Managing Severe Diabetic Retinopathy, Part 2: From PRP to Obesity

In this second of a two-part series, Lisa S. Schocket, MD, at the University of Maryland in Baltimore, hosts a conversation about trends, practice, and patient-related factors that can play into the management of patients with severe diabetic retinopathy. Her panelists are Maria H. Berrocal, MD, from San Juan, Puerto Rico; Sharon D. Solomon, MD, at the Wilmer Eye Institute; and John T. Thompson, MD, at Retina Specialists in Baltimore. (This discussion has been edited for length and clarity.)

Continuing Role for PRP

**Dr. Schocket:** Protocol S from the DRCR network found that panretinal photocoagulation (PRP) and anti-VEGF injections both can prevent severe proliferative disease, but we also know that PRP takes so much longer than injections. My perspective is that less PRP is being done, and, in the population that I serve, this can cause problems. Do you think physicians are doing less PRP now, and do you think this is resulting in more tractional retinal detachments (TRDs)?

**Dr. Berrocal:** I definitely think so. When we look at the result of these studies, we need to keep in mind that patients in a study come in for all their appointments. But this is not the reality that I see—and I think that many of us see—in our clinics. So, when a patient who has proliferative diabetic retinopathy (DR) comes in, I think it’s important to perform PRP on them because it stabilizes these eyes long term. It’s not like an injection, which has short-lived effects. With anti-VEGF therapy, patients may not be able to come in for follow-up treatment, especially if they have no insurance, poor insurance, or need preauthorization.

Surgeons must think about this. Often, patients whose diabetes is well controlled are more affluent, have good insurance, and tend to not get the severe DR changes. I think you have to adjust treatment to your population, and PRP really gives long-term stability. I don’t have a single patient with proliferative DR that I treat solely with anti-VEGF.

**Dr. Solomon:** I’m also a strong believer in performing PRP because of the lasting effect. However, perhaps because of the patient population I see at Wilmer, I’m encountering fewer advanced cases of proliferative DR and fewer TRDs, and even some regression in peripheral retinopathy these days with increased use of anti-VEGF. A lot of patients are coming in with diabetic macular edema and they happen to have peripheral disease as well. I agree though that, in an eye without diabetic macular edema but that has preproliferative or proliferative disease, I use PRP as opposed to monthly anti-VEGF.

**Dr. Thompson:** I think that Protocol S was important from the scientific perspective but is not necessarily the best approach from a practical perspective. The study answered an important question on the equivalence of these two treatments, but the reality is that patients with diabetes often have multiple medical problems. They may get sick and end up hospitalized. Or they have their leg amputated and can’t come back to the ophthalmologist for a while. So I think it’s a disservice to the patient to try to treat them with anti-VEGFs alone because, sooner or later, that patient with proliferative DR is going to miss some appointments; and when they miss a couple of months of treatment, bad things can happen.

The patient can come in with neovascular glaucoma from rubeosis. They can end up getting peripheral traction—essentially a delayed-onset crunch syndrome. And so, I agree that we should be doing PRP. Of course, if patients have macular edema, they could...
should also be receiving anti-VEGF injections, but I think you really have to get that PRP in.

I believe that many of the more recently trained ophthalmologists (though not so much the retina specialists) may not be really comfortable doing PRP, and they may favor doing anti-VEGF injections because of the greater difficulty of doing a PRP. You have to be either very comfortable with a contact lens or good with an indirect laser delivery system—and I think that’s a skill set that can take years to develop.

And so, I believe that’s why we’re seeing patients with less-complete PRP. Also, for patients being treated with the pattern-scan laser, it actually takes more spots. A complete PRP performed with the standard laser is about 1,800 spots if you make every spot count, but you need more with the pattern laser. PRP is perhaps becoming something of a lost art, but it’s one that we cannot afford to lose because of the stability it confers.

Dr. Schocket: I agree completely. PRP is also much more time-consuming than an anti-VEGF injection because the techs can prep the injection, and the physician can be in there for two minutes, but you can’t do a complete PRP in two minutes.

Dr. Solomon: Yes, if PRP is falling to the wayside, I think that the rate-limiting factor is the time it takes to complete PRP in a busy clinic, where some doctors are seeing upward of 50 patients a day.

Reimbursement and Referral Patterns

Dr. Schocket: Have changes in surgical reimbursements affected referral patterns to tertiary centers for complex diabetic tractional retinal detachments? And have these changes affected surgical recommendations? More specifically, I’m thinking about how much time it takes to do a vitrectomy for a tractional retinal detachment compared with seeing perhaps 10 or more patients in the clinic.

Dr. Thompson: A problem in the United States is that, in general, procedures have been pushed down in terms of value. Everything is based on time. The E/M visits tend to pay somewhat better because they got a pay bump a couple of years ago, while the surgical reimbursements have gone down pretty dramatically in ophthalmology. At a time when practices have also been dealing with record high inflation and rising practice costs, this could disincentivize retina specialists from spending time in the OR, and I see fewer retina specialists willing to do surgery.

I think what ultimately will happen is that there will be more retina specialists who practice medical retina only, and a smaller number of surgical retina specialists who will carry the bulk of the surgical care. However, that’s not necessarily a bad thing: it’s been well documented in many studies across cardiothoracic surgery, neurosurgery, and other specialties that high-volume centers tend to do better. Physicians who do a lot of surgery tend to be better at it. So although this isn’t necessarily bad for patient care, it’s very unfortunate in terms of how surgery, particularly vitreoretinal surgery, has been devalued over the past 15 years.

Dr. Schocket: I think it does put a burden on call coverage for academic centers when patients who are diabetic or have other conditions are coming from all directions into the academic centers for urgent surgeries.

Dr. Thompson: Although our practice is not an academic center, we’ve also been getting more referrals for tractional retinal detachments in the past two years than before. It’s unfortunate because sometimes patients have to travel long distances to get to the more specialized or academic medical centers, but it’s the reality we have to deal with, and we need to think ahead in terms of how to manage these shifts in referrals and how to give good patient care. Some centers are becoming sort of the receptacles for all of these emergencies—endophthalmitis, retinal detachments, and other urgent surgeries that used to be done more in the community.

Dr. Solomon: While there may be a downside for patients, in terms of travel and inconvenience to go to academic centers, one upside I can see is that it certainly enhances training opportunities for residents and for surgical fellows. Here, at Wilmer, because we have such a large retina faculty, my impression is that we’re able to absorb these extra cases and that there isn’t a negative perception about it at our academic center.

Role of Obesity in Diabetic Eye Disease

Dr. Schocket: Are there other important issues in managing diabetic eye disease that you’d like to bring to your colleagues’ attention?

Dr. Berrocal: I think it’s important to discuss the role of obesity, with its associated inflammatory cytokines, in diabetic eye disease—there are many other things involved besides VEGF, even in patients with macular edema. What I do is send a note to their endocrinologist to consider putting them on GLP-1 inhibitors. I’ve had patients whose macular edema went away as soon as they lost 80 pounds.

I’ve also found that many of my patients are really uninformed about their disease, so I recommend a diet for them based on the kinds of food people eat in my area. I give patients a list with two columns—yes and no—to show foods that have a low glycemic index and those that have a high glycemic index. For example, you shouldn’t eat plantains, but you can eat pumpkin—just basic things like that—and ask them to put it on their fridge as a guide. It’s an extra service I offer them, and I think it’s been very helpful. Many of these patients are not being treated for obesity. Gastric bypass and losing a lot of weight can lead to remission of diabetes. As health care providers, we should consider everything that affects the eyes.

Dr. Thompson: I think this is an excellent point—obesity is a crisis in America, and we need to change the mindset. In type 2 diabetes, people can modify their risk factors and may lose their diabetes entirely if they get to a normal body weight, as Dr. Berrocal mentioned. As a country we need to emphasize more healthy living, like exercising, maintaining a normal weight, and eating healthy foods, as opposed to a 32-ounce sugar-laden soda from the local store. We need to get a better
Dr. Solomon: I completely agree with all you’ve said. Interestingly, though, some of the tougher cases I’ve had were slender type 2 diabetes patients who have had outrageous HbA1c levels, such as 17%. I’m completely on the bandwagon with the importance of preventing obesity. Beyond that, I always ask my patients about their HbA1c at every visit so that they really understand how tightly correlated their HbA1c control is with progression and prevalence of their DR.

I’ll never forget when, as a fellow at Wilmer, I was explaining the importance of tight blood glucose control to a patient and she asked, “So you mean I shouldn’t put sugar on my Froot Loops?” I realized she didn’t understand what diabetes was—beyond not putting sugar on her food. It’s essential to continuously educate our patients about diabetes as a systemic disease and about the importance of controlling that systemic disease—and, of course, about the role of obesity as a separate factor that exacerbates the underlying diabetes, as well as other systemic risk factors such as hypertension.

Public Health Outreach in the Community

Dr. Thompson: I think the other gap in public health is making certain that people with diabetes get checked on a routine basis. There have been some outreach programs for putting fundus cameras in primary care offices. These are good initiatives, and we need to advocate to get more cameras to primary care providers and, ultimately, we need to have artificial intelligence assess the photos to identify which patients should be evaluated because by the time a diabetic patient loses vision it’s almost too late. There’s an urgent need to reach these patients before they lose vision.

Dr. Schocket: That’s an area where we all need to work hard together to bring about change. I see this every day—really young patients, say 25 or 30, who have already lost vision and ask me if I can bring it back. And I’m always thinking, “Wow, if we could have just seen you six months ago, we could have prevented this, even if your A1c was 15.” We have to work hard to get deeper into our cities to reach patients through community health centers and churches. Many people aren’t even going to primary care doctors. I hope we can all work together to make changes in our community to meet this need.