

Transcript Details

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Comprehensive Management of Pediatric Port-Wine Capillary Malformations

Announcer:

This is *On the Frontlines of Pediatric Skin Health* on ReachMD. And now, here's your host, Dr. Alexandria May.

Dr. May:

Welcome to *On the Frontlines of Pediatric Skin Health* on ReachMD. I'm Dr. Alexandria May, and joining me to talk about the treatment and long-term management of pediatric port-wine capillary malformations is Dr. Kristen Kelly. Dr. Kelly is a Professor and the Chair of the Department of Dermatology at UC Irvine School of Medicine.

Dr. Kelly, thanks so much for being here today.

Dr. Kelly:

Thank you very much. I'm very happy to be here.

Dr. May:

So let's start with an overview, Dr. Kelly. How has the approach to treating port-wine capillary malformations evolved over the last several years?

Dr. Kelly:

I appreciate that question. I will say, we have learned more things, but it probably hasn't changed hugely. Now, 50 years ago, we didn't have the lasers that we have now, and so sometimes people would do things like cut out a port-wine capillary malformation. It pains me to even say that now. Or they would try radiation or something like that. Definitely no one should be doing those kind of things anymore.

So laser really is the standard of care for port-wine capillary malformations. But I will say, laser has probably not changed as much as we would like over time. Initially, there was the argon laser, and that was one of the first lasers. And that was not very selective for the vessels that we have in port-wine capillary malformations, so that caused some scarring. But then, once we got the pulsed dye laser, there have been some changes—but probably not as many as we would like.

The pulsed dye lasers have gotten better over time. There's even a newest version that just came out in the last year that gives the energy a little bit more evenly, and it has the opportunity for post-cooling, which may make it a little bit more comfortable. So there have been changes, but still, standard of care is the pulsed dye laser.

I do want to say that pulsed dye laser, although it is the standard of care, is not the laser that we use to treat port-wine capillary malformations now. Long-pulse 532 nanometer can be used, as well as intense pulsed light.

Dr. May:

Let's zero in on pulsed dye laser therapy for a moment. Can you tell us a bit more about how it works and what's important to know about it?

Dr. Kelly:

Yes. So the pulsed dye laser, the 595 nanometer wavelength light, is absorbed by the hemoglobin in the vessels. The heat that is absorbed then radiates out and affects the wall of the vessel. And depending on how the energy is delivered, it either ruptures the vessel, which then causes purpura or bruising, or it causes enough damage for coagulation to occur, so the blood flow stops through the vessel, and then that vessel will eventually be resorbed.

So that's how the pulsed dye laser is working, but the light has to get to that vessel, and so it has to pass through the melanin in the

surface of the skin—in the epidermis or the dermal epidermal junction. And so, in order to protect that surface, we use cooling, often cryogen spray cooling, which was developed at UC Irvine. But there can also be contact cooling to protect the surface of the skin so it's not damaged, as the light then is able to reach the vessels and cause selective injury to the vessels.

Dr. May:

Building on that, how do you counsel families about what to expect from laser therapy, including the potential benefits and limitations of treatment?

Dr. Kelly:

I think that's a very important point. You can imagine that patients often are very concerned, or their families are very concerned—both patients and their families. And so it's really good to provide good information in the initial consult and prior to the patient getting the treatment. I try to give them as much information as I can, and I also try to be available to give them information throughout the course of treatment, which is generally quite a few treatments and probably over many years, at least for the maintenance treatments that patients will have.

I talk about what the potential discomfort is. The good news is, it does kind of feel like a snap of a rubber band. Sometimes we're having to do hundreds of pulses. But most, including even very small children, are generally fine afterwards. It's kind of a sunburn sensation. I won't say that there is no discomfort, but generally, people do pretty well. Sometimes there's some bruising afterwards—often there's bruising afterwards—so we discuss about that, but that always goes away. Then there's the small chance of a blister or scab, so I go over that. I talk about the things that we're going to do to try to minimize that and then tell them what we could do if we get that.

And generally, again, those things can be avoided. And then the wound care is generally pretty simple. I think it's important—and I touched on this—for them to have options for pain management to consider, because there are options we can do. Sometimes we use a topical medication. Sometimes we can inject an area. After three years of age, we can consider general anesthesia. I will say, I have very few patients—I literally have one patient now—who get general anesthesia for some particular reasons, but in general, we are using that a lot less.

Dr. May:

For those just joining us, this is *On the Frontlines of Pediatric Skin Health* on ReachMD. I'm Dr. Alexandria May, and I'm speaking with Dr. Kristen Kelly about treating port-wine capillary malformations.

So, Dr. Kelly, beyond laser therapy, are there any emerging approaches or areas of investigations that clinicians should be paying attention to?

Dr. Kelly:

Well, there is photodynamic therapy, which is also a light-based therapy, and that is used pretty exclusively in China right now, although there is a study that our center as well as a number across the United States are involved in with the possibility that eventually this treatment could be available in the United States. It involves giving an intravenous photosensitizer, so different from the topical photosensitizer that many dermatologists might be familiar with. And because it's given intravenously, it means that the whole body will become photosensitive. Then, pretty immediately—and in fact, sometimes before the infusion is finished—we shine the light on an area that we want to have an effect on, and that is how the treatment occurs.

It is reactive oxygen species that are formed when the light and the photosensitizer are in the same location. Something to keep in mind is that, because we do give a systemic photosensitizer, those patients are sensitive to light for at least a couple days, but general, often around two weeks, and so they really have to stay inside. So it's a more difficult treatment for people to be able to do, especially if they're going to have to do it multiple times.

Dr. May:

Now, in addition to the procedural aspects of care, these lesions can also affect children socially and emotionally over time. Knowing that, how do psychosocial considerations factor into long-term management discussions for children with visible vascular birthmarks?

Dr. Kelly:

I also think this is a very important question. Every person is different, of course, and so really working with the family and the patient to try to find what they need is helpful. There are times that involving a mental health professional can be useful. But there are also times where simply finding a supportive group in the school, et cetera, can be helpful. I've had a number of patients who took a book to school about it. I have a couple patients who made a slideshow about what getting treatments were like, so that they could share it with some of their friends. And then that way, if they show up one day and they have some bruising or something, then people know what it is.

I think this is true for anyone, but perhaps especially for children: if they're not afraid of something because it's different, that might help

a little bit. Certainly, we wouldn't want a situation where someone doesn't want to touch someone, et cetera, because they just don't understand what it is. And so I think sometimes sharing the information is helpful. But I will also say that's not right for everyone. Not everyone feels comfortable sharing that information. So I think helping the individual find what is right for them and makes them more comfortable is good. For some patients, as they get a little bit older, makeup, et cetera, as coverup is good for them, and that makes it easier for them.

I have to say, one of the greatest joys that I have found is sometimes seeing someone becoming much more comfortable and social, as we're able to improve their port-wine capillary malformation. I mean, it's only from the standpoint that I want to help bring joy to people's lives, and if they are able to make those interactions and be happier, then it's very satisfying to hopefully have a small role there.

Dr. May:

Yeah, that's amazing. Before we come to the end of our program, Dr. Kelly, do you have any final thoughts you'd like to share with our audience?

Dr. Kelly:

Just a couple quick ones. I think we all have been in situations where you see someone, and they look a little bit different. And I think mostly, as physicians, we're aware of that and are understanding. But I am often sadly surprised about the things that people say to people with birthmarks: something like, "Did you hit your child?" Or, "What happened to you?" Or, "How do you live with that?" I suspect that the audience that we're talking to here wouldn't make those kind of comments, but just helping us to be aware that this is what these patients often have to deal with, and helping them in any way, I think, is very important.

And then the other thing is, I think there's a lot of hope for the future. I really think that our laser treatments are good, especially as we treat patients early. So I would encourage anyone who does the treatments to try to do them early, or, if you don't feel comfortable, to make sure that a patient gets to someone who can treat them early. We can treat at one day of age, so no one should be told that they can't be treated till later. And then I think there's a lot of opportunity for the future, where we're going to perhaps have medications and things that'll be even better for patients. And I look forward to being able to participate in those new opportunities.

Dr. May:

Yeah, lots to look forward to it seems. With those takeaways in mind, I want to thank my guest, Dr. Kristen Kelly, for joining me to discuss therapeutic options for patients with port-wine capillary malformations. Dr. Kelly, it was great having you on the program.

Dr. Kelly:

Thank you very much. I greatly appreciate it.

Announcer:

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