and sometimes being given to expanded access even outside of trials. These drugs are the anti-angiogenesis drugs like we talk about in cancer drugs and are actually derived from those cancer chemotherapies. These will be soon be approved for injection into the eye to help stop the progression of macular degeneration. There are several new ones in trials right now that are showing great promise. And in the very near future, some of the newer drugs look like they may even be able to reverse some of the damage and improve vision. This has not been possible prior to these new treatments.

Dr. David Graham: So, in those 15 percent who are really running into the risk of the worst debilitating changes, we may have some really exciting new things for them?

Dr. John Lowery: Yes. These treatments are the best treatments ever seen for macular degeneration. They don't work for everybody and not everybody is able to have their vision loss stopped, but many are able to stop the vision loss, and with the newer treatments that are just being approved there may be a chance for actual visual improvement.

Dr. David Graham: So, if a person is sitting at home listening to this and they've heard from relatives or family members or friends who had this disease and nothing could be done for them, they really need to change how they're thinking, don't they?

Dr. John Lowery: That's right. If you do have wet macular degeneration, you need to be under the care of an ophthalmologist. Once it reaches a certain stage of damage and scarring, there is no treatment that can restore the nerves at this time and therefore the photoreceptor damage may be irreversible. But if you were currently undergoing treatment for macular degeneration, we are often moving that treatment into these newer options when the patient is a good candidate.

Dr. David Graham: That's fantastic. So, once again it sounds like something we harp on all the time in medicine, but the earlier this is seen and handled, the better.

Dr. John Lowery: Absolutely. And when we do have a patient with macular degeneration, we often give a grid with a series of lines and we tell them to check their vision periodically, at least once a week, and to do it in both eyes one at a time. If they begin to notice vision changes on this grid such as blind spots or changes in the lines so they appear distorted or curved, then they are instructed to call their ophthalmologist immediately and come in - because earlier treatments give much better results.

Dr. David Graham: It just sounds like you have a lot of fun ahead of you in treating this disease.

Dr. John Lowery: Right. It is exciting that they are coming out with so many new therapies that are offering better results that have never been seen before.

Dr. David Graham: That's great. Well, Dr. Lowery, I sure appreciate your time. Any other things you'd like to make sure the people know before we sign-off for the day?

Dr. John Lowery: Well, for macular degeneration I do feel that it's important if there is a strong family history that other members of the family should be evaluated to see if they might benefit from vitamin supplementation. But it does not always run in families. Even if you have a direct family member who has severe vision loss from macular degeneration, you should know that there is a less than 10 percent chance that you yourself will be affected. But you can reduce your risk if you go to an ophthalmologist and get evaluated to see if you would benefit.

Dr. David Graham: Would there be an age that would be too young to get checked?

Dr. John Lowery: We generally don't worry about macular degeneration until after age 50 and, as a matter of fact, it's fairly uncommon before age 60. But if you have a strong family history, I would recommend an eye exam by age 50.

Dr. David Graham: Well, great. Well, Dr. Lowery I sure thank you for your time this afternoon.

Dr. John Lowery: Thank you for inviting me.

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Well, once again I'd want to thank Dr. John Lowery of our Division of Ophthalmology for an excellent discussion on a scary, scary topic to me anyway. Like I said before, the whole thought of just losing my vision would be really difficult for me to go through, and to know that it's going on. Wow! I just don't know how some of these people can do it.

It was really great to hear some of the new things coming up and I really hope that these are things that will pan out significantly in the future.

So anyways, what else is going on in the area of medicine? You know in all of these shows I've tried to come up with a story that's not exactly nightly news material. It's not that ready-for-daytime mainstream-use, but they are interesting stories.

I wanted to find one today that went along, at least a little bit peripherally, with eyes - and I found something really interesting. This is a test using eyes actually to look for Alzheimer's disease. So what are we talking about?

Dr. Lee Goldstein, he's on the faculty at Harvard Medical Student and he's also a physician at Brigham and Women's hospital in Massachusetts. When he was doing a post-doc research project on Alzheimer's disease, they had rats that were bred to show the symptoms of Alzheimer's. He noticed that a couple of the rats' eyes were milky and clouded, sort of like they had cataracts, but these rats were way too young to have cataracts. So, he started looking at it closer and what he found is that plaques of a protein called amyloid, which we know show up in people who have Alzheimer's, were actually forming around the rim of the lens of the eyes in these rats. This was way before these plaques started showing up in the brain to make us think that Alzheimer's was there.

So, he started looking at things, and he made a realization that a lot of the research that's going on right now are drugs that try and slow the development and progression of these plaques before they cause trouble. There are actually more than 35 drugs being analyzed right now with that exact goal.

So, what he wondered is whether or not he could use this test of looking for amyloid plaques in the eyes of rats to maybe give us an earlier target of people who could go on to develop Alzheimer's, start these drugs earlier and maybe having a more profound effect.

Now, there are other tests that are being done to try and find Alzheimer's earlier. People are using modified PET scans. They are using protein detection methods. There is some promise in these tests, but these are really expensive tests to go through and they are pretty involved and they aren't something we can do to everybody walking down the street.

Now, Dr. Goldstein developed this test where he uses basically a low intensity laser that he shines in the back of the person's eye. He then is able to detect the presence of these amyloid plaques from how the light of the laser is scattered back through the eye and bounces off various things in the eye. He's very capable of detecting these plaques in pre-symptomatic Alzheimer's mice.

Can we use this in people? No, we can't. We have a lot of work to look at yet. We need to know how much amyloid may be present in someone who's never going to develop Alzheimer's disease and how much is enough to make you say, "Boy, I'm worried about this person, we better start something going on." But Dr. Goldstein has an interesting idea.

If he can do this very simple, very easy test, find a threshold of amyloid plaques in the eye to basically screen out a much smaller group of people, then we can bring in these more expensive and involved tests, like the PET scan, to find out if they are at very early risk for Alzheimer's disease. What happens if they happen to fall into that category? Well, then we can talk about bringing in these medicines that may slow the progression and development of the

disease down and really lower the problem of what is a significant scourge amongst the elderly.

Great promise. I really hope it works out. We will find out in the years to come.

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Well, that brings us to the end of the fifth Carlecast. I hope you enjoyed the interview with Dr. Lowery and learned something. I know I sure did. I picked up some bits of information that I will be using with my patients for a long time to come. The story about how we may be finding Alzheimer's earlier than ever before is something to keep an eye out, if you'll pardon the pun, in the years to come.

Anyway, once again, if you want to go back and listen to some of the earlier shows, if you haven't had a chance to, you can always go to our website at www.carlecast.com download all the preceding shows. Download transcripts of all the shows, so you can have a written copy to follow along or to keep on file somewhere.

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We hope you keep listening in the times to come. Certainly, if you have topics you'd like to hear about, we'd love to hear from you. On our webpage www.carlecast.com - boy I never get tired of plugging that - there's a link to send us email with topics for future stories, with suggestions, critiques, comments. We'd love to hear anything you'd have to tell us.

I do have to emphasize again that I cannot comment on specific case histories; there's something about practicing medicine without a license in various states that would get me into more trouble than I feel like dealing with. Other than that, I'd love to hear about anything you'd love to hear about.

So, until we get to our next show with lots of great topics to come, this is Dr. David Graham telling you once again to stay healthy.