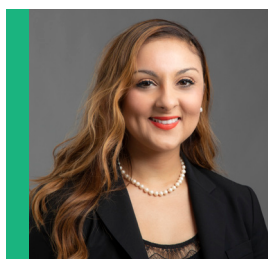




Case study:

Direct-to-Implant Breast Reconstruction

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Dr. Shenaq specializes in both implant-based and autologous reconstruction after breast cancer and in microvascular techniques for lymphedema treatment, including lymph node transfer and lymphovenous bypass procedures. She has advanced training in limb salvage and oncologic reconstruction following cancers of the head and neck, skin, perineum and lower extremity. She also performs aesthetic surgery of the face, breast and body.

History

A female patient in her 30s was diagnosed with breast cancer. Prior to diagnosis, the patient was otherwise healthy with no comorbidities.

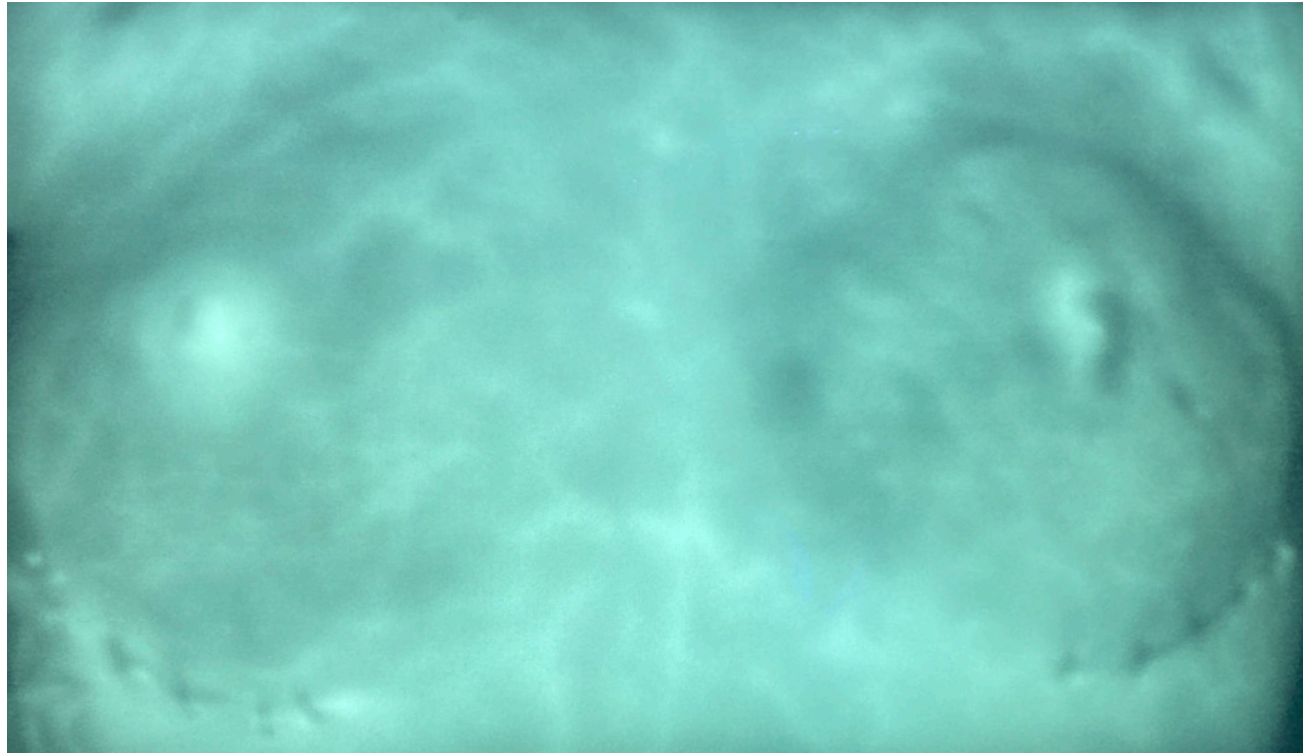
Presentation and Examination

The patient was diagnosed with two primary cancers in the left breast: the first was 2.7 cm and the second was 3 cm, triple negative. Her lymph nodes were negative for metastasis. The patient did not require radiation therapy. Under the care of Ruta Rao, MD, oncologist at Rush, she completed neoadjuvant chemotherapy with four cycles of Adriamycin and Cyclophosphamide, followed by four cycles of Taxol.

After completion of chemotherapy, the patient underwent bilateral nipple sparing mastectomies with sentinel lymph node biopsy under the care of Rosalinda Alvarado, MD, breast surgical oncologist at Rush, followed by immediate prepectoral, direct-to-implant (DTI) reconstruction with permanent silicone gel implants.

About the procedure

A direct-to-implant breast reconstruction allows for implants to be placed at the same time as the mastectomy



SPY imaging shows adequate perfusion to mastectomy skin and nipples post mastectomy, allowing for DTI reconstruction, as the skin and nipple areolar complex can tolerate pressure of implant.

without the use of a tissue expander (space holder device). This method reduces the number of surgeries required to complete reconstruction and obviates the need for repeat office visits for tissue expander fills. In this patient's case, the implant was placed above the pectoral muscle, thus avoiding pectoral muscle disturbance, and provides a more natural result without future animation deformities. This technique also offers quicker recovery, less pain and easier return to physical activities over the traditional retropectoral techniques.

Treatment

The decision to perform DTI reconstruction requires optimal coordination of care between the breast surgical oncologist and plastic surgeon. It is contingent upon several factors such as the quality and perfusion of skin following the mastectomy (at time of surgery), the patient's general health, desired breast size, and history of previous

radiation. This patient was an excellent candidate for the procedure given the moderate size of her breasts with good nipple position, excellent skin quality and perfusion following the mastectomy and lack of preoperative radiation.

As with any DTI, evaluation of the nipple position and degree of breast ptosis is necessary. This patient had a moderately sized breast with grade 1 ptosis and good nipple position. Due to the small size of her tumors, which were far from her nipple, a nipple sparing approach was possible with her mastectomy. The nipple sparing approach assures that there will be sufficient skin available for a DTI reconstruction versus a skin-sparing approach, which oftentimes requires a tissue expander to stretch the skin sufficiently to accommodate an implant in a second stage.

Intraoperatively, indocyanine green fluorescence angiography (ICG-FA) is utilized with an implant sizer in place to determine whether the perfusion to

the mastectomy skin after mastectomy is adequate to place an implant immediately. Therefore, excellent communication and teamwork with the breast surgical oncologist is necessary for the procedure's success.

After mastectomy, the breast pocket may be wider and lacking borders compared to the true breast footprint. Therefore, we used an acellular dermal matrix (ADM) which is sutured to the chest wall to precisely position the implant into the breast pocket and redefine the inframammary fold. In this case, the patient also desired an augmentation in her breast size from C to D cup, which we were able to accomplish, by placing an implant larger than the native breast tissue removed. Despite this increase in breast size, ICG-FA results were favorable intraoperatively, and we were able to proceed. The patient's incision was hidden in the inframammary fold, thus preserving the overall aesthetic appearance of the reconstructed breasts.

Outcome

It has been over a year and a half since her initial surgery and the patient is doing very well and happy with her outcome. She remains cancer free.

Analysis

Direct-to-implant breast reconstruction

The patient had very high cosmetic expectations, which is certainly the case for the majority of patients receiving breast reconstruction. Thus, preoperative counseling is essential to set expectations and obtain realistic goals post mastectomy and reconstruction. Prepectoral DTI breast reconstruction is gaining traction in the field of breast reconstruction. It

requires well thought out surgical planning and excellent teamwork between the breast surgeon and plastic surgeon. Appropriate patient selection from both an oncologic and aesthetic perspective is essential. Nipple sparing mastectomy is oncologically sound only if the malignancy does not involve the nipple and the skin that is being spared. Once these criteria are satisfied, patient goals, aesthetic desires, body habitus, and overall health are taken into account in order to ensure an optimal outcome.

The patient was also concerned about the potential need for radiation following surgery, which she ultimately did not require. Radiation will affect cosmetic outcomes of the reconstruction, but DTI is still possible in this scenario. In this case, the patient will receive radiation with the implant in place. This technique requires optimal coordination and a team approach between the radiation oncologist, breast oncology surgeon and plastic surgeon.

For more information, visit
[rush.edu/breast-reconstruction](https://www.rush.edu/breast-reconstruction)



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