YALE CANCER ANSWERS

Breast Cancer

Reconstruction for Women with Breast Cancer

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Welcome to Yale Cancer Answers with doctors Anees Chagpar and Steven Gore. I am Bruce Barber. Yale Cancer Answers features the latest information on cancer care by welcoming oncologists and specialists who are on the forefront of the battle to fight cancer. This week, it is a conversation about surgical reconstruction options for breast cancer patients with Dr. Tomer Avraham. Dr. Avraham is an Assistant Professor of Surgery at Yale School of Medicine, and Dr. Chagpar is an Associate Professor of Surgery and the Assistant Director for Global Oncology at Yale Comprehensive Cancer Center.

Chagpar Tomer, let's about breast reconstruction. Years, decades ago, back in the 1960s when women were diagnosed with breast cancer, they really had no options. Their option was have a mastectomy, or nothing. And it has been the work of a lot of advocates who have said, no, quality of life is important, body image is important, a sense of feminism and sexuality and so many other things that come with having a breast mound are important to breast cancer survivors and so we started to see an increase in breast reconstruction. Talk to us a little bit about the options that women now have in terms of breast reconstruction.

Avraham I think you are a 100% correct and this required a little bit of cultural change from the view that breast reconstruction was cosmetic and not something that was 100% necessary to the idea that it is reconstructive, and is worth investing resources and things really changed in the 1980s as technologies improved, and then again in the 1990s. In 1998 a law was passed that, without getting into the legalities of it, basically states that insurance companies are mandated to cover breast reconstructive procedures for women that have had mastectomy.

Chagpar And that is something that a lot of women do not know, right? A lot of women think "oh! My gosh, I mean you are talking to me about all of these reconstructive options, but what is that going to do at the end of the day in terms of my out of pocket costs?" So, that is a really important point.

Avraham Correct. And the thing that preceded that, that made all this possible, was study upon study showing that breast reconstruction is safe. So, you can throw out the baby with the bathwater. The women that have had mastectomies have cancer for the most part and they need to be treated as such and need to be cured of their cancer and nothing can get in the way of that. So, it is important for us to demonstrate that breast reconstruction could be done safely and in coordination with the breast oncologists in a way that was safe for women, and I think that has been well established and I see women all of the time that come in and see me and feel guilty about even considering a breast reconstruction where they feel like they should be happy to just have treatment for their cancer and be able to live full long lives, and the reality is that the two things can be done at the same time. They are both achievable.

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In terms of breast reconstruction, there have been a lot of advances and when I talk to patients for breast reconstructive consult, I go through it in broad categories and then we drill down on things that are important to them. So, the first option when it comes to breast reconstruction is to have no reconstruction. Reconstruction is not 100% necessary. You do not need a breast to live, but if it is important to you, that is a legitimate thing and it is important to us and that is what we do all day every day. So, if patients come to see me, generally speaking, they are interested in breast reconstruction, and then breast reconstruction can broadly be broken down into two categories, one involves using implants and one involves using your own tissues. And even within those, you can break it down further and everything has advantages and disadvantages, and that is sort of how I conceptualize it.

Chagpar Let's talk about those broad categories, because I think that there are a lot of issues that people need to consider, a lot of misconceptions out there, and a lot of new techniques that have really come to fruition in the last several years, several decades, but that are really starting to come into practice now. When we think about implant-based reconstruction, some people think that they can get an implant right away and that potentially is an option. But many other patients will often have a tissue expander placed first. Talk to us a little bit more about that whole decision-making process, how you figure out what is right for a given individual, whether they go direct to implant, whether they do a tissue expander, whether it is above the muscle, below the muscle, what kind of implant and so on. People think okay I am going to get implant, but it is a lot more complex than that.

Avraham Right. And what I tell patients is that for the majority of patients getting an implant actually involves two surgeries. The first surgery which is done at the time of mastectomy for most patients is tissue expander, which is a temporary implant and what happens is once the mastectomy heals, they come into the office and that tissue expander is filled sort of like a water balloon, it is filled usually with salt water, with saline, and what that does is that stretches the remaining skin of the breast until there is enough skin to come back and put in a more permanent implant. Now, over the last few years, a technique called direct-to-implant reconstruction has gained popularity and for select patients this is a very good idea. Specifically, I think it is best for patients that have nipple-sparing mastectomies and for patients that have somebody that does a mastectomy that have very specific properties. What I mean by that is sometimes a mastectomy can be on the thicker side; however, some women are very thin and the mastectomy could be on the thinner side and the blood supply to it may not be as good. And if you put a big implant underneath that, you are now putting pressure on it and increasing the probability of wound healing problem.

Chagpar The other thing with the whole implants is that there are now textured implants and not-textured implants and there was a big flash in the news recently about implants causing cancer, can you talk a little bit about that?

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Avraham That is obviously big news and it is something that we keep a very close eye on and are very concerned about. Like I said before, as reconstructive surgeons, the last thing we can do is impact the cancer outcome for the patient and doing anything that can potentially increase the risk of cancer is something that we worry about. So, the data is slowly coming in. There is a potential risk of a certain type of lymphoma that has been reported with some breast implants. Now, this is very rare and it has only been recorded to date as far as I am aware with textured implants. And those are for the most part the shaped implants, sometimes people refer to them as the gummy bear implants, and those implants gave a very good cosmetic result; however, the risk of developing this lymphoma with them is now believed to be as high as 1 in 30,000. So, while that is still low, it is not 0 and it is certainly making me reconsider the idea of putting in that type of implant and in my practice, I have moved more into the smooth, round implants with the understanding that it may be harder to achieve an ideal cosmetic result, but I just feel it is safer.

Chagpar And so, there are lots of things to consider in terms of the whole tissue expander implant category, what about this using your own tissue?

Avraham I have to admit, I have a bias towards operations that use your own tissue and that is a bias based on training, it is something that I specifically train to do. It is an interesting operation to me and in many ways I think can provide, for a select group of patients, superior outcomes. What I mean by that is that is often a more natural-looking and feeling reconstruction, nothing that is man-made can feel like human tissue, but when you use skin and fat from somewhere else in the body, that will look and feel like a breast. The other advantage is that some women are discomforted by the idea of having a foreign body in them, so having an implant of something that bothers them from a psychological point of view and then the last thing is that implants are not lifetime devices. So, the study showed that implants from this generation of implants are likely to have a problem that requires them to be replaced every 15 years or so on average, whereas your own tissue is your own tissue and that is your tissue for life, and especially as we are seeing with better screening techniques and with the discovery of certain genetic markers, women that are younger and younger being treated for breast cancer. So, if you are treating a 50-year-old woman for breast cancer and she is going to be cured of her disease, it is very likely that during the course of her lifetime, she will have a problem with her implant that requires it to be replaced. So, that is just something that a woman choosing an implant needs to know in advance.

Chagpar Is there also an issue with infection? A lot of people think that the foreign body of an implant is associated with a higher infection rate than using your own tissue. Is that true?

Avraham It may not be associated with a higher infection rate, but when you have an infection, it is a bigger problem. So, if you have an infection and you have used your own tissue, that is

generally not a big deal. The vast majority of those can be treated with outpatient antibiotics and they resolve on their own. If you have infection of an implant that is a foreign body, you have to understand the way antibiotics work is that they get into your bloodstream and then they go to the site of infection to treat the infection. A foreign body, an implant, a piece of silicone does not have blood supply, so antibiotics cannot effectively get there and treat that infection, and a seriously infected implant generally speaking has to be removed and that could be devastating because our goal is for women to never see themselves partially reconstructed and not to feel deformed, and a woman that has gone through surgery to do that and then has to have her implant removed can be devastated.

Chagpar And how often do implants deflate? One of the questions and fears that I think patients have is you put this water balloon or silicone balloon in me, and what are the chances that it ruptures? Certainly, with the earlier generation of implants that was a real concern for a lot of people.

Avraham And it is still a real concern. It depends on your time horizon. Over a long enough time horizon, any mechanical device will eventually fail. I think the best way to conceptually think about it is an average of 15 years. So, a woman that is 50 can expect by the time that she is 65 or in her late 60s to have a problem such as a leak that requires the implant to be removed. And that is a real issue because people are living longer and longer, and they are living higher quality of life for longer periods of time and a 65-year-old woman today is very likely to be vital and still care about the appearance of her breasts. And then 15 years after she had a mastectomy, you require more surgery, it may be difficult.

Chagpar In terms of autologous reconstruction, using your own tissue, where do we get tissue from, what are the operations like, what are the pluses and minuses of different operations, how do you help patients figure that all out?

Avraham Again, there are many options. Traditionally, people have taken tissue from the back and then there was a transition to taking tissue from the belly and now with newer techniques, we are able to take tissues from the buttock or the thigh, either the posterior thigh or the inside of the thigh, but again the vast majority of patients are going to get tissue from the lower abdomen, and the reason for that is that you have to look at the patients that get breast cancer. Your typical breast cancer patient is a woman in her 50s or 60s, many of them have had children and that means almost all of them have some extra tissue that they can give us in their lower abdomen, and so if you think of it as removing the same tissue as you would with the tummy tuck, except now we dissect the blood vessels through the muscle and we bring the tissue with its blood supply and transfer it to the chest and use that. So I would say that greater than 90% of women that have this type of operation use the tissue from their belly. Now again, there have been changes over the years, in the 1980s when this was

gaining popularity, this would require transferring the fat and skin from the lower belly along with the entire rectus muscle. The rectus muscle is the muscle that sits at the front of our belly and gives us, those of us that are lucky enough to have the six-pack, and over time that changed and newer techniques allowed to leave some of the muscle behind and take some of the muscle. And now the operation that we most commonly do is called the DIEP flap, and when we do that we leave virtually the entire muscle in place and just dissect the blood vessels through it.

Chagpar A lot of really cool advances in autologous reconstruction. We are going to learn a lot more about these different options, which one is right for a given patient, right after we take a short break. Please stay tuned to learn more information about breast reconstruction for women with breast cancer.

Medical Minute

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This is a medical minute about smoking cessation. There are many obstacles to face when quitting smoking as smoking involves the potent drug nicotine, but it is a very important lifestyle change, especially for patients undergoing cancer treatment. Quitting smoking has been shown to positively impact response to treatments, decrease the likelihood that patients will develop second malignancies and increase rates of survival. Tobacco treatment programs are currently being offered at federally designated comprehensive cancer centers and operate on the principles of the US Public Health Service Clinical Practice Guidelines. All treatment components are evidence based and therefore all patients are treated with FDA approved first-line medications for smoking cessation as well as smoking cessation counseling that stresses appropriate coping skills. More information is available at YaleCancerCenter.org. You are listening to Connecticut Public Radio.

Chagpar This is Dr. Anees Chagpar and I am joined tonight by my guest, Dr. Tomer Avraham. We were talking about surgical advances for breast cancer and more specifically for breast cancer reconstruction. Now, before the break, we started talking a lot about implants and tissue expanders and that whole aspect of reconstruction. And now, we are learning a little bit more about autologous reconstruction or using your own tissue. Tomer, you were talking about how techniques, particularly for using tissue from the lower abdomen have improved overtime. And this new technique, this DIEP flap where you take the tissue with the fat but leave the muscle behind is something that you are doing pretty routinely in your practice now?

Avraham We do it routinely. I would say that it is something that has gained popularity over the past decade. Dr. Bob Allen is a surgeon that described this first in the 2000s and late 1990s,

but it took a while to catch on because it is technically a complex operation, but it is now our go-to and I would say that 95% of our patients that get autologous reconstruction get this.

Chagpar What are the advantages of that versus the older operations that took the muscle?

Avraham It is a very good question. Those operations obviously took the muscle and more importantly we took the fascia. The fascia is the layer of the body that is connective tissue, that helps us separate the inside from the outside. And when that was removed, you would have the potential for all sorts of complications, such as a bulge in the abdomen or a hernia and also for physically active women and many women are even into their 50s and 60s now very physically active, they made such a difference if a significant piece of their abdominal muscle is removed.

Chagpar With this technique though, because it is so complex and because you need to sew these blood vessels with microscopes in the operating room, it is a longer procedure, isn't it?

Avraham It is a longer procedure, but we are getting better and better and faster and faster and I would say that for a two-sided procedure, bilateral procedure, in the past people talked about 12-hour operations, sometimes longer. And I think we are routinely now doing them under 8 and under 7 hours, so that is no longer the case. And I tell the patients that the goal is to make things as simple as possible, we are able to simplify things to the point where now patients are going home 2-3 days after their operation as opposed to going home a week after their operation and we really try to minimize the disruption to their lives.

Chagpar We talked a little bit about the upside, which is really getting a two-for -- a tummy tuck and a breast reconstruction at the same time. What are the downsides of the operation, what are the complications, the things that people should have their eyes wide open before they sign that piece of paper?

Avraham Absolutely. And it is a big operation and there are potential downsides and I always tell patients that before I undertake this with them, they need to be committed to it because I take responsibility for any problems that they have but they are the only ones that experience it, so they need to know what they are getting themselves into. So, the downside is you're making an incision somewhere that does not have a problem. The breast has a problem and now you are making an incision in the belly. You do have the benefit of losing that extra tissue, but if it is not something that bothers you, then now you are making an incision somewhere that did not bother you. The other major downside I think is increased downtime versus other techniques. I think that for most women, they can expect to miss 2-3 weeks of work after this operation and recuperating. And it is a very similar kind of recuperation to a tummy tuck. So, the belly may be tight, they may walk hunched over for a couple weeks, we

may ask that they lie in bed with pillows under their knees and under their head so they stay in a sort of a flexed position. And in terms of complications, the complication rates between implants and using your own tissues are similar, but the complication when you use your own tissues can be more devastating, in the sense that if you have a reconstruction using your own tissues and that fails, you have had a big operation and seeing it fail and needing more surgery can be troublesome to some patients. Fortunately, that is rare. Depending on the study that you look at, the risk for that is between half of 1% and 2%. So, I sort of split the baby and I tell patients that it is a risk of approximately 1.5%. So, 1 in 60 patients or 1 in 75 patients has a risk of that happening to them. We have been fortunate that, that has not been the case in my practice to date, but I am going to knock on wood and not mess with the gods, but it can happen. Fortunately, we do not see that often.

Chagpar Terrific. Now, at the top of the show we were talking a lot about the fact that there is more than just one autologous option. So, whereas 95% of using your own tissue comes from the belly and that is where most of us have plenty to spare, you now have other options for taking fat from other parts of the body. How do you make the decision of which flap is best for each woman?

Avraham A lot of it depends on body shape and body image and where women are tolerant of having scars or not. So, there are some women that are not candidates for using tissue from their belly, maybe they have had a tummy tuck and that tissue has already been removed or they are very thin and they do not have any excess tissue in their belly. But almost everybody has excess tissue in their thigh and in their buttock. And the go-to for us is tissue that comes right below the buttock, so it is sort of in the fold between the buttock and the thigh, and the reason that we use that as opposed to what has been described in the past which may be people have heard of the SGAP or the IGAP, which is tissue from the buttock itself is that it does not deform the butt as much, so it does not create as big of a divot in the butt and the scar is much more well-hidden because it is in a natural skin fold. Another good option for women that do not have tissue there is the tissue on the inner thigh and again almost everybody has some excess tissue there.

Chagpar And so, as you are going through in talking to patients and they are trying to figure out do I do the tissue expander? Do I do the DIEP flap? Do I take tissue from another part of my body? What kind of a calculus that drives that decision?

Avraham If I have a patient that is a good candidate of any of the options, the way I put it to them in an effort not to make decisions for them is that they need to think what their priority is. If their priority is to have the simplest reconstruction possible without any additional significant

downtime, then an implant might be a good option. If their priority is to have the best looking and feeling natural reconstruction that they can expect to be durable, then they should consider using their own tissues.

Chagpar And then deciding if you got a patient who says okay, well I would love to use my own tissue and I have got a lot, in almost any region that you could possibly want, how do you make that choice?

Avraham Well, it is just a matter of where you are tolerant of having incisions and scars. Using your own tissue from the belly, a lot of the time that ends up in the bikini line, so it is really not visible to anybody including and up to intimacy and wearing a bikini. On your hips or thighs or buttocks, it may be a little bit more revealed, particularly in bathing suits and something like that.

Chagpar Let's talk a little bit about intimacy and body image and so on. I think the other thing that people may not always have front of mind is the numbness that they have after surgery. Can you talk a little bit about that?

Avraham Yeah, that is a very important issue, and as a matter of fact, there was a New York Times story about this in the last year or two, by the New York Times health writer, and it talks about how the numbness that comes after mastectomy can really be surprising to patients. So, I talk to every single patient about this so they are not surprised. There is not much that I can do about it, but it is important that they know. The reality is that the majority of the nerves that give sensation to the nipple and to the breast skin run through the breast, and therefore, by definition are removed during a mastectomy. So, mastectomies tend to be numb regardless of reconstruction. Putting an implant under there is not going to improve the sensation. With using your own tissues, there is some data to suggest that over the course of years, there is some return of sensation in some patients and there are some techniques that we can do to improve the chances of this, such as hooking up nerves to the tissue that we transfer, but that is the best case scenario and I tell the patients to expect numbness over an extended period of time after a mastectomy and to consider the possibility that erogenous sensation may never come back and that is an important thing if a woman is dependent on nipple sensation for achieving orgasm and she has the option between a mastectomy and a partial mastectomy, something we refer to as a lumpectomy, then that is something that may come into play in her decision making. And then the other thing is beyond sexuality is personal safety. If the breast is numb, then you may not realize that you have hurt yourself. I have seen patients that have gotten very bad sunburns for examples, because they did not realize or they put a hot pack on and got burnt because they did not realize that it was too hot. So, it does require an adjustment and I talk to every single patient about it.

Chagpar It is interesting you talk about the nipple as well. I think it is important when we think about mastectomies, some patients are candidates for nipple-sparing mastectomies, but the

nipple in those cases is also numb and it does not function like a normal nipple in terms of its response to sexual stimulus or cold or anything, but I think the other piece that women need to know about breast reconstruction is that for many patients we take the nipple because all of the ducts of the breast go to the nipple and many cancers come from the ducts, and so there is oncologically some reason to take the nipple. What do you tell patients about nipple reconstruction as an option to complete their reconstruction after mastectomy?

Avraham Yeah, just to echo what you said, people look at a mastectomy and they say you leave the skin behind, why cannot you leave the nipple, and the reality is that the nipple is not skin, the nipple is breast. So, I 100% agree with you there. In terms of nipple reconstruction, we have very good options for nipple reconstruction. Usually, what we do is we take some of the tissue that is left behind either from the tissue we take from the belly or from the skin overlying the implant, we fold it up on itself and that creates a bump, a sort of nipple, and then we come back and we do a tattoo for the areola. The areola is the color part around the nipple and that is really great because often it can disguise the majority of the scars on the breasts and very often it is hard to even tell it is a reconstructed breast. Another option that women can consider is a 3D tattoo, that is not something that we offer as physicians, but there are tattoo artists out there that are expert at this and do a fantastic job. That often requires an out-of-pocket expense.

Chagpar And so, the other aspect that I think is important to consider and something that you mentioned was for some patients, they can have what is called a partial mastectomy, removing just part of the breast and many patients do not require reconstruction after that, but there is some thought of partnering the oncologic procedure with the plastics procedure, particularly in patients who perhaps need a breast left to kind of combine the two. Can you talk a little bit about that?

Avraham I think this is a very good option for women that require large resections. So, a large partial mastectomy, a large lumpectomy is a nice way of saying saggy or very large breasts, and then what we can do is we can design the incisions that are done for the lumpectomy as the same incisions that we would for a breast lift or a breast reduction, and what that does is first of all, it is a two-for and second of all, it fills in the empty space that would normally be left by a lumpectomy and there is the belief that after radiation, which is generally required with a lumpectomy, the shape of the breast will be better than if that space was left empty and allowed to scar in. There are other options as well even for women that are not very large breasted and desire a partial mastectomy or a lumpectomy that would deform their breast,

we can borrow tissue from their back and rotate it in to fill in the space. We can inject fat, we can sometimes put in implants at the time of lumpectomy, so there are a ton of options and they are all worth discussing.

Dr. Tomer Avraham is an Assistant Professor of Surgery at Yale School of Medicine. If you have questions, the address is canceranswers@yale.edu and past editions of the program are available in audio and written form at YaleCancerCenter.org. I am Bruce Barber reminding you to tune in each week to learn more about the fight against cancer here on Connecticut Public Radio.