Season 3, Episode 6
After the Bite: Understanding Tickborne Illnesses and Smart Prevention Tips

Intro Voiceover: Welcome to Healthier You by Vanderbilt Health and Wellness, a podcast to help Vanderbilt faculty and staff live their healthiest lives.

Syra York: Welcome to the Healthier You podcast. I'm Sarah York. I'm your host today, and today I'm going to be talking with an infectious disease expert, Dr. Buddy Creech. We're going to be discussing tickborne illnesses. So welcome, Dr. Creech. Thank you for taking your time today to talk to us.

Buddy Creech: Thanks, Sarah. I'm excited.

SY: Yeah, yeah. So there's been a big buzz going on right now about tickborne illnesses. A lot of different things have been kind of splashed in the media and people are talking about it, so I'm glad that we're able to sit down and talk about this today. What is the number one thing that you want to get across about tickborne illnesses?

BC: Oh, the number one thing is ticks are gross. They're the absolute worst. Yet they're everywhere. They're all around us. They're in the woods, they're in our yards, and we don't have to live in the middle of nowhere to have tick exposures. But maybe, the more important thing to say is that the ticks that we think about the most are the ones that land on us. They feed, they get engorged, and we have to take them off. But that's actually a small number of the tick bites that we actually get. So, I think it's important to recognize that in this area of the country, doing anything we can to prevent a lot of tick exposures will then prevent us from getting those tickborne infections.

SY: Okay, awesome. Well, thank you for sharing that. Now, in this area, what would you say are the more common types of ticks that you observe?

BC: We really have three primary ticks. One is the Lone Star tick, even though we're not the Lone Star state. We have the lone star tick, and this is the one that has a little white dot on the back of it. These are plentiful in this area. Second is a dog tick. Third is a deer tick. And what's interesting about all of them is each of them carry slightly different risks of certain infections. So, for instance, that lone star tick carries things like ehrlichiosis, which is a disease that is really common in the southeast, but nowhere else, that causes fever, rash, headache, and bright lights hurt the eyes. It requires an antibiotic called doxycycline. But it can also cause what we've seen in Tennessee over recent years, which is this increase in alpha gal, which is an allergy to red meat that occurs after being bitten by ticks that have been feeding on animals with red meat. So, that's probably one of the ones that we see the most. The second one that we see in this area is Rocky Mountain spotted fever. Again, a misnomer because we're not in the Rocky Mountains, but it's called Rocky Mountain spotted fever, and this one is really common. This, again, is headache, rash, fever, bright lights hurting the eyes. Again, very easily treated with a medicine called doxycycline. And then the last one that gets a lot of media splash is Lyme disease. And thankfully, we're in an area where Lyme disease is not very prevalent. We're starting to see a little bit in the very far northeast corner up by Virginia, but even then, it's exceedingly rare because of all that goes into the lifecycle needing to be maintained for Lyme disease. So when people think about tick borne illnesses in Tennessee, we really need them to think about Rocky Mountain spotted fever, ehrlichiosis, and then this allergy called alpha gal.

SY: Tell me more about alpha gal, because I do have a lot of patients that come in with a tick bite. They are concerned. Maybe they've heard of a family member, friend, or maybe somebody that they know on social media that has had this happen to them. What would be your one takeaway with alpha gal? How common is it? What do we have to be on the lookout for and how do we prevent it?

BC: Well, alpha gal is exceedingly uncommon, but we're also still learning about it. We're also trying to make sure that we understand what it means to have some types of antibodies that we can measure in someone's bloodstream, and then what that means clinically. Right now, a lot of people are very in tune with their digestive health and their health overall. So, there's maybe some situations where people are being misdiagnosed either one way or the other. People not thinking about alpha gal, and they have a legitimate problem; or people that are now diagnosed with alpha gal, but maybe that's not actually what's causing the joint aches and the brain fog and the other things that they may be experiencing. It's really important, for Alpha Gal, to see someone at our ASAP (Asthma,

Sinus, and Allergy Program) clinic, like an allergy immunologist, to be able to really firmly make that diagnosis because there are a few cottage industries that are forming around this and that could be confusing for patients. The biggest takeaway is that, yes, we do see allergic reactions that form after being bitten by ticks, that are focused on meat. It's exceedingly rare, and we're only now learning as much as we need to about it.

SY: Well, thank you for sharing that. Another thing I've observed too is a lot of patients coming to me wanting antibiotics after a tick bite. So share what your expertise is in this area.

BC: Yeah, we've really begun to limit, if not really just completely avoid, antibiotics after a tick bite because at least in this area, we really don't see much benefit for doing that. The places where there might be a benefit is in New England, in the Northeast, where Lyme disease is remarkably prevalent. So if you're in Lyme, Connecticut, which is what Lyme disease is named after, and you have a tick that's been on for a day and a half and it's still within 3 days of that event, there are some who would give a single dose of doxycycline. I've said it three times now. This is the antibiotic of choice for tickborne infections. But even then, the data aren't very clear. So the point is, if you get bitten by a tick, if you have to pull a tick off, even if that tick is engorged, there's really no recommendation right now to preemptively treat with a dose of doxycycline in almost every situation.

SY: Awesome. Well, thank you for sharing that as well. So really, I mean, now at this point, it would be all about prevention. Preventing the tick from biting you in the first place other than, you know, trying to treat later with an antibiotic. So what are some good tick prevention tips?

BC: There's a few. Some of them make sense. Some of them don't. My favorite ones are things like tucking your pants into your socks when you're outside. Well, that looks ridiculous. So, no one's legitimately going to do that. But wearing deet-containing insect spray can be very helpful. Number two is making certain that when you are camping or hiking or doing a lot of yard work, just simply doing a tick check afterwards. Really paying attention to waistband, armpits, folds. Some people recommend wearing lighter colored clothing so that you can see the tick more easily. But really, it's just a matter of careful surveillance. And then when you know you're going to have a lot of tick exposures, wear bug spray in order to try to prevent them as much as you can.

SY: Awesome. And some places to avoid ticks would be obviously foliage in gardens, that sort of thing. So really it would be those that are hiking in the wilderness or have any prolonged outdoor exposure. This is not something that typically happens with someone that just maybe goes outside to check their mail, correct?

BC: That's exactly right.

SY: Someone that has been in the forest, in the wilderness, or in foliage around their home.

BC: And, that's exactly right. I think one exception to that would be for those who have dogs who spend a little bit of time outdoors and indoors. They can have ticks in their fur if they go for a little jaunt into the woods and then come back out. Those can get into the individual who's sitting in their home, and says they never go outside. My favorite story around this is from Crossville, just outside of Nashville here, where there's a famous study where golfers had an outbreak of one of these tick illnesses called ehrlichia. The epidemiologists evaluated it, and they found out that men were more likely than women to get infected. And the worse golfer you were, the more likely you were to get ehrlichia. So, it really had everything to do with, you know, putting a ball into the woods. The women were smart and said, “I'm not going into the woods to try to find this $1.50 golf ball. Let that one go.” Whereas the men were a little bit stubborn. They went looking for it. They got tick bites and they got ehrlichia. So, prevention is the biggest thing, but I would also say that in the summertime, but especially in Tennessee year-round, if there's an unexplained fever illness, with headache, with bright lights bothering the eyes, especially with a rash that's showing up on the wrists or the ankles, this is a reason to talk to your medical provider fairly quickly. Just to ask questions about that, because in the summertime, when we start to see that constellation of symptoms, we sometimes call that acute doxycycline deficiency because these are hard to diagnose infections from a blood test standpoint. But there aren't that many things that will cause all of those constellations of symptoms without the classic runny nose, cough, and other respiratory symptoms that might come along with a cold. So, I think it's right to know how to prevent and then also how to know those symptoms that might be indicative of a tickborne illness.

SY: Awesome and what advice would you give to primary care providers who are treating their patients based off of these acute signs and symptoms of tickborne illness?

BC: You know, the biggest thing we see are those who know that tests exist for evaluating for these tickborne illnesses, and they send them. And they either wait for them to come back before starting medication, or when the tests are negative, they say, “oh, this person must not have a tickborne illness.” And for Lyme disease, that can be appropriate. But again, we don't really have Lyme disease in this area. But for ehrlichiosis and for Rocky Mountain spotted fever, we really can't rely on those tests because they're not good enough to catch every single one. And early in the course, your immune system hasn't had a chance to be revved up to it. So those tests are going to be negative, even though you still have the disease. The biggest thing we can tell providers is that if you suspect a tickborne illness, go ahead and start treating with doxycycline. That will make all the difference in the

world. Don't rely on the tests. The other thing I would say is that we sometimes see healthcare providers get a little confused about whether there's a chronic version of any of these. For Lyme disease, certainly. Those friends of ours in the Northeast, they worry about this all the time and they're right to do so. But there is no chronic form of either ehrlichiosis or Rocky Mountain spotted fever. You get it. You get sick. You get over it on your own, or you get treated, and then it's over with. And that's a really important distinction between things like Lyme disease that people worry about for causes of certain chronic ailments.

SY: And, where should we go to learn more or to get more additional resources on this topic? There are some really great resources out there. One is the Infectious Diseases Society of America. They have, for healthcare providers, some guidelines around diagnostics and therapeutics, and then the CDC website, as well as the Tennessee Department of Health website. These can be really helpful, in part to show what times of the year are worse than others. Tickborne illnesses are year-round in a temperate place like Tennessee, but they're certainly worse in the summer and they're worse in October when the deer population is really prevalent. And then the CDC website will tell us a lot about current trends, as well as the emergence of some of these infections when we have difficult years.

SY: Awesome. And then just to circle back around, say somebody gets bit by a tick and they're trying to remove said tick. What is the proper way to do that?

BC: This is incredible. It depends on what your mom and grandmother did when you were growing up as to what your favorite way to remove a tick is. But there's really only one way that's best. So instead of putting petroleum jelly on there and smothering it; rather than lighting it on fire with a match. Yeah, don't do that. Fire next to skin is bad. The best, sure fire way to do it is to get some narrow pointed tweezers, grab the tick gently as close to the skin as you can without pinching the skin, and then just start giving pressure. Not fast pressure, not hard pressure, but just slow and steady pressure. And what will happen is the skin will start to tent up just a little bit. You'll think you're not making any progress whatsoever, but you just keep at it, and you keep at it, and eventually things release and the whole tick comes out. What you're trying to avoid is squeezing it so hard that basically the tick vomits back into the skin, which sounds like the grossest thing I could have said of all time. Or, pulling it so hard or squeezing it so hard that it actually leaves part of the head behind. That can just be irritative and annoying and will form a knot under the skin until that part comes out. So again, the best way to do it, tweezers, really close to the skin, slow and steady pressure. And it might take 10-20 seconds for that thing to release, but eventually it will.

SY: And do you recommend that people save these ticks? Because that's another thing that I see sometimes, is people bringing in their tick that bit them.

BC: It's really interesting. In the northeast, people often will do that because if they find the tick that is consistent with Lyme disease, it allows for a little bit better tailoring. We really don't instruct people to keep them here. Largely because there's no reason why one tick bit you, but another tick didn't, and it could be of a different kind. So, what we say here is just get rid of it. The best way to get rid of it is dump it in some rubbing alcohol. If you flush it, it can actually survive in the flushed water for a while. So, that's not the ideal way to do it. You can also crush it in something to make sure it's dead and put it in the trash can. The easiest thing to do is you're going to have some rubbing alcohol out anyway (because you're going to want to rub your skin with some rubbing alcohol, maybe put some neosporin on it afterwards, because now you've got a little bit of a small skin wound) just dunk it in some rubbing alcohol and that will kill it.

SY: Awesome. And do you have any final words or any other things to share on this topic?

BC: I think the most important things are ticks are real; ticks are gross; ticks can bite us and we don't even know about it. So, if you have an unexplained fever illness with headache, especially with a rash, talk to your doctor, see if there's a rationale for either diagnosis or treatment of a tickborne illness. And then the last thing is just when you're outside, especially in the summer, and especially around wooded areas, just make sure you take an extra 30 seconds to a couple of minutes, to do a quick tick check of yourself, of your kids. That can go a long way to prevent these infections.

SY: Well, thank you so much for your time. We really appreciate having you on here with the Healthier You podcast.

BC: Thanks so much.

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