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Time Is Vision: The Critical Role of Early Diagnosis and Referral in Neovascular AMD and RVO

Announcer:
Welcome to CME on ReachMD. This activity is part of a special series titled “Time is Vision in Neovascular Age-Related Macular Degeneration and Retinal Vein Occlusion” and is provided in partnership with the National Eye Institute of the National Institutes of Health, of the U.S. Department of Health and Human Services, along with Prova Education. It’s supported by an independent educational grant from Regeneron Pharmaceuticals. To view this activity or others in the series, please visit EyeHealthAcademy.org/TimeIsVision

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Dr. Dunbar:
Early diagnosis and early treatment of macular degeneration of retinal vascular disease can be critical to preserving a patient’s vision. Today, we’re discussing neovascular AMD and retinal vein occlusion, specifically, how can we diagnose and refer patients early in the disease process to ensure the best visual outcomes for our patients?

This is CME on ReachMD, and I’m Dr. Mark Dunbar. And joining me for today’s discussion is Dr. Diana Shechtman of Retina Macular Specialists of Miami, Florida. Welcome, Diana.

Dr. Shechtman:
Thank you, Mark, and it’s a pleasure to be here. In the United States, there’s 4 million Americans living with macular degeneration and retinal vein occlusions. We know that early diagnosis is critical in order to allow for prompt referral. Prompt referral does lead to early intervention, and early intervention does lead to better prognosis. Mark, what are your thoughts about early treatment in macular degeneration?

Dr. Dunbar:
Well, the reality, Diana, as you pointed out, early diagnosis is critical, especially for macular degeneration, and most people aren’t getting in in a timely manner. The data show us when you look at the IRIS Registry Data from the American Academy of Ophthalmology, the CATT data, which was one of the many eye studies comparing the various treatments for macular degeneration, most patients don’t come in until very late. In fact, almost a third of the patients or over a third of the patients had visual acuity that was worse than 20/40 at the time of diagnosis. And we know that, when we kind of look at the data further, if you start with worse visual acuity, you usually end up with worse visual acuity. Again, when you look at the CATT Data and some of the other studies, the patients come in with visual acuity that was 20/30 to 20/40, the reality is they’re more likely to maintain that level of visual acuity. And when they come in with visual acuity 20/80, 20/100, again, even with successful treatments, they end up with visual acuity in that range.

So again, I think it speaks to the idea that – I don’t know if we need to do a better job, but I think we recognize optometry is on the frontlines of macular degeneration, of retinal vascular disease. And if we can diagnose these patients earlier, if we can recognize some of the features of the disease, we can get them seen quicker. Obviously, with imaging technology and those type of things, if we can get these patients diagnosed earlier, recognize, for example, in macular degeneration when they’re in that intermediate stage, follow them not just on an annual basis but maybe twice a year or three times a year, if we can kind of catch these patients earlier, get them in to the retinal specialists, we know that visual outcomes are much better. We start with good vision; they usually end up or maintain a good level of visual acuity.

And I think, Diana, from an OD perspective, you know, when I see a patient with AMD, what level of AMD is it? And I kind of rely or use that Beckman Classification, and for me that kind of critical area is intermediate AMD. So the idea that if they've got any retinal pigment epithelial modeling – certainly we recognize drusen as a marker for AMD, but if they've got a drusen that's at least the size of 125 microns – and I know we speak, well what is that, you know, relative to anything else – 125 microns is about the size of one of the branches of one of the central retinal veins. So if they have drusen that's that big, categorically, that puts that patient at an intermediate level of macular degeneration. And again, we know once they have intermediate, their risk of going on to develop choroidal neovascularization within the next 5 years really increases considerably up to over 50%. So that's why that intermediate-level patient, you really have to rely on imaging. Those are the patients we recommend nutritional supplements. But again, these are the patients that we need to see at least twice a year, and again, given the amount of drusen that they have, we may need to see those patients even more. And so, again, using imaging technologies, making sure we have a good clinical exam. If there's any threat that they're going on to develop, you know, subretinal fluid, subretinal hemorrhage, exudate, those types of things, we know that they've converted from the dry form of the disease to the wet form of the disease.

So, Diana, what is your kind of approach to managing these patients with macular degeneration? Do you kind of look at that intermediate case, as well?

Dr. Shechtman:
Oh, exactly what you stated. I couldn't have said it better myself. I think the intermediate is probably the most critical stage, primarily because of the chances of progression. But alluding to the fact of some of the other aspects that we're talking about today, such as a vein occlusion – and you had mentioned it when you were talking about the intermediate stage and the 125 microns – some of the same concepts apply to retinal vein occlusion. I think one of the major issues with retinal vein occlusion is the fact that many of these patients are completely asymptomatic. Until they develop macular edema and substantial amount of macular edema, these patients don't even know they have a disease. So I think identifying risk factors, the patients with hypertension – maybe even patients with glaucoma – should be seen earlier to identify any findings in association with vein occlusions. These findings may include such imaging perspectives of OCT, photos, ultra-wide visual field, but some of the things we look for is hemorrhages across one branch or throughout, cotton wool spots, exudates, macular edema, neovascularization.

There are 3 types of vein occlusions. These are all associated with the location. We have a CRVO, central retinal vein occlusion, a branch retinal vein occlusion [BRVO], and the hybrid, which is a hemi-retinal vein occlusion [HRVO]. Further classification, I think it's critical. Much like in the progression of AMD towards wet, is the level of ischemia, so identifying how much ischemia is there is incredibly important. And that really is best seen with ultra-wide FAs. This is why if you don't have the capacity to do that, that should be referred to someone who can be able to evaluate the amount of ischemia. About 1/3 of patients who are non-ischemic will convert to the ischemic, and the ischemic are the ones who have the worse prognosis.

Macular edema needs to be evaluated further because that does need treatment at hand, and just like you said, early treatment leads to better outcomes. You know, a lot of these patients are completely asymptomatic or only have 20/25 decrease in visual acuity, so the quicker we intervene, the better it is. CRUISE and BRAVO study have established the impact of anti-VEGF for these patients.

Any other further thoughts, Mark, with regards to either wet AMD or CRVO?

Dr. Dunbar:
Yeah, you know, your comments about retinal vein occlusion, I think, is really pertinent, right? What I look at is, is there any macular edema? And sometimes, you know, you can see that very easily on a clinical exam, sometimes it does require OCT imaging. And so even those patients who don't have macular edema, you know, it's almost, depending on the severity of the BRVO, you know that there's a high risk, it's a good chance or probability, that even if they don't have it today, you know, in the next month or 6 weeks, they may have it. So again, I still may send that patient to a retinal specialist even though they don't have macular edema because I know the risk is pretty high.

For those just tuning in, this is CME on ReachMD, and I'm Dr. Mark Dunbar. And joining me today is Dr. Diana Shechtman. We are discussing how to improve early diagnosis and treatment referral in patients with AMD and RVO.

So, Diana, getting back to kind of that intermediate-level AMD, I have some images that I have shown that really, I think, are pretty representative. And so there's really 3 images. The first one on the left really shows the prototypical – they've got these coalesced large drusen; there's RPE modeling. And again, those are the ones, no question that's an intermediate-level AMD. But again, you look. Even though they don't have wet AMD today, based on imaging and perhaps acuity, you know that their risk of going on to develop wet AMD over the next year to 5 years is really pretty high. The middle one, again, maybe a little more subtle, but they've got the larger drusen that certainly fits that category, and again, that's an intermediate-level AMD. That's a patient who we know has a greater risk of going on to convert from dry to wet, and that's a patient you've got to see more than once a year, maybe 2 to 3 times a

year. And then there's a third one that's much more subtle, and those are the ones that clearly has macular degeneration. And that one kind of waffles between, you know, those drusen don't look so large, but they're, you know, maybe because of the quantity, and some of them are borderline. And that's, again, a patient that may be still intermediate, may be a little bit of a lower risk, maybe instead of 2 or maybe 3 times a year, maybe I see that patient twice a year.

But again, Diana, how do you kind of strategize when you're looking at these kind of intermediate-level AMD patients?

Dr. Shechtman:
I agree with you 100%, Mark. Actually, what's really interesting is, and I'm sure you can agree to this, is a lot of times when I do an OCT on these patients, there's a lot more drusen than I actually thought there were. And sometimes you see these drusenoid PEDs [pigment epithelial detachments] and maybe even some subtle fluid that you can't quite identify here. Especially on the first case, which is your intermediate with pigmentary changes and large drusen, which may have some drusenoid pigment epithelial detachments, and maybe a very, very subtle area of fluid, and it's really hard to tell within that area. And on the other side of the spectrum where you have very subtle changes, you know, someone could potentially miss them, especially now with the fogging of the lenses, you know, things are a little bit harder to see. So imaging here is critical, I think, and really important to identify the staging and therefore intervene earlier on, as you mentioned.

So now, if we wanted to get back to some of the same perspectives with regard to vein occlusions, I actually have a couple of pictures that will show some of the variations of vein occlusions, and they may look very different based on the location; we talked about some of the branch retinal vein occlusions versus a central retinal vein occlusion. Sometimes, you may have some subtle hemorrhages, maybe somewhat more distributed out in the mid-periphery rather than the central, such as the middle slide here. The first slide shows a lot of hemorrhages centralizing within the macula, and that's a patient that would actually have decreased visual acuity much quicker. Some of the much earlier changes may only show tortuous dilated veins in a unilateral presentation. And on the bottom right, you actually see some of the more typical central retinal vein occlusion cases where you have hemorrhages in 4 quadrants, cotton wool spots, and these dilated tortuous veins.

I want to bring about an interesting case that I had to really show and hone in some of the major points that we talked about. This was a patient who had already some of the risk factors, which includes hypertension. You can clearly see here the branch retinal vein occlusion along 1 quadrant with numerous hemorrhages, a dilated branch of a vein, as well as tortuosity and some cotton wool spots. But one may not perceive the extensive amount of macular edema you can clearly see in the OCT. This patient does need intervention, and the quicker we intervene, the better the prognosis.

The second slide here does show the fluorescein angiography and the ultra-wide visual fluorescein angiography does give you a better understanding of the dropout of capillary nonperfusion. I think if the diagnostic modalities are critical to be able to evaluate further, not only the complications, but all the findings on this patient and the need to intervene. As we mentioned before, about 1/3 of the non-ischemic cases will convert to ischemia, which is more likely to develop neovascularization, whether it be in a posterior pole, more common for your branch retinal vein occlusions, or in the anterior segment, maybe even leading to neovascular glaucoma, more common in your central retinal vein occlusion patients. Anti-VEGF is not only incredibly effective for the treatment of macular edema as well as neovascularization, but it may actually have an impact on perfusion, hoping to even give patients a better prognosis.

Dr. Dunbar:
For your patient here, Diana, you know, if I'm seeing this in my private practice out in the community, how soon does that patient need to get in to the retinal specialist for evaluation and treatment?

Dr. Shechtman:
That's a great question, and I think that really sets a difference between seeing a patient with wet AMD and seeing a patient with a vein occlusion and macular edema. I think within a few weeks, this patient will do very well, 1 to 2 weeks. But I think that's quite different when you see wet AMD or suspect wet AMD in a patient with macular degeneration.

What are your take-home messages, Mark?

Dr. Dunbar:
Well, as we've talked about today, Diana, it's really important for early diagnosis, especially with macular degeneration, to recognize, in particular, when that intermediate patient is – so drusen of a certain size, 125 microns, is there any RPE modeling? And we know categorically that puts that patient, again, not only at that intermediate-level AMD, but we know the risk of conversion to the wet form of the disease increases significantly. So again, recognition, early diagnosis, getting those patients in to see a retinal specialist as soon as you suspect that they may have converted from the dry form to the wet form. And again, it just underscores the importance of utilizing imaging like OCT.

Dr. Shechtman:
You took my take-home messages; they were so well stated. But I do think that earlier diagnosis, recognizing some of the disease findings, I think, are critical. Using the right diagnostic modalities – if you don't have an OCT, if you question there is a level of ischemia, if you question there is wet AMD, it is really important to be able to send the patient earlier in order to identify, and again, the early intervention in the care with the whole entire team is really important.

I also want to give the audience a little bit of information that if they want more information on macular degeneration or retinal vein occlusions, to please log in to EyeHealthAcademy.org/TimeIsVision. And again, it is critical that the earlier intervention, the better the prognosis for these patients.

Dr. Dunbar:
And so, with that, Diana, unfortunately, I think that's all the time we have today. I'd like to thank our audience for listening in and thank you, Diana, for your valuable insights during today's discussion on early diagnosis and timely referral of AMD and RVO. It was great having you here.

Dr. Shechtman:
Thank you, Mark. And I really enjoyed it. It is always an honor and a pleasure to work with you and to be part of this wonderful project. Thank you for having me.

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