

## **Diagnosing Basal Cell Carcinoma—What's Next?**

Vishal Patel, MD, FAAD, and Anthony Rossi, MD, FAAD

Interviewed by Brad Glick, DO, MPH, FAAD

**BRAD GLICK, DO, MPH, FAAD:** Welcome to *Dialogues in Dermatology*, live at the Academy, Boston, Massachusetts, March 27, 2022. I am Dr. Brad Glick and I am your host. Our topic today is Diagnosing Basal Cell Carcinoma—What's Next? Emerging Data on Advanced Diagnostics. Joining me today are two thought leaders in dermatologic surgery who will be leading the discussion.—

--First is Dr. Vishal Patel. Dr. Patel is an Assistant Professor of Dermatology and Oncology at the George Washington University School of Medicine and Health Sciences. He serves as the Director of Cutaneous Oncology at the G.W. Cancer Center and the Director of Dermatologic Surgery at the G.W. department of dermatology. He is an expert in cutaneous oncology and his research interests focus on the medical and surgical management of high risk cutaneous squamous cell carcinoma, the role of artificial intelligence in skin cancer care, and prevention of skin cancers with immunotherapy. Vishal, welcome.

**VISHAL PATEL, MD, FAAD:** Thank you.

**BRAD GLICK, DO, MPH, FAAD:** And joining us today also is Dr. Anthony Rossi. Dr. Rossi is a board certified dermatologist with fellowship training in Mohs micrographic surgery, cosmetic and laser surgery, and advanced cutaneous oncology at the Memorial Sloan Kettering Cancer Center and Weill Cornell Medical College program. Dr. Rossi specializes in skin cancer surgery, cosmetic dermatologic surgery, and laser surgery. His research includes noninvasive imaging of the skin and nonsurgical treatments of skin cancer, genital skin cancers such as penile SCC, and extramammary Paget's disease, as well as cosmetic procedures in cancer survivors.—

--He has published multiple book chapters and reviews on surgical dermatology, skin cancer, and cosmetic dermatology. He serves on the board of the ASDS, as well as the editorial board of the *JAAD*, *Dermatologic Surgery*, and *Lasers in Surgery and Medicine*. Dr. Rossi is active in advocacy for dermatology and has worked internationally in sub-Saharan Africa. Anthony, welcome to you, as well, and thank you both for being here.—

--I'd like to jump right in and start the discussion of diagnostic modalities for basal cell carcinoma. What noninvasive modalities are available to diagnose BCC? And how do we as dermatologists put these tools to good use? Anthony, I'll start with you.

**ANTHONY ROSSI, MD, FAAD:** Thanks for having us. And this is a great topic, basal cells are the most common type of skin cancer. And I think dermatologists do a wonderful job of diagnosing them just outright clinically, with our visual inspection. You sort of know it when you see it. They have those classic features, pearly border. But there are areas on the body or just maybe very subtle lesions that would lend itself to noninvasive imaging or some diagnostic help. So, of course, there's dermoscopy that people are using now very readily, we're teaching our residents dermoscopy.—

--And I think using dermoscopy actually helps augment the physical exam for us. It's like our stethoscope, where we can see things that we may not be able to see just outright. And, of course, seeing that vascular pattern under dermoscopy is super helpful to diagnose not only basal cells but also the subtype of basal cells. And I think that's where noninvasive imaging is helping even more. So my area of interest is confocal microscopy. And we really utilize that not only to diagnose the basal cell, but also to diagnose the subtype of it.—

--And then try to triage that in terms of treatment, whether it will be surgery or nonsurgical treatment options.

**BRAD GLICK, DO, MPH, FAAD:** When I think of what we do on a day-to-day basis, CPC, clinical pathologic correlation, but now it is clinical dermatoscopic, perhaps even confocal, histopathologic. It's a broad spectrum of how we can really assess patients with these tumors. Vishal, what about you, what do you want to comment on?

**VISHAL PATEL, MD, FAAD:** I think Anthony has laid that out very nicely. And my thought process on how technology has evolved and the future for this is one where we should be the driver of the technology and really at the forefront for implementing that within our practice. As Anthony laid out, dermoscopy now has become very popular. About 10, 15 years ago we were just really starting to understand how to utilize it. There were only very few clinicians that really used it at a high rate and then taught a lot of us how to utilize that.—

--And now, Anthony is leading the charge on confocal microscopy, which is improving our care for patients when they come in for surgery. We're entering I think a new world as healthcare evolves, where we may be empirically treating lesions with nonsurgical therapy, topical immunotherapies, but we need to be accurate in our risk stratification of tumors, so we know maybe if we're sticking a biopsy and just empirically treating, these noninvasive modalities really helps us hone in on which tumors are appropriate to do that for and then which ones are not, so that we can then biopsy and get them into Mohs surgery or excisional surgery or destructive therapy from the get-go in a much more efficient way.—

--So that's how my treatment paradigm has evolved, so that I like to use these noninvasive modalities, so I can figure out if the older patient who has had so many skin cancers might just be able to skip and do a nonsurgical therapy from the get-go with high levels of confidence or not. And we really need to just explain to them why we want to do surgery for this one.

**BRAD GLICK, DO, MPH, FAAD:** Before we move on, I think just as you said, about 10, 15 years ago a small percentage of dermatologists were using dermoscopy. And now, as Dr. Rossi

said, it's become our stethoscope, like our colleagues in other areas of medicine, in our big house of medicine. I don't think our colleagues understand very well the detail of confocal. And perhaps, Anthony, before we move on, just say a little bit about confocal and kind of what it is, and where we will be able to integrate it moving forward in taking care of our patients?

**ANTHONY ROSSI, MD, FAAD:** I think that's a great point, in that confocal is not a standalone item. So we never use it in a vacuum. We always level it, like Vishal said, we have our visual exam, we use dermoscopic exam, and if things are still equivocal, if we're still sort of hemming and hawing about the diagnosis, is this melanocytic, is this non-melanocytic, we can then layer another imaging modality onto it, like confocal. There's also OCT that's also utilized. But confocal is just subcellular resolution below the skin, so we can actually see individual cells.—

--We can look at the morphology. We can look at vascular patterns. Once you see it and once you learn more about it, diagnosing a basal cell is very gratifying and rewarding, because you see those tumor islands. You see clefting actually in vivo. It's really fascinating. It's all in black and white, so you're interpreting images but there's now this new potential digital staining, so we're trying to mimic H&E in real time.—

--So things are very exciting. The technology is very useful. And I find it super useful for melanomas of the face. So as a Mohs surgeon, when I'm approaching something surgically or non-surgically, like Vishal was saying, I want to be confident of the margins ahead of time. It's easier to counsel patients if you know how large it's going to be or how big the reconstruction will be. So for me, confocal has been a game changer in mapping out lentigo maligna complex on the head and neck, and then choosing surgery or even nonsurgical treatment options, such as off-label use of imiquimod.

**VISHAL PATEL, MD, FAAD:** And isn't that why we love dermatology, is because we have access to the skin and that's why we say we can biopsy things, we have easy access. Well, now

this is another way to have a better view, a smarter view, and easy access. As Anthony said, immunostains have become part of the mainstay for Mohs surgery. We have evidence now looking for survival rates and recurrence rates related to melanoma, both invasive lentigo maligna type.—

--Well, I really see what Anthony is doing with confocal, it really gives you a three-dimensional view to start your margins in an appropriate way. And that gives us the confidence to provide strong evidence around how we approach head and neck melanoma tumors in a very evidence-based way, not just blind margins based on guidelines at arbitrary 5 mm, 10 mm, whatnot. This really is complete circumferential peripheral deep margin analysis because of these noninvasive modalities that we have.

**BRAD GLICK, DO, MPH, FAAD:** With dermoscopy, there is a little bit of a learning curve. Our residents every Tuesday have a wonderful dermoscopy course, led by Dr. Harold Rabinovitz. And I wouldn't call the dermoscopy learning curve steep but, Anthony, before we move onto the next topic, I thought it would be interesting to hear from you, is the learning curve for confocal pretty steep?

**ANTHONY ROSSI, MD, FAAD:** Well, hey, I would like to join those dermoscopy lectures with Harold. That would be amazing, what a great resource. And I've learned so much from all of those mentors. And yes, confocal, there is a learning curve, like dermoscopy. And I think like things that we have already learned in dermatology. So if one is interested in it, there is definitely courses. I also help run a course at Memorial and we teach confocal, the basics and some advanced. And so if there's interest, there's definitely resources for that.—

--And I don't think people should shy away from the noninvasive imaging or newer modalities like we'll talk about, AI. I think we should embrace them because, like Vishal said, the skin is so readily imageable and patients do not want necessarily biopsies or cutting.

**BRAD GLICK, DO, MPH, FAAD:** It's another example that we are not just pimple poppers. No disrespect to Dr. Pimple Popper, who is a great dermatologist in her own right, our technology has advanced incredibly. Let's move on and talk about artificial intelligence. So Vishal, I'm actually going to have you start and tell the audience about AI. It's so hot right now. Where does it play into dermatology in general and then perhaps our topic today of basal cell carcinoma?

**VISHAL PATEL, MD, FAAD:** Absolutely, thank you, great question. I was most excited to see how much of an emphasis the Academy put on AI this year. It really shows that we're paying attention to those relevant topics that are going to impact the practice, not just now but in the next few years. And I think a few years ago, we would hear about AI and you'd have that scary image of a movie of robots taking over the world. And maybe artificial intelligence is really a misnomer and the wrong word and we should start utilizing augmented intelligence.—

--And when I talk about this or try to explain this to people who don't understand it or even residents that are trying to understand its place in medicine, historical perspective is important. And a historical perspective, understanding what type of technology we use to be smarter. Pilots used to fly planes in a very different way and now they fly planes with so much augmented help that they're really involved in the takeoff and landing and everything else is automated, with the guidance of that pilot to know when things are going wrong. They can shift course, they can take over.—

--And that's what I think the dermatologists should be thinking about augmented intelligence. As a whole, it's essentially a statistical model that provides a lot of data that then we, as the interpreter, can interpret that data to our specific patients. And so in the realm of skin cancer, that may be from image analysis, taking pictures of lesions on the skin and being able to help guide us with some certainty if it's malignant or benign. Or it may be something like gene expression profiling, where you have the pattern of expressions of genes, either from a

noninvasive tape test or a histological examination to help us know with certainty the type of lesion we're looking at, but also the behavior of that lesion.—

--And so bringing that back to basal cell carcinoma, there already is a future of AI's role in noninvasive testing, from AI modalities, images that we can use in our practice that will then add to dermoscopy, confocal microscopy. This is all just more data that we will then have to interpret. And that's why it's so important for us to embrace it, because if we are the ones driving that ship, being the pilots of that journey, then we're really going to help take that patient from point A to point B, very smoothly and in a very happy manner.

**BRAD GLICK, DO, MPH, FAAD:** I love the analogy with the airplane and the pilots, because for someone who used to not be very happy to fly, I'm encouraged that I know that the pilot is flying the plane but that, as well, there's some remarkable technology guiding the pilot and it's integrative. And I love augmented instead of artificial. Anthony, your comments on artificial intelligence dermatology in general and, of course, skin cancer, basal cell carcinoma specifically.

**ANTHONY ROSSI, MD, FAAD:** I agree with Vishal. It's augmented, I feel augmented when I go into the room with the patient. And we're utilizing in some research fashions augmented intelligence, especially when it comes to things like full body skin checks or for people who have dysplastic nevus syndrome. So hundreds of moles, you need to go in there and feel confident that you're going to be able to serve this patient well. And utilizing different imaging systems and imaging modalities that have layered augmented intelligence into that makes me feel super charged to go into the room and I kind of love it.—

--And the patient loves it, as well, because they're seeing us interact with their body map, using the computer to help make better diagnostic choices. And there's only so much time in the day and utilizing this technology, it's so robust and I really think people would embrace it and not

fear it, if they saw it in action and actually saw what it could do for them. And then as far as in terms of basal cells, we've done some studies where we used AI algorithms to read Mohs slides, in a proof of principle concept.—

--And it's sort of like a check and balance system. We're in 2022, this is really exciting, and you can actually use different algorithms that help try to find basal cells. Or maybe find basal cell mimickers, maybe that's the next step, and really help to discriminate if you're having a tough case, utilize the computer to help us out. So definitely won't replace us. We'll actually have to be the stewards of the onslaught of patients who are coming in, wanting this technology. Because if it's so accessible, we may be over-inundated with patients.

**VISHAL PATEL, MD, FAAD:** I 100 percent agree with that. And it really is just like any other technology. We have smart phones now and it's ubiquitous. But again, ten years ago, Steve Jobs was the one and people were looking at him like this could not really occur and would not take such a big role in our society. Distill that down to the microcosm of dermatology and it's really the same analogy. And again, back to the point, I'm so excited to see how many topics on AI that the Academy has put on, especially to remove that fear maybe and get us all talking about how it can make us better doctors.

**BRAD GLICK, DO, MPH, FAAD:** Just before we move on, I have a question and this may demonstrate a little bit about this dermatologist's lack of AI intelligence. And that is, what does it exactly look like in the clinic? Does it integrate with our dermatoscopes? What does it look like? Anthony?

**ANTHONY ROSSI, MD, FAAD:** For us, we're utilizing digital dermoscopy. We're using sort of total body 3-D imaging of your skin, so actually getting these sort of avatars where all your moles and skin lesions are mapped. And then we can actually use different points in time and



compare the body maps for these patients and then allow the algorithm to sort out which ones have changed, which ones look atypical if there's anything concerning in that area.—

--Of course, we're doing a full diligent skin exam on the patient in real time at the same time. And we can override any of these assessments. But it's really remarkable to see it in action. It's so cool, the patients love it, as well. And it gives you this extra sort of boost in the exam.

**BRAD GLICK, DO, MPH, FAAD:** Dermatology back to the future. Vishal?

**VISHAL PATEL, MD, FAAD:** I was going to add that I think the other point about AI is that there's not going to be just one model or one product. You can choose what to utilize. So Anthony and the team at Sloan Kettering have this amazing program built together. But if you're in private practice and you don't have the resources to have that kind of overhead, I'm working with a number of companies because I envision, just like the dermatoscope, with smart phones, an app that utilizes your camera, gives you a readout, whether that's a percentage score or an understanding that you know what that result means, just like any other lab test.—

--And you can use that in lieu of a dermatoscope maybe and that might help speed up your practice and give you a higher efficiency in terms of assessing somebody during a full body skin exam. That may be the AI that works for a specific dermatologist. So it's going to be a big, big change for us but there will be a lot of potential options to utilize, you don't have to utilize everything.

**BRAD GLICK, DO, MPH, FAAD:** Amazing. And I think it raises up our optic in the house of medicine, for sure. Let's move on and discuss the role of noninvasive tape testing, such as the DTPLA. As well as post-diagnostic gene expression profiling, or GEP. Both I believe are perhaps being integrated into diagnostic assessment of basal cell carcinoma. Vishal, I'll start with you, tell us about it.

**VISHAL PATEL, MD, FAAD:** The background for both of these tests again, set in AI, using machine learning and algorithm to assess behavior of lesions or to help diagnose them. And that work originally and initially was done in melanoma and then moved into cutaneous squamous cell carcinoma. And now, there's a lot of research being done in basal cell carcinoma. Likely not as impactful in terms of the behavior, because we know basal cells are not, in terms of aggressive behavior, a much, much smaller subset of tumors. When they're aggressive, it's very obvious, we know the big ones, the ones that we're worried about. It's not small, individual lesions.—

--That's likely not going to be helpful for us. But what may be more helpful is if we're using noninvasive testing on nonmelanoma skin cancer, as a whole tape testing to know if something is a squamous cell or a basal cell, to help subtype so that you can then decide therapy as a result of that test, without a biopsy. Again, similar to what Anthony talked about with confocal microscopy. This will just be another diagnostic modality, not a one-size-fits-all, but really in the right patient, a younger patient with a lesion on the cheek that you suspect could be a nonmelanoma skin cancer and you're performing and you like the PLA test for a pigmented lesion, you may be able to do both at the same time for two lesions.—

--And then assess what to do from thereon, without a surgical option, if appropriate based on your interpretation of the data and the risk in that conversation. That's where I really think the future is going to be and that's what the research on basal cell carcinoma for tape testing is happening.

**BRAD GLICK, DO, MPH, FAAD:** More tools in the toolbox, phenomenal. Anthony, your comments on GEP and tape testing?

**ANTHONY ROSSI, MD, FAAD:** No, I think it's exciting technology. And we've seen it apply to melanocytic lesions, squamous cell carcinoma. And for basal cells, there's so common, of

course, but maybe in the future this will help us subtype and stratify which ones would be more responsive to nonsurgical treatment options. Maybe that's where this technology will help us, or which ones won't respond. And someone who does a lot of nonsurgical treatments, I would love to have that information beforehand.

**BRAD GLICK, DO, MPH, FAAD:** When I first utilized this test for melanocytic lesions in practice, it's typically a young person, it's on their face, they're concerned, "Don't cut me, Doctor." And I think it's fabulous for that, but the same goes for basal cell carcinoma, to be able to make that diagnosis with confidence I think is really helpful. In that very same individual, it may translate potentially, I know you're both Mohs surgeons, but they translate into an appropriate topical intervention which we do have in our toolbox. Vishal, other comments?

**VISHAL PATEL, MD, FAAD:** A comment, Anthony and I are both Mohs surgeons but we're very alike and have the same opinion, in saying that we don't want to cut and we cut when we know that we have to. And that reminds me of younger patients, like basal cell mimickers as Anthony pointed out, gene expression profiling might be really great for those lesions around the nose, those basaloid lesions that we're not sure, "Is this a basal cell or is it some type of hamartoma that may not be," and we're wavering and we want to be safe, because it's in the alar crease and we don't want to get down that path where it's going to be a big surgery.—

--Well, that's where gene expression profiling, to know what that behavior of that tumor noninvasively is going to be is going to be a game changer for your 38-year-old patient. And you don't have to disfigure them at such an early age.

**BRAD GLICK, DO, MPH, FAAD:** Wonderful. Thank you both very much, Dr. Patel, Dr. Rossi, it's been a pleasure. I appreciate the opportunity and the privilege to be able to interview both of you. Be sure to visit the AAD's Practice Management Center at [AAD.org/PracticeCenter](http://AAD.org/PracticeCenter) to

access all the resources we discussed here today. Thank you both, enjoy the rest of the meeting.

**VISHAL PATEL, MD, FAAD:** Thank you.

**ANTHONY ROSSI, MD, FAAD:** Thank you.