

Scott Redding: Welcome to the 3Ps of Cancer podcast. Where we discuss prevention, preparedness, and progress in cancer treatments and research. Brought to you by the University of Michigan Rogel Cancer Center. I'm Scott Redding. We're here with Michigan Medicine plastic surgeon, Dr. Adeyiza Momoh to talk about breast reconstruction.

Scott Redding: Adeyiza is an associate professor in the department of surgery and is a residency program director for the plastic surgery division. He specializes in breast reconstruction with an interest in microsurgical reconstruction using perforator flaps. Welcome Adeyiza.

Adeyiza Momoh: Thank you. Thank you.

Scott Redding: Let's just kind of start off with when a patient has a mastectomy, what are the reconstruction options?

Adeyiza Momoh: So in today's day and age, there are quite a few options that are available to women who are undergoing mastectomy as part of their treatment for breast cancer. We talk about quite a few things. Usually, these consultations require a little bit of time.

Adeyiza Momoh: Here at the University of Michigan, there is a multidisciplinary breast care center. Where patients have the opportunity to meet multiple specialists ranging from their breast oncologic surgeons, to medical oncologists, radiation oncologists, social workers, and plastic surgeons. As part of the team.

Adeyiza Momoh: There's a lot of information patients get in these times and so we try to spend enough time to provide information in a simpler way as possible so that patients can absorb as much as possible. We also provide a lot of information in written packets that patients can take home and spend time going through and digesting. So the question related to the types of reconstruction is just one part of the conversation we have. But it's a good part of it.

Adeyiza Momoh: We try to do the best we can to provide as many options as is possible to patients given the specifics of their disease and what they're going to be going through for treatment, whether it's radiation therapy, chemotherapy. Given that we will provide in general all options that are available and then have the patient decide on what seems to work best for them and their lifestyle.

Adeyiza Momoh: The idea in this sense is to have a shared decision making process. Where we don't necessarily just tell patients what it is they're going to have, but give the option of choosing what seems to work best for them specifically.

Adeyiza Momoh: From the standpoint of types of reconstruction, I would usually tell patients that they range from implant-based forms of reconstruction, which are some of the simplest forms of reconstruction options that we provide. To purely tissue-based options of reconstruction, which tend to be the more complex way of

providing reconstruction.

Adeyiza Momoh: I say complex because it requires a certain amount expertise, but in centers like the University of Michigan where high volumes of these cases are performed, they end up being relatively straightforward because we have a lot of experience with these cases. From the standpoint of implant-based forms of reconstruction, one of the things I like to point out to patients is that to get a completed result with reconstruction, it's usually not a single procedure.

Adeyiza Momoh: With mastectomies or things like lumpectomies. It's typically one single procedure. You get the entire breast out or you get clear margins from excision of a tumor and you're done with the surgical procedure and move on to other aspects of your care. With reconstruction, I usually like to tell patients that it is more of a process than a single procedure. So every patient who's getting a reconstruction would anticipate that they may undergo two, three, sometimes four procedures to get from start to finish and the process itself could take as long as a year.

Scott Redding: Tell me more about these multiple procedures and I asked that because I've also heard that you can also get a reconstruction the same time you have your mastectomy as well.

Adeyiza Momoh: Yes. That gets into the subject of the timing of reconstruction. Reconstruction can either be initiated at the time of a mastectomy, which we term immediate reconstruction. Or it can be initiated after certain aspects of treatment have been completed. For instance, a patient can undergo mastectomy followed by chemotherapy and radiation and months later or even years later can then initiate the process of reconstruction and so we would consider that a delayed reconstruction.

Adeyiza Momoh: There are multiple reasons to either have an immediate versus a delayed reconstruction. But I would say in the United States today, most patients, especially with early stage disease if possible, are very interested in immediate reconstruction. Because I would imagine that most women don't want to live without a breast if they can avoid it.

Scott Redding: With that immediate reconstruction, you'd mentioned that it's a process and it could take a couple of surgeries and could take up to a year for it. Is that still the case of an immediate reconstruction as well?

Adeyiza Momoh: Yes, it's the case for immediate or delayed reconstructions because multiple things need to be done to get to a final results. So for instance, with the implant reconstructions that I mentioned, as some of the simpler ways to achieve a reconstructed breast. The stages could include at the time of the mastectomy, we would either place a tissue expander for stretching out skin and a soft tissue to accommodate an implant.



- Adeyiza Momoh: Or in certain we could actually place a full implant at the time of the mastectomy. Either of those two things achieve a stable breast mound, but in future procedures, certain things might need to be done to improve on the result. It could be scar revisions. It could be things like fat grafting to address areas of contour irregularities or deformities. It could be things like nipple reconstructions. It could be changes to be implant pockets just to improve on symmetry and the appearance of the reconstructed breast.
- Adeyiza Momoh: So the subsequent procedures vary depending on the type of reconstruction and the specific needs of the patient. But typically to get a final result that the patient is happy with, that comes as close as possible to a natural looking result. A few additional procedures might need to be done. What I'd like to say though is that the first operation done at the time of the mastectomy is typically the largest operation.
- Adeyiza Momoh: It's typically the most involved and requires, I guess the longest recovery from the standpoint of the patient. Everything after that that are additional surgical procedures tend to be smaller, shorter outpatient procedures, and patients bounce back pretty quickly from those procedures. In general, I'd say most of the time patients don't have to take as much time off of work and away from their families, for the subsequent procedures
- Scott Redding: You talked about probably, and I hate to use the word easy or simple, but the implants reconstruction kind of being that level. What kind of implants are there and is that kind of the more common type of procedure women get?
- Adeyiza Momoh: Yes. In the United States today, I would estimate that 70 to maybe 80% of women undergoing immediate breast reconstruction after mastectomies are having implants placed. Multiple studies have shown that the proportion of implants placed in nationwide are much higher than tissue based forms of reconstruction and this happens for multiple reasons.
- Adeyiza Momoh: One of these reasons is patient choice. Patients do have options and they may choose to have implant reconstructions for good reason. Others could be access to reconstructive surgeons who offer a full gamut or a full set of options for reconstruction. Some plastic surgeons or reconstructive surgeons only offer implant reconstructions just based on their location and the resources that might be available to them. Which might include expertise to perform more complex reconstructive procedures.
- Adeyiza Momoh: Patients might want to get back to work quickly, patients might want to get back to their families quickly and will choose options for reconstruction that meet their specific needs. So from that standpoint, for multiple reasons, implant-based breast reconstructions are most common.
- Adeyiza Momoh: Free tissue transfers or tissue based forms of reconstruction end up being about 20% maybe at best 30% of the reconstructions. And again could be influenced



by patient choice. Some patients absolutely don't want any foreign bodies utilize for their reconstruction. Other things that could influence that decision would primarily be having enough tissue to be able to achieve a reconstruction of sufficient size based on patient's desires.

Adeyiza Momoh: Patients occasionally might not be healthy enough to go through longer, more complex procedures. In that setting may opt for implant reconstructions. So, as you go through the discussions with patients, you get specific information from each individual woman about what they care about, what is important to them?

Adeyiza Momoh: It starts to become a little... It becomes apparent what might work best and ultimately patients make the choice that works for them. In general, most patients are very satisfied with the choice they've decided upon, as far as the reconstruction type goes.

Scott Redding: You had mentioned making sure there's enough tissue to achieve the size of breast that they either currently have or are looking to have when they're done. From an implant standpoint, the various different implants, what kind are there and how do those adjust differently for that situation?

Adeyiza Momoh: In general there are two types of implants. There are many more types of implants, but just from a simplistic standpoint, we would typically say there are silicone implants versus saline implants. That refers to the fill or the material that's within the shell of the implants. All implants are made of a silicone shell.

Adeyiza Momoh: One of the differences between the silicone versus saline implants or the big difference between the silicone and saline implants has to do with the fact that saline implants are filled with salt water and the silicone implants are filled with a gel.

Scott Redding: You talk a lot about implants. What exactly is microsurgical reconstruction and perforator flaps?

Adeyiza Momoh: Microsurgery is a technique in utilizing plastic surgery across the board that gives us an ability to transfer tissue from one place in the body. It could be a soft tissue or even bone, from one part of the body to another of the body with its own blood supply typically for uses of reconstruction. Microsurgery is applied in cases of trauma and things like soft tissue reconstructions after oncologic or cancer resections.

Adeyiza Momoh: In breast reconstruction, we utilize the microsurgical techniques to transfer soft tissue from other parts of the body like the lower abdomen, the thighs, or the gluteal region to reconstruct a breast. The freedom we have with microsurgery has revolutionized our approaches to reconstruction of the breast.

Adeyiza Momoh: So that we can take tissue from distant sites that are really far away from the chest and actually bring a good amount of tissue that could weigh as much as



1,000 grams or more to reconstruct a breast of any size depending on what's desired by the patient.

Scott Redding: So this is to the... You mentioned earlier about actually using tissue for reconstruction.

Adeyiza Momoh: Yes.

Scott Redding: These are where those come in.

Adeyiza Momoh: Yes. In the past techniques we were limited to for tissue based reconstruction were called pedicle flaps. Pedicle flap or soft tissue flaps that were located in regions of the body there were close to the chest. So for instance, we would be able to take skin, fat, and muscle from the back, leave it attached to its blood supply and rotate it around to the chest and shape it into the form of breasts.

Adeyiza Momoh: Same thing with the abdomen. We would take skin and fat with some muscle attached to its blood supply and rotate it to the chest to shape a new breast. Nowadays we don't do that as much. Those techniques are still possible. However, we've evolved and progressed to a point where we're able to take skin, fat, blood vessels with very little muscle. In most cases we take no muscle at all.

Adeyiza Momoh: We disconnect the blood supply, we find a new blood supply in the chest and under a microscope we are able to put ends of arteries together and ends of veins together. So now this tissue that's been transferred has a new blood supply or a new source of blood supply where blood gets into the soft tissue and out of the soft tissue and it lives in its new location.

Adeyiza Momoh: That freedom allows us to go from the distant places like even the thighs for instance, and take just what we need for the reconstruction without causing too much injury or compromise to the site where we take the soft tissue.

Scott Redding: The microsurgical and the tissue form of reconstruction seems to be a little bit more and that you referred to a few times as more complex than implant. So outside of that aspect. What are some pros and cons between the two options of some sort of tissue compared to an implant?

Adeyiza Momoh: in comparing the two basic forms of reconstruction. I typically would say that as I had mentioned a little earlier, that implant forms of reconstruction are relatively easy, not just from the surgical standpoint for the surgeon but also for the patient. Because there's just one surgical site which is the breast. There'll be one scar typically and the breast will be the surgical site with no other parts of the body having to heal.

Adeyiza Momoh: Postoperative pain tends to be less with implants and patients tend to recover a little faster postoperatively. The downside to implants in many cases is that they



are not your own tissue and so they do not behave like your own tissue. They are prone to certain set of complications. One of them early on after surgery being infections and if a patient has an infection with an implant, we do a lot of things to try to prevent that and decrease their rate of infections.

Adeyiza Momoh: We do a lot of things to try to save reconstructions in patients who develop infections. However, in many cases we're unable to do that and the end result of infection with an implant typically is a loss of the reconstruction. With us having to take out an implant and leave a patient without a breast mound for a while before we try to initiate the reconstruction again.

Adeyiza Momoh: The other things that are potentially problematic with implants are that implants require maintenance over time. Implants can rupture and implants can also have capsular contracture that in the worst case scenarios cause pain to the patient. If any of those things are happening years down the road, it could be a few decades down the road. Patients may need surgical procedures to address these problems.

Adeyiza Momoh: The other end of the spectrum with free tissue transfers, they are longer procedures and so they require longer recoveries from the patient. The patients are usually healing from two operative sites, one being the breast and the other being the donor site. Where we harvest soft tissue for the reconstruction. Probably is a little longer. Most patients after about six weeks of recovery would be at about 80% back to normal, but not exactly 100%.

Adeyiza Momoh: But in general over a few more weeks patients get back to 100% and the ultimate goal is to get patients back to doing what they were doing before, which is possible with both techniques. Upsides of using free tissue transfers or patient's own tissues for reconstruction is that, one, it's the closest we can get to a natural appearing and natural feeling breasts for reconstruction.

Adeyiza Momoh: Even in cases of a unilateral reconstruction, which means one side is reconstructed, we're very easily able to match the natural breast with tissue transferred from the patient's own body. The second issue is that there is very little to no maintenance of this reconstruction after it's done. After all the stages are done, typically you don't have issues of a rupture or capsular contracture that patients have to deal with, with implants many years down the road.

Adeyiza Momoh: With this not much needs to be done. Patients can gain weight and lose weight and the flap will behave like the rest of the body gaining weight and losing weight with them. Then the final thing that I want to point out as a difference between these two forms of reconstruction is, in breast reconstruction we've come to a place where our goal, like I kind of alluded to. Was to return patients to the quality of life and the kinds of things that they were doing before they had the diagnosis of breast cancer or had to deal with a mastectomy and reconstruction.



Adeyiza Momoh: So quality of life is a big driver in determining what is best for patients. We've done large studies from multiple centers in the United States looking at how patients do from a quality of life standpoint and from a standpoint of satisfaction with their reconstructions over time after the reconstruction is completed. What we found is, patients with either implants or tissue-based forms of reconstruction are relatively happy with the results they get early on after reconstruction.

Adeyiza Momoh: But over time, when you get to be about a year or two years in to life after the reconstruction. We found that the satisfaction with implant reconstructions tends to diminish. While the satisfaction or with tissue based forms of reconstruction tends to be maintained over time. So that is something real that patients need to consider. It doesn't mean patients will pick one thing versus another just based on that. However, it's something else they need to know about when making the decision for breast reconstruction.

Scott Redding: Well, my mom is a breast cancer survivor and she had unilateral mastectomy and had reconstruction at the same time and had an implant. I know probably about a year or so down the road she was complaining because it didn't feel natural and it was harder and so forth. Then there was some potential for her other breasts so she had mastectomy and at that time she had the other one redone. She had the DIEP flap procedure done.

Scott Redding: But again, it was to your point where you were saying, down the road some of the implants... My mom was one that did have that. Just was not comfortable, didn't feel it was her own type of a thing.

Adeyiza Momoh: Yes, and I mean I think that's real. With most of the things we talk about with reconstruction, we try to see the big picture in the sense that we're dealing with thousands and thousands of patients. The experiences for every patient is a little different. However, in general, I think it's safe to say that tissue based forms of reconstruction tend to do better from the standpoint of the way they feel and their ability to match up to a natural breast.

Adeyiza Momoh: On the other side, patient's happiness and satisfaction with these forms of reconstruction have been shown to be relatively superior. Especially when we start talking about patients who are undergoing things like radiation therapy, which is another nuance of our considerations for reconstructive options in these cancer patients.

Scott Redding: Let's talk a little bit more about that. You just mentioned radiation patients. How does chemotherapy or radiation affect one form or another of the reconstruction?

Adeyiza Momoh: Some of the things that are done for cancer care that are meant to eradicate residual disease that might either be in the vicinity of the breast or at distant sites across the body would include chemotherapy for one and then radiation.

The one thing that chemotherapy does for all surgery is it decreases the body's ability to fight off infections and it also decreases the body's ability to heal.

Adeyiza Momoh: So for most of the things that we would do from a surgical standpoint, we would wait until chemotherapy is completed. Wait some time after chemotherapy is completed so that the body can recover and bounce back and be able to fend off infections and heal when we operate.

Adeyiza Momoh: So chemotherapy itself is not as big a problem for reconstruction, because all we do is we just wait until it's done and the body bounces back and we're able to do everything we were able to do before. Radiation's a little bit of a different story in the sense that radiation is meant to help, if you want to think of it as cleanup.

Adeyiza Momoh: Whatever might be residual in the chest region where the breast was, whatever residual disease might exist in the chest region. Is very effective in that has been shown to decrease recurrence of disease and help with the eradication of breast cancer.

Adeyiza Momoh: The downside to it is it not only targets or eradicates the breast cancer cells, it also causes injury to the soft tissue in the region that is exposed to the radiation. So skin, subcutaneous fat tissue, muscles, bones are all affected by radiation.

Adeyiza Momoh: The radiation oncologists have done a phenomenal job in fine tuning their techniques. Especially, with CT guidance, so that vital organs in the area, for instance, the heart and the lungs are not directly affected by radiation as they used to be in the past. So those are significant improvements. However, from a reconstructive standpoint, the things that we are very interested in our skin and soft tissue, the muscles, and the blood vessels in the area and all of those things are affected by radiation.

Adeyiza Momoh: The radiation affects things essentially for the lifetime of the patient. The effect of radiation do not go away completely. So early on after radiation patients will have effects that looked like a bad sunburn that actually get better over time. But then there are longterm effects to the soft tissue that do not go away. The skin does not stretch as easy, so it loses some of its elastic content or ability.

Adeyiza Momoh: The soft tissues sometimes does not heal as well. The patients are prone to things like infections. So when you operate, all of a sudden these patients who are radiated are at increased risks for postoperative complications. So patients need to understand that when they're going into reconstruction, after being radiated.

Adeyiza Momoh: We try to select our reconstructive techniques based on this, given that we know that the outcomes and potential complications with certain techniques are better than others. The techniques that tend to work better happened to be



the soft tissue forms of reconstruction. So the free tissue transfers specifically do a lot better with radiation. Multiple studies have been performed looking at the radiated patients to understand what works best in them.

Adeyiza Momoh: Complication rates, failure rates tend to be very high in patients who undergo implant-based forms of reconstruction. Aesthetic results of implant reconstructions also suffer quite a bit when patients have been radiated. A lot of these things are potentially avoided and overcome by using patient's own tissue for reconstruction. This is a key point that needs to be discussed and understood when considering options for reconstruction.

Scott Redding: Earlier you'd mentioned nipple reconstruction. Can you talk a little bit more about nipple and areola reconstruction and is that part of the normal process with the the breast reconstruction?

Adeyiza Momoh: Yes. Yes. When I previously talked about stages of reconstruction and the multiple stages that are required. Typically, nipple reconstructions tend to be one of the latter stages towards the end of the reconstructive process. For skin sparing mastectomies, the nipple and nipple areola complex in addition to the breast tissue is usually taken away as part of the cancer resection. The skin envelope is left behind and so we are able to recreate a breast mound with a skin envelope. But typically in these scenarios, the breast is without a nipple.

Adeyiza Momoh: Many women these days get very comfortable with the idea of having breasts that don't have nipples because they can wear clothing without having to wear a bra and worry about the projection of the nipple. In general from the reconstructive standpoint, the breast does not sometimes seem as complete without nipples.

Adeyiza Momoh: So in general this is an option that is offered to patients. Not all patients want it, but it's offered. Nipple reconstructions typically would involve local tissue rearrangement. I would typically describe this as a kind of origami of the breasts skin. It's skin in the area that is incised and elevated and folded to create a nipple bud.

Adeyiza Momoh: Procedures are very short and can be performed under local anesthesia. Once that heals, we're then able to either tattoo the color of the nipple areola complex around that reconstructed nipple. In the past, one of the things that was done and it's still done by many plastic surgeons, is to take a skin graft from an another part of the body with a different color and texture and use that to design the nipple areola complex. So you have that color contrast, texture contrast that is relatively natural for a nipple.

Adeyiza Momoh: Over the past few years, another development has occurred, which is the 3D nipple tattoo. There are specific tattoo artists across the country that have exclusively specialized in this and do a really great job. As I mentioned, some women do not like the idea of having a projecting nipple, especially for certain

clothing.

Adeyiza Momoh: So the option of a 3D nipple tattoo is another great one where the impression of projecting nipple can be created by a tattoo artist without an actual projecting nipple. I've had a good number of patients do this and I'm very impressed by the results. So it's just another option that is available to women who might not want the traditional nipple reconstruction but can also get the appearance of a nipple reconstruction from an established tattoo artist.

Scott Redding: You just mentioned that some women don't necessarily want to have the nipple due to clothing or due to the projection and they maybe go down the path of a tattoo. It brings me to a thought of when you first meet with the patients and you're talking about their options. Are there some women that are saying that, "I want larger breasts, I want smaller breasts, I want..." It's all seems to be geared around what the patient wants, which is great, but does that come up often as well?

Adeyiza Momoh: It does come up. Just that going back a few steps. Reconstruction is one of those things that we feel all patients need to know about. There are laws in the United States that have been put in place to make that a possibility. Laws that state that well, insurance companies should pay for reconstruction and patients should understand their options and those kinds of things.

Adeyiza Momoh: But the reality is some patients don't want reconstruction. So in general, our discussions first start off with, okay, these are the options. However, an option is not to have reconstruction at all. Now when we go down the path of patients who do want reconstruction. The consultation many times can last as long as 40 minutes to a full hour. Going over a lot of details and nuances that might be relevant to a specific patient and size is one of those issues.

Adeyiza Momoh: It's usually a good thing to understand what size a patient is at the beginning and you can get that sense from just asking about bra size. You can get a sense of that also by the examination. But in the conversation, the other part of the things that we want to know is what does a patient want out of the reconstruction. What size the patient want of the reconstruction.

Adeyiza Momoh: It's usually the patients will give you specific cup size that exists right now and what they would like to be. So it could be that they want to be a cup size or two large. It could be that they want to be exactly the same and it could be that they want to be smaller. Understanding that helps you tailor the conversation. It helps you tailor your discussions on techniques that might best help them achieve those results.

Adeyiza Momoh: But it's very variable from the standpoint of the size that any specific woman might be interested in. The reality is specifically in things like unilateral reconstructions. We can make the reconstructed breast a different size from the natural one and in subsequent operations or sometimes at the primary or first



operation we can adjust the natural breast. Either by making it slightly smaller, which would be a reduction, just lifting it and maintaining the same size, which will be a breast lift or a mastopexy or making it larger which would specifically be a breast augmentation.

Adeyiza Momoh: So we have a lot of freedom in what we can do to try to achieve symmetry. We have a lot of freedom and what we can do to achieve the size of patient wants. So the key thing is just getting a sense of what a patient wants and then tailoring the reconstructive options and approach to achieve that.

Scott Redding: Well, Adeyiza thank you for all the wonderful information. I think it's very helpful and it's again, helping to get that education out there of all the different options in what patients should know and expect. If we were to have one key takeaway as we wrap up, what would that be?

Adeyiza Momoh: The big takeaway for women who either have a diagnosis of breast cancer or even have a predisposition for cancer and are undergoing mastectomies. The big takeaway would be that they have options. You have options, and those options should be explored. If you do not want reconstruction, that is an option. But in the case that you do want reconstruction, there are so many options that are available to you.

Adeyiza Momoh: The key thing is to meet with a reconstructive surgeon, discuss your specific concerns and interests and come up with a reconstructive plan that suits your needs. Another key thing that I would like to emphasize is that reconstruction is absolutely covered by your insurance. You should not have to pay for reconstruction and so do not let that be a deterrent to exploring a reconstruction after mastectomies.

Scott Redding: Great. Thank you again. Thank you for listening and tell us what you think of this podcast by rating and reviewing us. If you have suggestions for additional topics, you can send them to cancercenter@med.umesh.edu or message us on Twitter @UMRogelCancer. You can continue to explore the 3Ps of Cancer by visiting Rogel Cancer Center.org.

