

Breast Cancer Imaging

Webcast

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Introduction

Andrew Schorr:

Breast cancer screening, mammography, sometimes MRI, follow up with ultrasound and should a woman need treatment, even PET scans, how does it all come together, and what does it mean for you? Hear from a leading breast radiologist coming up next on Patient Power.

Andrew Schorr:

Hello and welcome to Patient Power sponsored by the Seattle Cancer Care Alliance. I'm Andrew Schorr. Well, as we record this program it is once again Breast Cancer Awareness Month, and what is so important, step one, related to breast cancer is of course screening for women at the appropriate age. We're going to talk about that. Also help you understand what confidence you should have in breast screening imaging from a leading breast radiologist and also understand how imaging comes into play if there is something suspicious and what about if you then undergo treatment. How can the appropriate imaging modalities really give a good picture of what's working and then help plan what's right for you.

So to help us understand all that is Dr. Peter Eby. Dr. Eby is an assistant professor in the department of radiology at the Seattle Cancer Care Alliance and the University of Washington. Dr. Eby, thank you so much for joining us on Patient Power.

Dr. Eby:

Oh, it's my pleasure.

Advantages of Mammography

Andrew Schorr:

So, Dr. Eby, let's start first with mammography. And I know that the Seattle Cancer Care Alliance even has a digital mammography van going around. Why is it so important for women to take advantage of that or wherever they go to have a mammogram?

Dr. Eby:

Breast cancer is one of the most common cancers in this country, and especially in the Northwest, actually, we have one of the highest incidences of breast cancer in the United States. But what we have seen and what the data show are that women

who get screened are more likely to survive their cancer because those cancers are detected earlier when they're smaller and easier to treat. And mammography is the best test we currently have to screen patients.

Andrew Schorr:

Let's talk about mammography now. In recent years digital mammography has come into play, but no matter what it still takes a trained radiologist to really read what's going on, and women have a concern sometimes, well, is anything being missed. So talk for a minute just about the art of radiology. You're a specialist in breast radiology, not everyone is. Where does experience, if you will, come into play in looking at that image and then being able to spot it? Because it's not always immediately apparent, is it?

Dr. Eby:

It's not always immediately apparent, and I think you bring up a very good point that in some ways there is quite a bit of art to radiology, and this is especially true I think for mammography. In fact as I teach residents and fellows I often get comments such as, this is really difficult, this is hard to look at, particularly because there aren't a lot of clear landmarks, for example, when we look at a mammogram as opposed to, say, something like a brain MRI. Well, the brain is the same in every single patient. We can always look at structures on both sides. The detail is very consistent.

However, mammography provides images that are highly variable from patient to patient. Even the same patient may get a mammogram one year and then the next, and those images can look significantly different just from a positioning standpoint. So it becomes very challenging to look at mammograms unless radiologists do it on a consistent basis, and I think that's an important point when patients consider, if they have a choice, where to get their mammograms. I always encourage them to get those mammograms at a place where they're going to be read by somebody who specializes in breast imaging, who does breast imaging most of the time, and even, if we can go beyond that, someone what has had extra fellowship training after residency just in breast imaging. The data show that those people who've had that extra training, who do breast imaging on a consistent basis perform better. They catch more cancers. They have fewer call-backs for normal findings, and it can be significant.

Follow-up After Suspicious Results

Andrew Schorr:

So the point is not all radiologists are breast radiologists, and not even all equipment is the same either, but the equipment is not the only answer. It's who is reading your images. Now, let's talk about follow-up, as you said, when is something truly suspicious and when someone needs follow up. Now, you have other modalities then that follow up. What do you do at the Seattle Cancer Care Alliance? If something is suspicious, what typically happens next?

Dr. Eby:

That's exactly right. After a woman has had her screening mammogram, either at our digital van or our other center at Roosevelt, if we read that mammogram and it has some kind of finding that is out of the ordinary then we send the patient a letter and ask them to come into the Seattle Cancer Care Alliance for what we would call a diagnostic mammogram, which is slightly different from a screening mammogram. A screening mammogram is done usually, as I said, at a digital van or at Roosevelt. Patients get their images, they go home, they don't get their results right away.

When a patient comes in for a diagnostic mammogram we'll do additional special views. There will be additional mammography views to try to determine is this a finding really suspicious or does it actually turn out to be normal breast tissue that looked a little abnormal, and then also how big is it and where is it. Then we'll often transition those patients, for example, to ultrasound where we can then look specifically at that location and try to get additional information to determine whether or not this is really a suspicious finding.

Andrew Schorr:

Now, as far as that goes I know that most often what is suspicious, correct me if I'm wrong, is not cancer, but of course the woman is really worried. But most of the time it's not. Is that correct?

Dr. Eby:

That is correct. When we identify things in the breast and call them suspicious what we're doing is basically categorizing them into a likelihood of them being cancer. And when we call something suspicious usually what we'll recommend next is some type of tissue sampling, meaning we do a needle biopsy to take a tiny piece of it to find out exactly what it is. And most of the time when we do these biopsies these turn out to be noncancerous lumps or noncancerous calcification, for example. So I would say that on average somewhere between 30 and 40 percent of the biopsies that we do show cancer, and 60 to 70 percent turn out to be benign.

Andrew Schorr:

So for a woman who, you know, anxiety gets rolling, and they say, oh, my, am I the one out of eight women who develop breast cancer, is this it, most of the time it's not, but having the early screening is important because if it is breast cancer that's their best chance of a cure, right?

Dr. Eby:

That's exactly right. I want to comment on a few things that you just mentioned. First of all I'd like to comment on the one-out-of-eight number,

Andrew Schorr:

Sure.

Dr. Eby:

...which is very popular in the press. I do want to clarify that that one-out-of-eight number is based on if a patient makes it to age 85. If somebody makes it to age 85 they will have had in their lifetime a one-out-of-eight chance of being diagnosed with breast cancer. And the reason why I bring it up is because I think that younger women, for example in their 40s, think, oh, my gosh, I'm going to go for my screening mammogram, there's a one-out-of-eight chance that I have cancer. And the fact is that at that age it's a much lower number. It's one out of 300. What I try to do, and this touches on your point about anxiety, is to educate women about the fact that at that young age cancer isn't all that common. If you make it to age 85, then it's a one-out-of-eight chance, but at those younger ages it's not that common.

And I do think that it's an important job of the breast radiologist to see patients face to face whenever possible. So, for example, here at the Seattle Cancer Care Alliance what those patients go to ultrasound I go in or one of the other radiologists goes in says to the patient, we're looking at something, and try to keep them calm. We want to get more information. We're not exactly sure what it is. Try to counsel them again that most of the time these biopsies turn out to be benign. And then we try to get their results back to them very quickly because anxiety is something that everybody has to deal with, and I think that it's important to help patients sleep at night, for example, while they either wait for their biopsy or wait for their results.

Now, having said that, again, the important point about all this screening is that it's our best chance to catch cancer when it's small. And cancers that are caught when they're small, for example, a centimeter or less, that haven't spread to lymph nodes have a greater than 90 percent cure rate. So that's the flip side. What I hope to convey to patients is that by having a screening mammogram, they have the opportunity to really take control of their cancer care, to find that cancer when it's easy, to have control of a cure rate that's greater than 90 percent.

Current Guidelines and Recommendations

Andrew Schorr:

Let's go over the guidelines just for a minute. So if there has not been first-degree relatives with breast cancer in a woman's family what is the current recommendation for her having a mammogram and then how often?

Dr. Eby:

The current recommendation is for women to start screening at age 40, and then to have a mammogram essentially every year after that.

Andrew Schorr:

And if, let's say, your mom had breast cancer, let's say, maybe before menopause, in her 40s, what about you if you're a younger woman?

Dr. Eby:

Good question. So in that scenario what we're identifying is the fact that patients who have had a first-degree relative with breast cancer are at a little bit higher risk. And when I say first-degree relative I mean mom or sister. And what we do in those scenarios is we try to find out at what age mom was diagnosed. For example, let's say she was diagnosed at age 45. Then in order to hopefully catch cancer early in daughter if it should happen we subtract ten years from mom's age at diagnosis. So if she was diagnosed at 45 we subtract 10 years to get 35, and then we recommend screening for that daughter starting at 35. So in those specific scenarios we are recommending screening to start earlier. And that's with mammography.

Andrew Schorr:

Well, let's talk further about another technology. I know we've interviewed your colleague Dr. Connie Lehman about MRI in certain woman who are identified at higher risk, maybe where mom or sister had it at an earlier age. Where does MRI come in along with mammogram?

Dr. Eby:

That's an excellent question because MRI is a relatively newer technology in the fight against breast cancer. And the recent data and recommendations that have come from the American Cancer Society in 2007 indicate that MRI is actually very good at detecting cancers, it's very good at detecting them early, and the current recommendations are for patients that are at high risk, and when I say high risk I mean a greater than 20 percent lifetime risk, so then we're talking about one out of five instead of that average lifetime risk of one out of eight. Those patients can benefit from having screening MRI to find cancers early.

And the big question comes in, how do we determine a patient's lifetime risk to find out who is really at that 20 percent threshold. We're lucky at Seattle Cancer Care Alliance to have a special clinic that is devoted entirely to high-risk patients. So for example if I meet somebody in my clinic who has come in for a screening mammogram or who has come in for a lump that they're feeling who says, you know, my mom was diagnosed with cancer, my sister was diagnosed with cancer, I immediately ask them if they have had any consultation about their own personal risk. And if they haven't then I refer them to this breast cancer prevention clinic so that they can go and meet with a provider who can get a whole bunch of information from personal history to family history, to try to determine whether or not they meet that threshold for needing a breast MRI.

Andrew Schorr:

And then if a woman has a MRI because she is in that higher risk group, we talked about annual mammograms for all women over 40, some women younger if they have had a first degree relative, what would be the frequency of MRI?

Dr. Eby:

The recommendations from the American Cancer Society are also annual MRI for that group. And that's in addition to mammography. It's not in place of. And the

reason why it's in addition to and not in place of is because mammography still is based on the best data that can be obtained. These are randomized, controlled, blinded clinical trials in which we take two groups of women, and these are old trials. These were done in the 70s and 80s, trials that showed that women who were screened with mammography lived longer. And we don't have that type of data available for MRI yet by itself, so at this point we recommend mammography every year in addition to MRI every year for those high-risk patients.

Andrew Schorr:

Thank you for explaining that, Dr. Peter Eby. We're going to take a quick break. When we come back we're going to understand where imaging comes into play should you need treatment to see how it's going. And we're also before we're done going to talk about imaging for women who have been treated for breast cancer and want to make sure that they have the lowest risk monitoring to see if a recurrence might occur and catch that early as well.

By the way, if you want information about the Mammovan that the Seattle Cancer Care Alliance has, you can simple call this number, 206-288-7800. 206-288-7800.

We'll be back with Dr. Peter Eby, breast radiologist at the Seattle Cancer Care Alliance, right after this.

Andrew Schorr:

Welcome back to Patient Power sponsored by the Seattle Cancer Care Alliance. During Breast Cancer Awareness Month now in 2009 we're talking about where radiology comes into play, imaging to first of all screen for breast cancer, also to follow-up exams. What about if a woman is at higher risk because it's in her family? We were just discussing that. And then what about if a woman needs treatment? Where does imaging come into play there? And we're visiting with Dr. Peter Eby, who is an assistant professor in the department of radiology at the University of Washington and the Seattle Cancer Care Alliance.

Dr. Eby, so let's say a breast cancer is discovered. Now, typically a woman might have surgery, but there could be other treatments as well, systemic therapy. Where does imaging come into play there to see whether the treatment is effective?

Imaging and Determining the Most Effective Treatment

Dr. Eby:

You're right about the fact that in the past surgery has been the primary treatment to breast cancer. Most patients would have surgery first and, if necessary, some other treatment such as chemotherapy or radiation therapy second. However, our chemotherapies are getting better, and we're now moving towards a treatment strategy where patients are given their chemotherapy while the cancer is it still in the breast, and then we watch with imaging to see if that chemotherapy is working. So it's actually not only an opportunity to shrink the tumor, but it's also an

opportunity to see if we're using the right drugs because we have so many different drug options. And it turns out that some cancers behave differently than other cancers. Some cancers respond to different drugs differently.

Well, radiology then of course becomes very critical in that type of a treatment strategy because we need to figure out if we're having the desired effect. And we can use a number of different modalities. Typically what we use is either ultrasound or MRI or what's called PET, which stands for positron emission tomography. Each of those works a little bit differently. Each of those has their advantages and disadvantages, and each of those can be used to monitor a tumor to see if it's responding the way we want it to, meaning shrinking.

Andrew Schorr:

Now, my understanding is PET scanning, and a lot of it's investigational, and we've done a program with one of the leaders in the field, Dr. David Mankoff. I urge women to listen to that program. , where you're using some new techniques to try to monitor the almost biological process of the cancer cells you're trying to kill. Tell us a little bit about that PET scanning because many people are not familiar with it.

Dr. Eby:

Well, PET scanning, as you pointed out, does take advantage of basically how metabolically active a tumor is, as opposed to ultrasound and MRI where we're essentially getting very good images of tumor size and shape. We can tell from ultrasound and MRI those types of things, but we don't get a lot of information about tumor function. And what PET scan does is it uses a special radio tracer that's attached to sugar. And the reason why it's attached to sugar is because that is how our cells are working. They are all metabolizing sugar. And basically what happens is the radio tracer is injected, things that are very metabolically active, like tumors that are dividing rapidly and growing rapidly, they will take up that sugar, and then the radio tracer gets trapped inside those cells. And then we can use what's called a gamma camera to take images and determine how much sugar is in that tumor, which reflects how active it is.

So what happens is patients who have cancer, typically a larger cancer detected will have a PET scan before they start treatment, and then they'll have some treatment, and then they'll have another PET scan. And what we hope to see actually is that the level of metabolism goes down as the chemotherapy kills those cells and so the amount of sugar that is trapped inside the tumor decreases over time.

Andrew Schorr:

So the point of this is that you can make quicker decisions now, and you were talking about imaging during treatment, on whether a woman is on the right treatment and how that treatment is doing.

Dr. Eby:

That's exactly right. And the reason why making those decisions quickly is important is because of two things. Obviously, we want to be using the right drug for the patient so we can get control of her tumor fast. But we also know that

these drugs are expensive. We also know that these drugs have side effects. And it makes sense to everybody to be able to determine early whether or not we're using the right drug especially if it's going to cost a lot of money or if it's going to have some serious side effects. And if it turns out that it's not working then we can switch to something else earlier in the patient's treatment and find something that is working.

Andrew Schorr:

Let's talk about predicting outcomes, if you will. So a woman says, if you can look in my body with all this imaging what can I hope is going to be the result for me. So tell us about how you counsel people on that. Because even if the cancer disappears, if you will, women always worry a recurrence, but first they want to beat the cancer the first time. So where does the imaging come into play in the dialogue even between doctors of different specialties at the Seattle Cancer Care Alliance to help give a woman some knowledge of what her future may be?

Predicting Outcomes

Dr. Eby:

Well, at the most basic level what we do with imaging is try to determine what we call the extent of disease or how much cancer is present. How big is the primary tumor? Has it spread from the breast or the lymph nodes, or has it gone beyond the lymph nodes to other sites? And those are very important parameters for counseling patients as to what are their chances and how can we give them hope about getting them cured. For example, as I said earlier, if we can find a very small tumor, a one centimeter tumor, on the screening mammogram and look at the lymph nodes and see that they're normal, then I can say to that patient, yeah, this is a breast cancer, but we found it very early and from what I can see, given this size and the fact that it doesn't look like it's spread anywhere, we have a very high rate of cure.

In other scenarios where the tumor is bigger or it's spread to lymph nodes, then again we want to have that conversation, and we want to then use these other modalities to follow it and see for example is it responding the way we want it to and again sort of update patients as we go along the treatment plan to say, yes, we're going in the right direction, or, no, we're not going in the right direction, so now we need to change therapy and keep them a part of the conversation. Keep them a part of the process so that they know what's going on so that they can be hopeful about how things are going to turn out.

Andrew Schorr:

Tell us how it works at the Seattle Cancer Care Alliance, the communication between breast specialists. So you're a breast radiologist. There are medical oncologists, there are breast surgeons, pathologists who specialize in breast cancer. A lot of groups come together. Do you all talk? Because at some clinics around the country maybe there isn't that communication. It seems more fragmented. How does it work at the SCCA?

Individualized Approaches at the SCCA

Dr. Eby:

I think it is very important to have this kind of open communication between all the people that are going to be working with any one patient. At the Seattle Cancer Care Alliance what happens is once we've made the diagnosis, usually in radiology, usually by a needle biopsy, we then refer the patients to a special appointment and a special clinic called the breast cancer specialty clinic. The patients will come in for an afternoon, and before they're seen by any of the physicians the physicians all get together. So it's the radiologist, who knows the imaging and extent of disease; the pathologist who has looked under the microscope at the tumor and has some very specific data about the tumor type and how active it is for example; then the medical oncologist, who will handle the chemotherapy. There's a radiation oncologist who will potentially handle the radiation therapy. And there's a surgical oncologist who will perform the operation when it's time.

And these are the key players in a patient's treatment. And it's very important because we all get together in the same room at the same time and discuss every single aspect of the patient's past history, current status with this breast cancer, any family history that might be important, and come up with what we hope is a unified plan for that patient's care so that everybody is on the same page, so that the patient gets the same information from all of the doctors that are involved and can get all that information typically on the same day, in one afternoon.

The other model is a patient for example who sees the radiologist, then goes to see the surgeon, then goes to see the medical oncologist, then goes to see the radiation oncologist all on different days. They may not have a regular schedule for communicating, and they may not be able to, they may disagree for example about how to treat that patient, in which case there can be some delays in care or multiple other visits for that patients.

So we like this model. We think it provides a very individualized plan for patients' care, and we think it is very efficient as far as getting them to see everybody at the same time.

Andrew Schorr:

Oh, it sounds good to me. Dr. Eby, let me just recap a couple of things for the ladies listening. First of all, have mammography at the appropriate times for their age and their family history. And do it annually. Don't stop. And then beyond that is ideally have it where the images will be read by a breast radiologist, someone who specializes in this. And then should they need care where you have a team, multispecialty team really actively talking, maybe debating, as he said, sometimes about your case, and get the smart people together and also make it most efficient for you.

Now, let me back up for just a second. Women have heard stories of where mammography missed a cancer, and we talked about the art of radiology, and I think that certainly lowers the risk, but we've also heard over the ages about a

woman's intuition, if a woman just is concerned or doesn't feel right even if the mammography she had was negative, what do you counsel women? What should they do?

Dr. Eby:

Those are excellent questions, and I think it's important to realize that while mammography is the best test that we have and we have data that show that woman who get screened are more likely to survive their cancer, we also know that mammography is not perfect. The data show that for whatever reason, whether it's that the cancer wasn't included on the mammogram or wasn't visible on the mammogram or the radiologist just doesn't see it, cancers are missed on mammography. It's a fact.

What we tell patients or what we hope patients do is that if they have any concern or question about something that's going on in their breast rather than get a screening mammogram we tell them to come to the SCCA for a diagnostic mammogram. We'll do all the standard views, and then we will do some focused imaging on the area that they're concerned about, additional spot mammographic views. And then we'll do ultrasound as well. Now, if that mammogram and the ultrasound combined appear negative at a place for example like the SCCA where we specialize in breast imaging and all the breast imaging is done by breast imaging specialists, we tell them that there's a 99 percent what we call a negative predictive value, meaning that there's a less than one percent chance that there's actually something there that we're not seeing. So it's a very tiny miss rate.

What we also tell them is that if they are still concerned they should follow up with their primary care provider or follow up with somebody who is a breast health specialist and keep monitoring that area and if it changes to come back, and we will take a look again.

Andrew Schorr:

Well, it sound like you do a lot to allay the concerns that a woman might have. And it seems like it's an active dialogue. First of all, regular checkups, an active dialogue with your primary care doctor, regular mammograms, certainly know your family history because you said you ask about that. So if you weren't clear about what happened to a certain family member and even also a history of ovarian cancer, that can come into play for some women too, right?

Dr. Eby:

That's correct. We know that ovarian cancer in some families is also associated with breast cancer, basically based on breast cancer gene mutation, so we will ask those questions as well about ovarian cancer.

Andrew Schorr:

Well, we've covered a lot of ground, and I think it's so important to remind women about regular imaging, wonderful service the Seattle Cancer Care Alliance has with the Mammovan, and I hope that woman will take advantage of that if they're in the Seattle area. But beyond that, wherever you hear this, I think we've given you

some good guidance from Dr. Peter Eby from the Seattle Cancer Care Alliance about things you can do, where you have imaging, follow up, and should you need treatment the monitoring and communication among doctors that can go on.

Dr. Peter Eby from the Seattle Cancer Care Alliance and a breast radiologist, thank you so much for being with us on Patient Power.

Dr. Eby:

It's my pleasure.

Andrew Schorr:

Well, this is what we do time after time is connect you with leading experts from the Seattle Cancer Care Alliance, and you can hear how hard they're working to really do the very best job in fighting cancer and hopefully by giving you screening information where the answer in breast cancer is typically negative, that there's not breast cancer there. But if you should need treatment certainly they are monitoring it and getting their heads together to give you all the best care.

I'm Andrew Schorr. Remember, knowledge can be the best medicine of all.

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