

**Reducing Need for Re-Excision in Treatment of Breast Cancer
With Dr. Andrea Madrigano Rush University Medical Center
An Empowered Patient Podcast Published April 1, 2020**

- Karen Jagoda: Welcome to the EmpoweredPatientPodcast.com show. I'm Karen Jagoda and my guest today is Dr. Andrea Madrigano. She's a general surgeon with an expertise in breast surgery at Rush University Medical Center in Chicago, and a new 3D technology that can improve outcomes. I want to welcome you to the show today, Andrea. I really appreciate you taking some time out of your busy schedule.
- Dr. Madrigano: Thank you so much Karen, for having me. This is a great topic for women with breast cancer to learn more about.
- Karen Jagoda: Let's just talk a little bit about what re-excision means, and what percentage of breast cancer patients require a second surgery to remove lingering cancer cells.
- Dr. Madrigano: Diagnosis of breast cancer, oftentimes surgery is done to get the cancer out of the body and learn more about it so that we can give them treatments to prevent it from coming back. The two most common surgeries for breast cancer are either a lumpectomy, which means just taking a bit of breast tissue out with a rim of healthy tissue around it, or a mastectomy, which means removing the entire breast. To save the breast, for an early-stage breast cancer, oftentimes need a second operation called a re-excision to make sure there's adequate normal tissue around where the tumor was taken. Unfortunately, in the United States today, about 20% of women, or one in five women who undergo breast conserving surgery will need a second operation.
- Karen Jagoda: How does that compare to, say, 20 years ago?
- Dr. Madrigano: 20 years ago, unfortunately, women didn't have collaboration or a mastectomy because we didn't know that saving the breast or doing a lumpectomy gave the same survival as removing the entire breast.
- Karen Jagoda: What has changed over the last 20 years? Is it the imaging technology that has given doctors like yourself a more granular view of what you're working with?
- Dr. Madrigano: Clinical trials have showed us that, over time, we know that more surgery doesn't help a woman do better, meaning a mastectomy doesn't help a woman live longer than a lumpectomy. What's really advanced over the last 20 years is our chemotherapy, our radiation techniques, and our imaging technique. So it's pretty much everything that's gone into the care of breast cancer that has allowed us from taking an entire breast and the chest wall muscles and multiple lymph nodes, which left women very disfigured, to take out a very small amount of breast tissue. We know that radical surgery and the lumpectomy can give a woman the same survival.
- Karen Jagoda: So, let's talk a little bit about this 3D technology. People who listen to this podcast know I'm always interested in the conversion of technology and

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healthcare, and I was really intrigued with this idea of an advanced imaging technology being used to find and, sounds like treating breast cancer. So can you tell us a little bit about this Mozart System by Kubtec Medical?

Dr. Madrigrano: Right. So there's lots of different ways for a surgeon to go into the operating room and reduce the risk that they're going to have to come back for a second operation. Some people just take a really big lumpectomy specimen, which would leave a breast, if we take a lot of breast tissue out, it's going to leave the breasts uneven. Then, some people choose to take six extra pieces, one from each side of the cavity, which also leads to more tissue being removed and possibly a poor cosmetic result.

Dr. Madrigrano: Thankfully, at Rush University Medical Center, we have invested in a technology whereby after the lumpectomy, we take enough tissue out, but we try not to be overly generous. We have the Kubtec Mozart in our operating room, which basically means is we take this piece of tissue out of the breast, we put it in the Kubtec Mozart and it takes 3D slices of the lumpectomy specimen in the operating room, so we're able to look to see, is the cancer in the middle of the specimen? Is there some calcifications or abnormalities that go close to one side, the anterior, the posterior, left or the right side? While we're in the operating room, we're able to take a very small amount of tissue from that one shave margin, meaning we take a little piece from the side that looks a little bit close. Since I recently looked at the data of the 36 months prior to having this 3D tomosynthesis in my operating room to the 36 months after it, and my re-excision rates went down from 12% before we had the technology and now it's at 5%, which is way below national averages. We've also looked at the cosmetic result. We haven't had to take such big pieces. Cosmetic appearance of the breast has also significantly improved since we've had this technology.

Karen Jagoda: Basically, in the past you had to send the tumor to a lab, you had to sew up the patient, send the tumor to the lab, do the analysis, and then come back in if there was a need for a second surgery.

Dr. Madrigrano: Correct. Well, we would send the specimen to get a 2D mammogram so we could see through the skin of the chest wall, but that process adds a lot of time to the operation. If I'm able to put my specimen in this 3D mammography unit in my operating room, it takes about 90 seconds for me to get the results to know what piece I need to take back. Prior to having this, we would have to send it ... a person would have to come into my operating room, send it two blocks away, actually, to where our breast images were, they would take an X-Ray of the specimen and then call me to say, "Well, it looks a little bit close to one side, but we can't exactly tell you what side." That process could take anywhere between 30 and 40 minutes, so patients would have to stay asleep on the operating table and it would add a lot of length to the operation. And, it wasn't as accurate as the surgeon themselves seeing in real time what margin

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was close and having it be exact orientation to know which margin to take as a shave.

Karen Jagoda: This sounds like such a revolutionary technology. I'm just wondering how widely it's being used.

Dr. Madrigano: I know there are some other companies that offer a 2D imaging, where the surgeon has to put the specimen in the unit itself, but it's not as widely used because it's a newer technology. I think surgeons are learning and seeing the data of this Kubtec Mozart 3D tomosynthesis unit and are really impressed with how re-excision rates have reduced, as well as how the cosmesis of these women have improved using this technology. I'm not quite sure how many units are in hospitals nationwide.

Karen Jagoda: But can't you see this being sort of standard of care, sort of a point of care where it just makes the doctors smarter, makes the surgeon more efficient?

Dr. Madrigano: I can tell you it has significantly improved my personal efficiency and it's also improved the quality of the care I've been able to deliver. It's cut my re-excision rates in half. I'm now at 5%, so thankfully, very few women now need to undergo a second operation.

Karen Jagoda: So how does a patient know if their surgeon has this technology available to them?

Dr. Madrigano: So I think the name of your podcast, The Empowered Patient, by learning what technology is out there. Asking good questions when you're meeting with your surgeon for your consultation. Asking do they just do breast procedures, what are their re-excision rates, and what are the methods they use for reducing the need for a re-excision.

Karen Jagoda: Is re-excision something that's just sort of taken for granted by a lot of doctors, it's just part of the landscape? Or is there a really an aggressive attempt by most doctors to eliminate that second surgery?

Dr. Madrigano: Well, I think, as a surgeon, if I have difficult conversations I have to have with my patients because they say, "Well Doctor, why didn't you take it all the first time? Why didn't you do it right the first time?" It's really ... re-excisions are based on microscopic problems. Sometimes cells just come close to the border of the specimen. There's nothing for the surgeon to see at the time of surgery with their naked eye in the breast tissue itself. So it is something that will need to happen, but we just need to find ways to prevent it from happening too frequently. Like I said, we could have a 0% re-excision rate if everybody had a mastectomy or everybody had a huge lumpectomy specimen, but we also want to give a woman a nice looking breast, so we have to balance the cancer needs,

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but also quality of life afterwards, so leaving a woman feeling like herself and not disfigured.

Karen Jagoda: That seems like a good balance of needs for both the patient and the doctor because you certainly don't want the patient coming back and complaining that you didn't do enough. So, that seems like a very sympathetic and empathetic point of view. So, I'm just wondering, here in the time of the coronavirus, patients who have had breast cancer surgery, I assume they're a bit more vulnerable to the virus. Can you say anything about what patients should be aware of?

Dr. Madrigrano: I would think a woman with a new breast complaint needs to contact their doctor. Right now, a lot of doctor's offices are trying to do tele-visits, meaning talking to the doctor over either video or the telephone. Many breast imaging facilities are still open for people with new acute issues. A woman with a current diagnosis of cancer, hospitals are still giving chemotherapy and radiation treatments, but we're really trying to limit exposure. So, I think people who are currently getting cancer treatment or have had a diagnosis of cancer need to do what all Americans are doing -- stay inside, avoid crowded places, practice social distancing, so that hopefully we can flatten this curve so that we can get back to our day-to-day lives, and most importantly, wash our hands. If you're sick, stay away from sick people and stay home.

Karen Jagoda: Now, as a doctor in a hospital, what are you doing to make sure that you stay healthy and are able to still provide care for others?

Dr. Madrigrano: Recall that there was a [inaudible 00:10:52] my clothes to work. I wore scrubs in the operating room and as soon as I came home, I left my clothes in the garage and took a shower. So, and I'm washing and washing and washing my hands, but we do still need to take care of our sick and most vulnerable patients. I'm trying to stay well and practice social distancing so I can be there for my patients, as well as, most importantly, my family.

Karen Jagoda: So before I let you go today, I just need to ask you, how did you find yourself becoming such an expert in breast cancer and in breast cancer surgery?

Dr. Madrigrano: So, I did a general surgery residency. I did a breast surgical oncology fellowship at Stanford. I'm now part of a multidisciplinary cancer team at Rush. We have medical students. We have residents. We have multidisciplinary tumor boards. I read the literature and I just try to learn. I've been in practice now for over a decade. Over this decade, the way we do surgery and how I approach surgery has drastically changed, which keeps it exciting. We now focus on trying to get patients to their first treatment as quick as possible, but as well as doing cancer operations where we really treat the cancer but really leave them with a good

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oncoplastic result, which means a good cancer operation with a good cosmetic outcome so that they look and feel like themselves.

Karen Jagoda: I get a sense that you're very optimistic about the developments in this space. So women, men even, who are suffering from breast cancer, who are worried about future treatments, are you thinking there's more good things on the horizon to make your job even easier and patients recover even faster?

Dr. Madrigano: I think the development in the medical oncology realm, with targeted therapies, immunotherapy, are going to reduce the risk of women having to experience metastatic breast cancer and keeping those women and men with metastatic breast cancer alive longer with less side effects. So, I am very optimistic.

Karen Jagoda: Thanks to my guest today, Dr. Andrea Madrigano, an experienced breast surgeon at Rush University Medical Center in Chicago. You can follow her on Twitter @M-A-D-R-I-G-R-A-N-O_A-M. I'm Karen Jagoda and you've been listening to the EmpoweredPatientPodcast.com show. Follow me on Twitter @KarenJagoda, like us on Facebook at Empowered Patient Radio. Thanks for listening, and we'll see you next time.



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