Multidisciplinary Panel - DTRF 2022 Patient Meeting Webinar #2

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Jeanne Whiting: So our first presentation is a group presentation, a panel of sarcoma experts from… just a minute.

Lynne is sharing the slide there from University of Pittsburgh Hillman Cancer Center. And what we wanted to show is what a multidisciplinary approach to a diagnosis and treatment plan looks like. You might often have heard the word tumor board. Well, at major centers, especially major sarcoma centers, you will have a combination of many different specialists who will look at your case from all their different areas of expertise.

And we're gonna have an example of how this actually works from this group. I'm gonna turn the time over to Dr. Burgess to introduce her team today.

Dr. Melissa Burgess: Thank you Jeanne. And thank you for the Desmoid Tumor Research Foundation for having us today. We're delighted to join you. I want to just briefly introduce some of my colleagues that are on our panel today.

So I'm working, well, my name is Dr. Melissa Burgess. I'm a medical oncologist. I specialize in sarcomas and desmoid and connective tissue tumors. I'm also joined today by Dr. Stella Lee who is an orthopedic oncologist that works very closely with us. We also have Dr. Joshua Pinter, who's an interventional radiologist.

We have Dr. Megan Zilla, who is our bone and soft tissue pathologist. We have Dr. Adam Olson, who's a radiation oncologist, and Dr. Andrew Cordle, who's a musculoskeletal radiologist. So this is just to give you an idea of some of the members that are participating in our tumor board. And Jeanne, thank you for that presentation sort of like intro of what actually is going on.

So that's what we're gonna do today. We just wanted to highlight why this is so important to discuss all of your cases. Why by putting all of our heads together and not thinking in a silo that we can make the best decisions for our patients. So I'm hoping that all of you can see our slides here.

And first I just wanna go over a couple of housekeeping items. For today's tumor board, I just wanted to mention that all of our presenters today have no relevant conflicts to disclose, and all the information is de-identified for patient privacy.

So we have case number one. This is a, sorry, 61 year old. Woman with a neck mass. She first noticed the mass six months prior to evaluation and noticed that it was slowly growing in size. It was mildly tender to touch and especially when she slept on it, but nothing was warm or red on top of the mass.

She does have a history of breast cancer that was treated with surgery and chemo and radiation, history of high blood pressure, a seizure disorder, anxiety, and high low thyroid. As you can see here, we go through a lot of the past medical history and their medications as well as their social history and to point out that her family history was not significant for any family history of malignancy.

Her exam was notable for a three to four centimeter mass that was not mobile and not tender in the right lateral neck.

Dr. Andrew Cordle: Good afternoon everybody. My name's Andrew Cordle. As Dr. Burgess said, I'm one of the musculoskeletal radiologists at U P M C. The initial imaging evaluation of this patient include a contrast enhanced CT of the neck and as indicated by the yellow arrows, there's a soft tissue mass in the right paraspinal musculature is in close proximity to the bones of the cervical spine, but we see no evidence of destruction or invasion of the bones.

It's located within the musculature only. However, it does involve the C4 and C five nerve roots. The remainder of the brachial plexus, which is the main nervous structures coming out of the cervical spine are intact.

Dr. Melissa Burgess: Okay, patient went on to have a biopsy.

Dr. Megan Zilla: Hi everyone. I'm Megan Zilla. I'm in Bone Soft Tissue Pathology. So this is what a patient biopsy looks like under the microscope. And what you could see, this is considered low power, is that it's actually quite pink which is good. It means that there's a lot that is not the nuclei of the cells anyway.

So the basic structure of this biopsy is that the cells are arranged in sort of sweeping fascicles, is what we call it. Can I have the next slide please? If we go at a high power and look at these slides, or sorry, these cells, we can see that they're pretty bland. Meaning that they're pretty uniform, they're not very mitotically active, which means they're not very rapidly dividing and they're separated by a lot of collagen.

So this pink stuff in the background. Next slide please. Yeah, so then when we go on even higher power on the left you can see another image of these higher higher power image. And again, showing the same thing, the parallel nuclei, which is the like blank blue to purple portion, and then the pink collagen background.

And then on the right, what we have is called an immunohistochemical stain. And basically we use an a specific anti or an antibody that's specific to a protein. In this case, beta catenin. And for desmoid tumors, the beta catenin actually moves into the nucleus of the cell. So if we look on the top, there's in the middle where it's a little bit more brown, there's some blue you can see, and they're actually blood vessel cells.

So endothelial cells, and you can see that you can, they're blue, right? So you can actually see the nucleus, whereas the cells around it are brown because the stain is actually staining the nucleus. So this is actually a really nice marker for desmoid tumor. So this was read as a desmoid tumor.

Dr. Melissa Burgess: The patient went on to have an MRI exam.

Dr. Andrew Cordle: So we can see several months later the patient underwent an MRI.

We used several pulse sequences is what we, we talk about. We use different ways to evaluate the tissues of the body and that helps us evaluate the tumor, try to determine what type of tumor is, and importantly for this case, to determine

what other structures are involved. Similar to the CT, we see the soft tissue mass in the right paraspinal musculature.

Again, there's no involvement of the adjacent bone. However, again, there is involvement of the C4 and C five nerves. That's important for surgical planning or treatment planning, just to help understand kind of the local anatomy and what structures may or may not be involved in the tumor and may be important to identify during any potential surgery.

Dr. Melissa Burgess: So at this point, our tumor board gets together and we think about what are the possible treatment options here. Could we do an active surveillance and just do a watchful waiting for this patient with a newly diagnosed desmoid tumor? Shall we do surgery, radiation, some type of systemic therapy, or something else like cryoablation.

So Dr. Lee what are, what is your take in this situation?

Dr. Stella Lee: Hi, everyone. So I'm Stella Lee. I'm an orthopedic surgeon specializing in musculoskeletal oncology. And you know, I'm a surgeon. We love to operate. But that's one of the reasons why this sort of multidisciplinary approach and also involving surgeons who are fellowship trained in sarcoma and tumors is so important.

Because, you we wanna look at the whole picture. So for me, you know, desmoid tumors, as many of you have probably learned throughout today and just in the last few years, the approach has really changed over time. Where we used to operate on these all the time, but even you know, when I went through fellowship I finished in 2018, I was taught by my mentors, do not operate on these unless you know, it's a truly palliative situation where there's no alternative at that point, or I'm confident that I could get an R zero meaning microscopic negative margins. And so in this particular patient, for example, given its proximity to the nerve roots given its proximity directly abutting the bone, not involving the bone, but abutting it those are all factors that I would consider that, you know, I honestly to get a R zero margin negative margin, it would be quite a morbid surgery for this patient. So let's see what else we can offer her.

Dr. Melissa Burgess: And in this particular patient, we did feel that doing something for this patient was important cuz she was starting to experience some discomfort. And I think that's a really key point that in the absence of symptoms per, you active surveillance would be a very reasonable option.

Our patient did end up going on sorafenib and I just wanted to highlight as probably many people know, but I think it's important to review that sorafenib is a very good drug for desmoid tumors. There was a major phase three trial where patients were double blinded, meaning that their doctors and the patients did not know if they were receiving the active agent sorafenib for 400 milligrams daily or a placebo.

And it was a randomized trial where the computer decided which group the patient would fall into. There was 87 patients on this particular study that all had progressive desmoid tumors that were growing over a period of time or were symptomatic or had recurrent disease. And the responses were very encouraging.

In fact, at two years, the amount of patients that had that were progression free was 81% in the sorafenib group versus only about 36% in the placebo group. And there were a significant proportion of patients that had objective responses with decrease in their tumor size by 30% or more. And the time that, that it took to get that objective response on average or at the median was 9.6 months.

Unfortunately there are frequent side effects that can happen with this medication, such as rash, fatigue, high blood pressure, and diarrhea. So our patient did end up going on sorafenib. But unfortunately after a period of intolerability including difficult to control blood pressure. she had decided to come off of the medication.

So at this time our tumor board was thinking about what, for this particular patient.

Dr. Pinter, what are your thoughts?

Dr. Joshua Pinter: So, I'm Dr. Pinter, Interventional radiology. In terms of, you know, IR treatments for desmoid you know, people have looked at cryoablation as well as intra arterial infusions and some other ablation technologies. Cryoablation has the advantage compared to some other techniques in that we're not necessarily disturbing the tumor plane or the tissue planes like surgery might.

And it's also a very well tolerated modality. You know, patients oftentimes don't have you not too much recovery time afterward. We are limited by, you know, safety in terms of adjacent structures in this particular case as the tumor is very close to the and actually involving the exiting nerve roots at C four C five.

So this would be a case where we couldn't necessarily get an a zero ablation where we're getting imaging confirmation of enveloping the tumor by, by, you know, the ablation margin. But we should be able to treat the majority of the tumor and be able to do ablation for palliative and symptom improvement which also can help with progression as well.

Dr. Melissa Burgess: So our patient did proceed with that. Oh, sorry.

I'm just gonna skip over that real quick. There we go.

Dr. Joshua Pinter: And these are just images from the cryoablation in this particular case. There's a couple different ways we can plan this. Sometimes we use 3D modeling. In this case mostly just drew approach lines on individual CT slices.

If we could advance the next slide. And as we've mentioned several folks have mentioned we, we were concerned about the the nearby cervical nerves. We can monitor those nerves either directly with functional EMG monitoring. Or we can also put temperature probes near the course of the nerves to make sure we're doing, you know, a safe treatment.

So in this case we were doing temperature monitorings. We placed a series of three temperature probes along those C4 C 5 nerve roots. And then along the break plexus so image screen right is just showing a graph of the output of those temperature pros for, so for this patient that the temperature didn't really drop much along the course of the nerve.

If you'll advance the next slide. Just images during the cryoablation. So the cryoablation is done with small cryo probes, which are needles with gas expansion chamber. The image right shows the control device, which controls the delivery of gas into the needle, and those needles cool very rapidly down to negative 160 degrees Celsius to create ice within the tissue.

And as ice forms within the tissue, the ice crystals within the cells cause cell death. Next slide. And this is images of the cryo probes in place. The the darker circular area you can see with the red arrows and the two images on the right are actually that ice within the tissue and developing the area of tumor.

And we monitor this in real time to make sure we're not you know, getting too close to those nerve roots or too close to the skin which also, you know, may cause issues.

Dr. Melissa Burgess: Excellent.

Alright. Well let us move on to our next case. So our next case is a 22 year old man who presented with a leg mass.

He did present with leg pain. It was behind the right knee and calf. This was in November of 2015. He did know that there was a history of prior trauma in this area. He was evaluated by a local in his community, a local orthopedic surgeon when his pain did not improve. He does have a history of asthma and a history of a dropped lung, a spontaneous pneumothorax and had a basically minimal other past medical history and no significant family history of malignancy either.

On exam, he did have a palpable tender mass or non-tender mass behind the right knee.

So MRI was performed.

Dr. Andrew Cordle: Our first imaging study was prior to any surgical intervention. This is an MRI of his lower leg. As I stated before, we use multiple pulse sequences to evaluate these tumors. So on the top left image, we see a bright soft tissue mass within the posterior compartment of the lower leg.

On the next image on to the right of that, we have a T1 weighted images, and you can see that the mass is similar to the adjacent musculature in terms of its intensity. As we move down the leg, which are the bottom two images we see a little bit different signal characteristic of the lesion.

So on the left image, we have both areas of bright signal and dark signal, and again, we get to see some of that dark signal on the right axial T1 weighted images. Next slide please. Importantly to our surgeons. Again, we wanna look to see the surrounding neurovascular structure. So the red circle is indicating where those structures are.

And in this case, the tumor is in very close proximity to the structures which is, would, like we've been talking about earlier would make resection difficult, or we would have to really consider where those structures are in their relationship to the tumor.

These are sagitally oriented images. So it gives you a good look at the extent of the tumor along the length of the leg. So on the left sided, the image, again, we have a fluid sensitive, or what's called a stir sequence. And the tumor is for the

most part, very bright. However, it does have areas of darkness about the inferior and anterior aspect of it.

And then finally, on the image on the right, again, this is a T1 weighted images. So on this sequence, a majority of the tumor is similar to muscle in terms of signal intensity. However, again, we get that dark area about the anterior aspect of the tumor.

Dr. Melissa Burgess: So at this point you know, obviously when we see something like this Dr. Cordle can you kind of tell on these that this may look like a desmoid tumor, or at this point you're still kind of thinking that it could be a couple of different things and maybe a biopsy would be recommended.

Dr. Andrew Cordle: Yeah. So unlike bone tumors, unfortunately for soft tissue tumors, we are not as good at predicting the pathology by looking at the imaging features.

There are a subset of tumors we can look at and feel comfortable that we're gonna are there's a high likelihood. What we think it is exactly what it is when we do a biopsy. Unfortunately in a case like this, a lot of the imaging features are non-specific. It could be a lot of different things.

Some of the dark areas that I did point out that can be seen in fibrous or desmoid type tumors that may push us in that direction. But a lot of times we do need a biopsy to get pathologic confirmation of what we think it might be.

Dr. Melissa Burgess: Great. And this patient did undergo a biopsy.

Dr. Megan Zilla: And so here, this is what the biopsy looks like under the microscope.

So we're gonna start at low power again and again, you can see it's quite pink. And then the cells are also arranged in sort of these sweeping fascicles which means they're like, you know, long straight lines or curvy lines of parallel nuclei. Next slide, please. When we go on a little bit higher power, this is very similar to the other to the prior patient where we have uniform looking cells, bland looking cells with their spindled cells.

So shaped a spindle. And they're in this background of collagen. So the pink kind of ropey or wavy material in there. Next please, and again, with this patient. For our, you in order for us to make a diagnosis we did do a beta

catenin stain again, and right here in the middle where you can see there's sort of this blush of brown again, that's a a blood vessel.

And so you can see the blue nuclei of this blood vessel because they do not have nuclear beta contain. Whereas around this, around the blood vessel, there are these really dark brown areas, which is nuclear staining for beta catenin. So then this patient was diagnosed with a desmoid tumor.

Dr. Melissa Burgess: Thank you Dr. Zilla. Are there other things that you would be considering in this particular situation?

Dr. Megan Zilla: Yeah, thanks for asking.

Honestly, with the how bland these cells look, which by that I mean they're not so worrisome looking. They're not, as I mentioned in the first case, they're not very mitotically active, so they're not replicating a lot. They all look very similar to each other, or the uniform or bland descriptor I use, meaning they're not they're not kind of scary looking.

They're not very, pleomorphic is a word that we would use to describe something that looks malignant or Aggressive. This doesn't look very aggressive. And so some of the things we would consider honestly is a scar, like this could just be a fibrous scar. If the history and the patient location as well as imaging does help us a lot.

And so if there's a history of trauma to this area or you know, surgery, that kind of thing is this would, you know, help us consider what it is. Other things like if those were in the bone, this could be a desmoplastic fibroma that, that would look very similar. But the beta catenin stain with the nuclear staining helps us a lot make this diagnosis.

Dr. Melissa Burgess: Thank you.

So our patient did go on to have a, what we call a marginal excision. And basically that means that the surgeon went in and wasn’t. May have known what this was but didn't fully get a full margin. Maybe Dr. Lee can touch on that as well. But first I just wanted to mention that he did a short time after the marginal excision start feeling a lot more fullness behind his leg.

So, so we did obtain some more imaging. So let's look at that first and we'll get Dr. Lee's opinion.

Dr. Andrew Cordle: So again, this is an MRI following the marginal excision. And again, we see another soft tissue mass or portions of the same soft tissue mass. We originally saw very similar signal characteristics, so on the right.

Top right image, we have a bright signal within the lesion. On the top left. The signal of the lesion is similar to the surrounding muscle. Again, we do see areas of dark signal on both those images. On the bottom right image, that's a post contrast image. So we've actually injected contrast in the patient and we can see avid enhancement of the lesion, again, allowing us to clearly see kind of the margins or better delineate where the lesion is.

Also, it helps us determine whether the lesion is solid or cystic. In this case it looks like it's a very solid lesion. Next slide. I believe I have a little bit more. So, and again, to give us a sense of in the length of the tumor along the long axis of the lower leg, we see this heterogeneous bright mass.

Again, there are focal areas of dark signal as well. . So unfortunately there is significant disease burden left in this patient's lower leg.

Dr. Melissa Burgess: So at this point Dr. Lee So this patient did go on to have surgery. What are your particular thoughts about that?

Dr. Stella Lee: Yeah. So, you know, I think this is a good case to learn from for all of us.

So, I did kind go through the records and see what exactly transpired. And a couple things with these rare tumors, desmoid is one of them. It's benign, but locally aggressive. And then of course, sarcomas, which this group of physicians here right now in the tumor board, we're part of a sarcoma team.

You know, these, we, I cannot emphasize enough, they need to be sent to a specialized center where there are doctors who are familiar with treating these rare diseases. And so this is an example where The surgeon I'm sure is technically very good surgeon. I'm not questioning that. But in terms of just you know, indications for surgery, you know, knowing kind of what to expect, how to counsel the patient.

So from the very first imaging that we had, you know, the conversation would go something like, Alright, for me to try to get negative margins on this, I'm going to have to sacrifice your vessels in the back of the leg. Which, you know, that in of itself can be done because most patients have three vessel flow distally.

But on the, but the other fact is that the nerve is near there too. And so we would be having a real conversation about, you know, pros and cons in terms of function, long term morbidity, whether it's worth you know, going through all of that. Cuz again, this is benign, but it is locally aggressive, so depending on the amount of symptoms the patient was having.

In this scenario, the patient did have an intralesional or marginal incision. Sorry, resection. And so, it was predictable that he would recur. And so, unfortunately that is what happened. And again, going back to what we know about these desmoids is as a surgeon, they're going to come back.

And so we try our best not to operate unless we can really get clear margins.

Dr. Melissa Burgess: Now Dr. Olson this case this patient, you know, had this really rapid sort of recurrence or residual disease that grew and was having a lot of difficulty. Would this be a particular case where we may consider radiation or are there indications for radiation for patients at this point?

Dr. Adam Olson: Thank you. So, I'm Adam Olson. I'm the radiation oncologist at U P M C, Hillman Cancer Center, specializing in the management of soft tissue sarcomas and desmoid tumors. So to kind of echo a few of the points raised by my colleagues thus far the management of desmoid tumors has has certainly evolved and initially considering observation and more kind of limited aggressiveness, I guess for upfront management is key and radiation certainly falls into that category as well. So, at present, you know, radiation therapy in the adjuvant setting, meaning after surgery is pretty broadly discouraged as a kind of a one size fits all role for for radiation.

Is probably best exemplified in a few selected settings. So, number one for patients who have locally recurrent disease for which morbidity of surgery may be excessive. And or the location is such that renders it potentially a significant functional deficit. We know from, you know, many studies that radiation is an effective treatment modality, and these are sensitive to radiation.

However, balancing that against the known issues related to fibrosis and the potential rare but devastating late effect of a radiation induced cancer, particularly in young patients such as this one. Is certainly relevant to consider. So in my practice has been to really to kind of follow with Dr. Lee's statement is to try to see any and all cases of Desmoid tumor as, as personally as I can because of their rarity and their kind of unique aspects of care. In in this particular case, know, this is a tumor in a challenging area of the body that can lead to significant functional deficits.

So, because it did recur so quickly he was

Dr. Melissa Burgess: Yeah, he did

Dr. Adam Olson: And eventually receive radiation. This dose of 56 gray, 28 fractions is is a broadly utilized dose fractionation which is not as high as some other situations that we use in soft tissue sarcomas but has been shown to be an effective and well tolerated dose.

Dr. Melissa Burgess: Okay, great. Now I recognize in the interest of time, we do have some more slides prepared. But I wanna make sure we don't go over I guess what I could do is I could just briefly re touch upon this case and then we could get into the question and answers, if that's okay with everyone.

Jeanne Whiting: Yes. We just have a couple more minutes, Dr Burgess.

Dr. Melissa Burgess: Yes, exactly. So what I just wanted to say was unfortunately, you know, this patient did end up you know, they went for radiation, but unfortunately did end up with a recurrence. We did end up doing a watchful waiting, an active surveillance for this patient over several MRI scans. But however, here in December of 2017, there was a recurrence.

And I think Dr. Cordle you mentioned that there was this is actually more proximal in the leg, correct?

Dr. Andrew Cordle: That's correct. We're now at the level of the distal femur, so kind of at the knee joint.

And in the posterior aspect we see a new soft tissue mass in that region.

Dr. Melissa Burgess: Yeah. So, let me skip over that.

So at this point we all kind of thinking about what would be the best choice for this patient. He did end up going on sorafenib at this point and just wanted to highlight that after several months of sorafenib we have an MRI here. What do you think Dr. Cordle?

So this is a great example of what is in the literature about treatment response from sorafenib. So we see a couple of key features. So number one, the overall tumor volume has decreased. Kind of greatest dimension has decreased, but also we see a decrease in T2 signal intensity. So if we think about how bright we've

seen this lesion in the past, if you look at the top right image, that area where the tumor is now dark.

And so that's been shown to be an MRI feature showing response to the sorafenib.

Dr. Melissa Burgess: Patient went on and off sorafenib ended up with more progression in 2020. At this point again, we had the same sort of discussion. Did end up having another palliative surgery, had a short period of time without any disease, but again, had another recurrence in a similar location.

The good news is that this patient did resume sorafenib and at a lower dose and is tolerating it very well. And actually more recently we were noting a positive response. So sorry to speed up the last couple images there, but just to give you an idea. And we just wanna thank you today and for our, you know, for having us.

And we would like to open it up for any questions at this point.

Jeanne Whiting: Okay. I will go to the q and a. We are not taking questions in the chat. But I have a question here just to clarify. If areas on the MRI or CT are dark that indicates the tumor isn't active, could you just go a little deeper into that?

Explain what the T2 signaling really means and how you analyze it.

Dr. Andrew Cordle: So there were a couple questions about can we determine the activity of the tumor by mri? And unfortunately we're not able to, on a cellular level, determine what is going on with the tumor. What we think is happening when the areas become darker is that those areas are either scar formation or more fibrous and less cellular.

And therefore that in combination with decreased tumor volume is thought to show a response to the systemic treatment.

Jeanne Whiting: Okay. Another question. I just discovered that I have another tumor right below my current one on my abdominal wall, which was about 10 cent centimeters prior to my cryo treatment at Cleveland Clinic in December. Since I have my larger one responding, the newer one about 1.9 centimeters, do I need to consider medical therapy at this point?

Dr. Melissa Burgess: I mean, I think that's a great question. I think that if you could always review it at this tumor board or, you know, at a tumor board is what I mean. And if the patient had a successful cryoablation, there might be an option to go back. I guess Dr. Pinter could touch upon that, but I think that may be an indication absolutely for medical therapy at that point, if the tumor is progressive or symptomatic and is not amenable to other options that are local.

Jeanne Whiting: Dr. Pinter

Dr. Joshua Pinter: Repeat cryoablation often as an option if the patient's, you know, tolerated the initial treatment well, and this is a satellite lesion that's popped up oftentimes we can reablate.

Dr. Stella Lee: And can I just add that, know, the it also has to do with symptoms, right? So if the new mass that you discovered is only is 1.9 centimeters and you found it because you're very aware and palpating that area, but it's not particularly symptomatic in terms of pain or you know, any other clinical indication, it might be okay to, you know, do the active surveillance and clinically monitoring this mass to see if it stabilizes or you know, how it's going to behave going forward.

Jeanne Whiting: Okay, Fantastic. Another question, Would you ever recommend cryoablation for an abdominal rectus abdominus desmoid? Dr. Pinter?

Dr. Joshua Pinter: Yeah, certainly. We have at least one case we've done at U P M C for that but cryoablation in the rectus muscles is very well tolerated.

Jeanne Whiting: Okay. This is a big question for all of our patients because the misdiagnoses, the surgeries, without contemplating the potential ramifications, et cetera, occur often at the level of the local oncologist or surgeon.

Question, how does this "no surgery" message get out to all the centers? I had a recurrence after resection doctor said it would be a one and done. Now it's spread and I'm dealing with this for years.

Dr. Melissa Burgess: That is a great question.

Jeanne Whiting: Dr. Lee, do you have any insights on that?

Dr. Stella Lee: Well, I mean, you know, there's a purpose to this meeting, right?

This webinar and everything that you're doing. You know, I think this is great that and it's our responsibilities as practitioners to stay up on the current literature and the data. You know, I and I'm sorry that you're going through this and I'm not sure you know, when the original surgery was you know, hopefully now more and more you know, surgeons are getting the message.

But I think emphasizing before what I said, like, you know, going to a specialized center, I know sometimes it's inconvenient, it's several hours away. It might be a different state. But it's just so important to be able to find folks who are specializing in these disorders and have this sort of virtual or this opportunity to discuss in a multidisciplinary fashion.

And actually touching upon one of the other questions about kind of surveillance I think someone mentioned about MRIs. You know, that's another thing that I feel very strongly about. We do routine surveillance not just desmoids, but other tumors as well. And the quality of the imaging is so important.

And when patients ask me, do I really have to come back to, you know, this location to do it, I tell them, Well, number one, it's good if you have like, a similar kind of a, a. You know, protocol so that you can compare it from one to the next. And it's also very helpful to have trusted you know, doctors like Dr. Cordle and musculoskeletal imaging so that they can actually look at it. And if it's a poor quality image, then it's gonna be tough for everybody, including the radiologist and your doctors to figure out what's going on. So, that's something else that I always tell my patients that it's good. It's really important to go to a center that does good imaging.

Jeanne Whiting: Thank you so much. We're at the end of our time here. I just want to say that one of our main focuses at DTRF is to try to capture the patient at the point where they're making those treatment plans and I believe it's a line from Shakespeare, instead of "Get thee to a nunnery,", it's "Get thee to a sarcoma center." As Dr. Lee points out, it's worth the trip. It's worth getting a second opinion, whatever. And it's been so valuable today to have your presentation and see the value of the multidisciplinary approach from experts who are used to dealing in soft tissue tumors and particularly in desmoids.

It's can change your whole journey and be you know, life changing in terms of what happens with you in your desmoid tumors. Any closing comments, Dr. Burgess?

Dr. Melissa Burgess: Well, Lynne, we did, or, and Jeanne, we just wanna say thank you again for having us. I really appreciate all my colleagues today for for joining in on this.

And if there's anything more we can do, we'll try our best to answer some of these questions in the q and a chat here. But yeah.

Jeanne Whiting: That would be great and answer them much appreciate it. Thank you so much everybody. Thanks for spending some of your precious Saturday time with us.

Dr. Melissa Burgess: Thank you.

Jeanne Whiting: All the best to you.

Dr. Andrew Cordle: Thank you.