

Mayo Clinic Q & A - Dr. Wendy Allen-Rhoades - Childhood Canc...

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SPEAKERS

Joel Streed, Dr. Wendy Allen-Rhoades

- J** Joel Streed 00:01
Coming up on Mayo Clinic Q&A, September is Childhood Cancer Awareness month, and today we'll explore the causes and treatments of childhood sarcoma, a broad group of cancers that can begin in the bones or the soft tissue.
- D** Dr. Wendy Allen-Rhoades 00:15
Sarcomas can develop in any place in the body. The most common places are in the muscles or the bones. So, sometimes people will present with a mass or a lump or a bump that they can feel that wasn't there before. So, there can be quite a delay to diagnosis in children because cancer overall is pretty rare in children and adolescents. So, it can take some time to get to the right diagnosis.
- J** Joel Streed 00:38
There are more than 70 types of sarcoma, and treatments can vary depending upon the type, location, and other factors. A sarcoma diagnosis can be very alarming to families. But with early detection and proper treatment, there can be a positive outcome.



Dr. Wendy Allen-Rhoades 00:53

Sarcomas have been a tough nut to crack for sure in terms of research and novel innovative therapies. We still have a ways to go, but we're doing much, much better than we were 20-30 years ago. But until we can cure everyone, it will never be enough.



Joel Streed 01:08

Welcome, everyone to Mayo Clinic Q&A. I'm Joel Streed sitting in for Dr. Halena Gazelka. According to the American Cancer Society, cancer is the second leading cause of death in children. Now fortunately, recent treatment advances have increased survival rates. 84% of children with cancer now survive five years or more. Sarcoma, a term for a group of cancers that begin in the bones and in the soft tissues and connective tissues, is one of the more common types of childhood cancer. September is Childhood Cancer Awareness month, and joining us to discuss sarcoma is Mayo Clinic hematologist oncologist, Dr. Wendy Allen-Rhoades, welcome to the program Doctor.



Dr. Wendy Allen-Rhoades 01:48

Thank you so much. I'm delighted to be here and am so glad that you invited me to talk about childhood cancer and sarcomas.



Joel Streed 01:53

Let's start simple. Many of us have heard the terms osteosarcoma and Ewing sarcoma. Can you explain just kind of what sarcoma is and the different types? And are these the same disease?



Dr. Wendy Allen-Rhoades 02:06

Sure. So, sarcomas are a group of cancers that happen in children and in adults, and there are several 100 different types of sarcomas. But the two that you just named osteosarcoma, Ewing sarcoma are two of the most common. The other common one is rhabdomyosarcoma. And even though they're in the same category, or family of tumors, they're very different and they're treated differently. So, osteosarcoma and Ewing sarcoma are both bone sarcomas. And they're treated generally with chemotherapy, surgery, sometimes radiation, but the types of chemotherapy we use are different. So, it's very important for us as a team to know exactly which type of sarcoma is diagnosed in a child, so that we can come up with the right treatment plan.

J Joel Streed 02:50
Do we know what causes sarcoma?

D Dr. Wendy Allen-Rhoades 02:53
Sometimes we do, and sometimes we don't. One of the main differences of all childhood cancers is, even though we're learning more and more about what causes them, they are not what we consider modifiable risk factors. So, most of the time in childhood cancer and in sarcomas, in children and adolescence, it's just a mistake that happens as a child or an adolescent is growing and developing. And it's not necessarily from, you know, exposure to a certain agent, like cigarette smoke, or tobacco, those sorts of things. So, we know the genetic changes that happen in the cells, but we don't know why some children get those genetic changes in their cells as they grow and others don't. But for some children, and for some families that have a family history of cancer, we do know what the ultimate genetic cause is, and we can start screening them early. But that is a really, really small percentage of patients that that happens to.

J Joel Streed 03:48
Are there signs and symptoms of the disease?

D Dr. Wendy Allen-Rhoades 03:51
Yeah, most children and adolescents do present with clinical signs and symptoms. So, it depends on where the tumor develops. So, sarcomas can develop in any place in the body, the most common places are in the muscles or the bones. So sometimes people will present with a mass or a lump or a bump that they can feel that wasn't there before. Other times they present with pain. Oftentimes, if it's a bone cancer, people will come in and say that their child is waking up at night and complaining of bone pain. And that is something that we're always concerned about. So, most of the time, there is something that brings them to the pediatrician's attention. Or usually it's the parents, let's be honest, parents are always the best observers of their children, and they'll come in, but it's not uncommon because there are so many things that look like, you know, bone pain, like growing pains and things like that in children. So, there can be quite a delay to diagnosis in children because cancer overall is pretty rare in children and adolescents. So, it can take some time to get to the right diagnosis.

J Joel Streed 04:56

That kind of led me right into that next question, which is, you know, how do we diagnose this disease?

D Dr. Wendy Allen-Rhoades 05:04

Yeah, so most times people will come in with, you know, a symptom, whether it's pain, a lump, or a bump, etc. The next thing that we usually do is get some type of imaging, whether it be an x-ray, an ultrasound and MRI. And based on that imaging, we can often get an idea of whether we think that this is something that we need to workup further or not. Most of the time, just looking at the imaging, we can tell that it needs more workup, we need either advanced imaging, or something like that. And then really, to ultimately diagnose any type of cancer, we have to get a biopsy. And a biopsy is a small piece of tissue where we sample it, we send it to our pathologists here at Mayo Clinic, and they look at it under the microscope, they tell us what it looks like. They do genetic testing on it, and all sorts of special stains, and then they come to a conclusion of what the diagnosis is. So, it's really, really important that the very first step, the diagnosis, and the histology, or what the tumor looks like under the microscope, is correct, because everything else falls in line after that, because I have to know what it is so that we can come up with a treatment plan to cure it.

J Joel Streed 06:15

Do you follow the general rules of, you know, looking at stage and type and things like that, there's other cancers?

D Dr. Wendy Allen-Rhoades 06:22

It's a little bit different than what somebody might be familiar with for, say, colon cancer or breast cancer. For sarcomas, it's usually what we call localized, which means that it just stays in the place where it started, or metastatic. So, it doesn't sort of go through the stage 1-2-3-4, like people might be used to with breast cancer or prostate cancer, things like that. And so, we either call them localized, meaning it just stays in that one place where it started, or metastatic, meaning we see it in other areas of the body that it has spread to. There are some nuances to that, but that's the general scheme of how we do it. And that is a very common question I get when people come in, is what is the stage of cancer that I have, and it's a little bit different than adult cancer staging.

J Joel Streed 07:08

Treatment options: What can we do for this now?

D Dr. Wendy Allen-Rhoades 07:11

Yeah, so sarcomas can be treated in three ways, and cancers can be treated in three main ways. We can cut them out with surgery. We can use chemotherapy, which is a bucket term for any medication that we use to get the cancer cells to die. Or we can use radiation therapy. For sarcomas, depending on what type of sarcoma it is, we might use one, two, or all three of those options, and it just depends on what type it is and where it's at. But most people will need a combination of at least chemotherapy and surgery together. That's the most common plan that we come up with.

J Joel Streed 07:50

Is there a role for proton beam in treating sarcoma and children?

D Dr. Wendy Allen-Rhoades 07:54

Yeah, absolutely. So, proton beam therapy is a type of radiation therapy. And it's a very specialized type of radiation therapy. So, radiation therapy works very well for sarcomas. It is basically high energy x-rays that are aimed at the tumor to kill the tumor cells. And the difference between sort of regular conventional radiation and proton therapy radiation is that our radiation oncologists are able to contour a little bit tighter with proton therapy, and therefore the surrounding tissue that is normal, that is not tumor, is spared from some of the side-effects. And this is really important in children who are growing because we want them to be able to grow normally and not have, you know, discrepancy in the length of their legs or have their bones not grow as long as the other side. And also, just for teenagers who may be done growing, there is a risk to radiation that secondary cancers can develop. And if you're 18, and you're going to live to be 80. There's a long period of time where that second cancer could develop. And we want to minimize that. And so, proton therapy has been very beneficial for all of our younger patients, even if they're already done growing just to spare that normal tissue damage.

J Joel Streed 09:08

How successful are we with treatment? What is the survival rate for pediatric sarcoma?

D Dr. Wendy Allen-Rhoades 09:14

So, pediatric sarcoma, the overall survival rate, if you sort of lump everything together and make some big generalizations is probably about 65 to 70% of children and adolescents that are diagnosed with sarcomas are alive at five years from their diagnosis. Most of the

patients that we diagnose have localized disease, which we talked about earlier, is where it just stays in one place. When it has spread to other areas of the body, that is where we really still have a very difficult time treating them. And that is where the main areas of research are taking place right now is how do we treat those children and adolescents better who already have metastatic disease because their outcomes are very, very poor, compared to patients who have localized disease and to other childhood cancers in general. So, we really feel, in the sarcoma community that we have a lot of work to do, because 65 to 75% is not enough for us. And those metastatic patients, we certainly feel like there is an urgent need for us to do better and have higher cure rates for them. So, we still have a ways to go. But we're doing much, much better than we were, you know, 20-30 years ago. But, until we can cure everyone, it will never be enough.

J Joel Streed 10:23

If a family gets this unfortunate diagnosis, what should they look for in a provider? I mean, is it just experience? Are there certain credentials for a facility that they should be aware of?

D Dr. Wendy Allen-Rhoades 10:37

Yeah, I think that's a really good question. You know, a lot of people, obviously, a cancer diagnosis is very anxiety provoking, there's a lot of fear surrounding it. And when you're dealing with rare tumors, there's a lot of uncertainty. So, in the pediatric oncology world, we're pretty blessed that we work kind of across the nation in a big Consortium, we're all part of one consortium. But it is really important that the diagnosis is correct. And that starts with having the tissue or the biopsy looked at by a pathologist who has a lot of experience in looking at sarcoma samples. As I said, there's hundreds of different types of sarcomas, and all of them can happen in children. And so, it's really imperative that the diagnosis is correct. And then the other really important thing is if surgery is needed, if surgery is part of the treatment plan, you really need a good surgeon who knows how to do sarcoma specific surgeries and understands the disease sort of from beginning to end and what the therapy looks like. And then lastly, you know, for people like me, the oncologist, the chemotherapy is pretty standardized across the country. And so, we've done a good job of standardizing that. But getting that whole team together might mean that it's all in one place, like you're at Mayo Clinic and other larger academic centers, we're sort of all under one roof. But if they're out in more rural areas, or away from a sarcoma center, it might mean that they come here for proton therapy and go back home for chemotherapy and sort of put that team together across state lines or virtually. And that's okay. But you want to make sure that each of those people know exactly what to do with sarcoma, so that the team can be comprehensive in the sarcoma care.



Joel Streed 12:24

What's on the horizon? Where is research leading us in this area right now?



Dr. Wendy Allen-Rhoades 12:29

Yeah, so sarcomas have been a tough nut to crack for sure. In terms of research and novel, innovative therapies, we had a lot of hope for immunotherapy, you know, as that was sort of hitting the horizon, and we were getting a lot of success stories with childhood leukemia. But sarcomas have been pretty resistant to immunotherapy. But there are a lot of very smart people who are still trying to tweak those types of gene therapies, T cell therapies, etc., to make that work. So, that is still ongoing, but there is still a lot of work to do. I think we're becoming smarter with our surgeries, we're becoming smarter with the way that we radiate things, like we talked about with proton therapy, intra-op therapy, etc. But there are still years and years to go before we are going to get to the point where we need it to be. We recently, probably a year and a half ago, have the first new agent for a type of sarcoma that has a specific gene mutation or fusion in it. That used to be very chemo resistant, but now has a 97% response rate. So, there are these small wins out there. We want more, obviously. But I think that is coming as we learn more about the genetics of the tumors and what is making them happen and developing specific drugs for those specific changes. So, we are getting there, and we are working on it, but we wanted it yesterday for sure.



Joel Streed 14:00

As we mentioned, this is Childhood Cancer Awareness month. Why is that important?



Dr. Wendy Allen-Rhoades 14:05

Yeah, you know, I think people until it happens to somebody you know, or happens to your own child, people don't think that children develop cancer. I think people often think that children can't tolerate the therapy that would be needed to cure their cancer. And they don't know that over 85% of our children now, you know, taking sarcomas out of it, but putting it into the bigger bucket. We look at all childhood cancer, we have very high cure rates and we've done a really good job as a research community to develop these therapies. But, that being said we still are lacking in funding for research. A lot of people still don't know what to do if a child is diagnosed with cancer or where to go, etc. And so, we just want people to know that, you know, we know that a cancer diagnosis is scary. We know that it's life altering. But we want you to know that there's hope, that we are doing really good things here at Mayo Clinic and abroad. And there is hope for cure, and there is

life after childhood cancer. So, even though only about 16,000 children are diagnosed with a new cancer each year, the risk of having cancer develop between the ages of zero and 21 is actually not that low. Because you know, there's 21 years in there. And so, we just want the world to know that we can treat this, there is hope, but we still need to push that research. And we still need to support our scientists so that the therapies that I give 20 years from now are not the same ones that I'm giving today. We want to do better. We want to cure them better. We want to cure them with less damage, and make sure that they're able to go on to live the lives that they want to live.

J Joel Streed 15:49
Sounds like an excellent goal to have for the future.

D Dr. Wendy Allen-Rhoades 15:52
Yes.

J Joel Streed 15:54
Anything else you'd like to add in this area today?

D Dr. Wendy Allen-Rhoades 15:57
No, I don't think so. I think you know, I think just having people's awareness, if somebody that you know, has a child who has been diagnosed with cancer, it takes a village to get the family and the child through that diagnosis. So, be there, support them in any way that you can. And just wrap your arms around those people in your lives that are going through this because it is challenging. But, you know, we are excited for the future, and we're happy that we're able to provide the care that we do.

J Joel Streed 16:32
Our thanks to Mayo Clinic hematologist oncologist, Dr. Wendy Allen-Rhoades for joining us to discuss sarcoma during Childhood Cancer Awareness month. Thank you, Doctor.

D Dr. Wendy Allen-Rhoades 16:41
Thank you for having me.



Joel Streed 16:42

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