

Transcript Details

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Radiologic Diagnosis of Breast Cancer

You are listening to ReachMD XM160, The Channel For Medical Professionals. Welcome to Advances in Medical Imaging, a program discussing the latest innovations in clinical radiology and imaging technologies. Your host is Dr. Beverly Hashimoto, Ultrasound Section Head of Virginia Mason Medical Center in Seattle, Washington.

For decades, mammography has dominated the detection of breast cancer. In the last few years, many improvements in breast imaging have been introduced into medical practice. Have these new techniques changed this long-standing diagnostic paradigm. With me today is Dr. Dawna Kramer. Today we are discussing the radiologic identification of breast masses. Breast cancer has become one of the most high profile diseases of our society. This is due to the fact that breast cancer is extremely common. American women have about a 12% lifetime risk of developing breast cancer. This high prevalence has resulted in patient anxiety and has fostered an increased need for physician understanding of this disease. Dr. Kramer is former Deputy Chief of the Department of Radiology of Virginia Mason Medical Center in Seattle, Washington. She is currently the Radiology Quality Assurance Officer and Section Head of the Radiology Department Patient Access Area. She has about 20 years of clinical and research experience in breast cancer imaging (01:30). Because of her administrative role, Dr. Kramer has a unique perspective. She is not able to discuss the academically correct methods of identifying breast masses, but she is also able to discuss the practical cost-effective aspects of breast mass detection.

DR. BEVERLY HASHIMOTO:

Thank you Dr. Kramer for being able to discuss this topic of breast masses. I guess my first is the same one that I started with and that is what is the role of mammography today in detecting breast cancer and breast masses.

DR. DAWNA KRAMER:

Well mammography is still the first and foremost method in detecting breast cancer. It is still the only thing we use for screening patients on a regular basis and it is still the way that most breast masses are detected. So it is still the first thing in our arsenal, but ultrasound has really joined the forefront in probably the last 10 years or so, I think.

DR. BEVERLY HASHIMOTO:

So when do you mammography and ultrasound?

DR. DAWNA KRAMER:

Well mammography we use for screening patients as we said, but when we detect something on a screening mammogram, often we will bring the patient back in, do some extra mammographic pictures and then look at the area with ultrasound or if the patient presents with a breast mass, we will do a diagnostic mammogram looking at the area of concern and then almost always look at those patients with ultrasound as well.

DR. BEVERLY HASHIMOTO:

So if the breast mass is not seen by ultrasound for example if it is palpable, what are the next steps?(03:00)

DR. DAWNA KRAMER:

Well it really depends on the level of suspicion. Most of the time a breast mass that we are evaluating is just a prominent ridge of tissue or an area that contains more glandular tissue than the rest of the breast and we can be pretty satisfied that there is really nothing there to worry about. The negative predictive value of ultrasound in a palpable abnormality is very high, but if there is a very suspicious finding or finding in a very high risk patient, then we may want to send the patient back for evaluation by their provider or send on to a surgeon to let the surgeon assess the area and biopsy it by palpation if that is felt to be warranted.

DR. BEVERLY HASHIMOTO:

How does digital mammography interface with the technique of regular mammography that is done today, is it better or worse in terms of detecting masses?

DR. DAWNA KRAMER:

Well most of the literature says that they are just about equivalent. Digital mammography basically uses the same technology. We are still using x-rays, we still detecting the x-ray that is transferred through the breast, but it is the detection method that is a little bit different. We use a digital detector with digital mammography rather than the old film screen combination. So it is our ability to manipulate the image and to bring out the inherent contrast. It is probably, digital mammography is probably slightly better (04:30) in women under 50 and women with very dense breasts and in perimenopausal women just because of that ability to increase the contrast, but if the alternative is not having a mammogram versus trying to find somewhere to have a digital mammogram, a film screen mammogram will still detect a vast majority of things that we will find on digital mammogram.

DR. BEVERLY HASHIMOTO:

Now when we talk about these new modalities, certainly one of the things we think about is breast MRI. What is the role of MRI in the detection of breast masses?

DR. DAWNA KRAMER:

Well right now the use of breast MRI has been recommended by the American Cancer Society in patients who have a significantly increased lifetime risk of developing breast cancer and that really means women who have certain very unusual syndromes, women

who are proven to be carriers of either of the 2 breast cancer genes, women with a very strong family history. The problem with MRI is that it is #1 it is very expensive, it is very sensitive, it finds a lot of things, but it is not very specific. So many of the things that it finds are not cancer and in patients who are very low risk of developing cancer, the majority of the things that we find with MR require an additional workup often to the point of biopsy will end up being benign, so we need to select our patients for breast MR very carefully (06:00).

DR. BEVERLY HASHIMOTO:

At this point then the main screening modality is obvious our mammography and then we talked about MRI. Is there any role for ultrasound in screening?

DR. DAWNA KRAMER:

Well there are papers that suggest that we will increase our detection rate of breast cancer again particularly in women with very dense breasts by using screening breast ultrasound. The difficulty there comes in both delivering the technology to the patients, I mean the logistics of screening breast ultrasound in a huge population really haven't been dealt with because breast ultrasound requires hands-on real-time scanning by people who are trained in looking at the whole breast real-time and then taking images of just what looks abnormal. We also don't have great criteria for what is suspicious on a screening breast ultrasound. We know what to do with the mass that we can feel or that we can see on a mammogram, but the criteria are completely different when you are talking about screening a breast with ultrasound.

DR. BEVERLY HASHIMOTO:

For those of you who are just joining us, you are listening to *Advances in Medical Imaging on ReachMD, The Channel For Medical Professionals*. I am Dr. Beverly Hashimoto and I am speaking with Dr. Dawna Kramer. We are discussing the radiologic identification of breast masses.

So you were discussing about some of the findings or the difficulty in identifying whether (07:30) a mass is abnormal or not on modality, perhaps we could go back and review what are the accepted criterion for a suspicious mass on mammography?

DR. DAWNA KRAMER:

Well you have to remember that really the target for ultrasound has been be as certain as possible that a mass is not cancer. So basically you are saying these are the features of a benign mass and basically that is smooth, well-defined margins, we are looking for a mass that is wider than it is thick, we are looking for the absence of shadowing from the mass, very specific ultrasound criteria, but those criteria are designed so that we never miss a cancer and there are lots and lots of benign masses that don't fulfill all the criteria we require to say that they are benign. So when you are looking at a mass you found on a mammogram, if it has all benign features, then we feel pretty comfortable following it with ultrasound, but if we are screening a breast, many of the benign findings we will find in that breast are not going to fulfill all the criteria to be a benign mass and if we continue to use those criteria, we will be biopsying a lot of benign abnormalities in the breast and we don't want to do that and patients certainly don't want to have a needle stuck in their breasts if it is not going to really improve their outcome.

DR. BEVERLY HASHIMOTO:

So what you are saying then is that in order for us to feel comfortable that something is noncancerous, then we would expect that it would look (09:00) benign both on mammography and on ultrasound, is that correct?

DR. DAWNA KRAMER:

The criteria by mammography have been proven for a long time, so a smooth, well-defined mass that is either there on an initial screening mammogram or in retrospect has been there and is stable, we can follow on the basis of the mammographic criteria alone, because we have tens of thousands of patients that have been followed for years and we know that those criteria are benign. We have not quite established the same criteria with ultrasound, but again this is when we are using it in a diagnostic capacity not in a screening capacity.

DR. BEVERLY HASHIMOTO:

So the difficulty becomes if we see a mass on ultrasound and we don't have any kind of mammographic correlate, the problem is then what to do, that is the issue with screening, is that correct?

DR. DAWNA KRAMER:

Exactly right. I mean the way that I think of it is when you are doing a screening breast ultrasound; you are looking for something that looks like cancer. So you are trying to pick out the things that look malignant. When you are doing a diagnostic ultrasound, you are trying to prove that the finding is benign by all criteria and so it is a completely different way of coming out a breast ultrasound.

DR. BEVERLY HASHIMOTO:

The problem then we are facing in terms of screening when we look at all the modalities is that first of all, all of them have very different criterion and unfortunately many a times, they don't overlap. The same lesion isn't seen on multiple modalities, is that the problem and sort of what do we do about them?

DR. DAWNA KRAMER:

Yeah, that is exactly right (10:30) and we don't have a long history in applying these techniques to big populations in seeing how often are we going to recommend that a patient has a biopsy and how often is that biopsy going to show cancer. We have very well-established criteria with mammography. We know how often we can expect a patient to be called back from a screening mammogram, how likely we are to find the cancer, how many benign biopsies we do for every malignant biopsy, but we haven't established those things yet for ultrasound and MRI.

DR. BEVERLY HASHIMOTO:

So what is your recommendation for women for example who are young, who are under the screening age, but perhaps do have a very high risk. Are they still in the category of having mammography or should they be having ultrasounds particularly if there is a palpable lump.

DR. DAWNA KRAMER:

Well first I think that they need to establish that they really are at high risk. Lot of patients perceive themselves at being at a high risk to have breast cancer when really their family history is not sufficient to really put them in the high risk category that we would routinely use MR for say 20 to 25% lifetime risk. So really the first thing they probably need to do is, sit down with somebody who is really qualified to help them assess what their risk really is. We have given that role to a nurse practitioner who is a genetic counselor to deal with patients about that, so then they can sort of balance their lifetime risk (12:00) with the risk of all the anxiety that can be provoked by mammogram, MRs and all of the attendant testings. But we do recommend that patients have their first screening mammogram 10 years before the youngest person in their family developed breast cancer. So if your mother had developed breast cancer at 40, you should probably start screening mammography at 30.

DR. BEVERLY HASHIMOTO:

Well this has been a very interesting discussion about the radiographic diagnosis of breast cancer. My thanks to Dr. Dawna Kramer who has been our guest. We hope that you have enjoyed the discussion. Be sure to visit our web site at www.reachmd.com now featuring pod casts of this and other featured series. Thank you for listening.

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