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Minimizing Disfigurement

Breast surgeons are offering a new kind of mastectomy surgery that helps women feel better about their bodies.

IN HER 1977 BOOK, *ILLNESS AS METAPHOR*, ESSAYIST SUSAN SONTAG IDENTIFIED WARFARE AS THE PROMINENT METAPHOR FOR CANCER AND ITS TREATMENT. MALIGNANT TUMORS INVADE. TREATMENT KILLS. THE METAPHORS AREN'T SURPRISING, CONSIDERING THAT AT THE TIME SONTAG WAS RECOVERING FROM A RADICAL MASTECTOMY. THAT AGGRESSIVE BREAST CANCER SURGERY REMOVED ALMOST HALF OF THE CHEST—ALL BREAST TISSUE, ALL OVERLYING SKIN, BOTH FAN-SHAPED CHEST MUSCLES UNDER THE BREASTS, AND THE UNDERARM LYMPH NODES.

Sontag lived another 30 years. As the decades progressed, doctors learned more about breast cancer and found that less extensive surgeries offered equally good protection against tumor recurrence. The promising outcomes led surgeons to consider ways of doing mastectomies that would minimize disfigurement, too.

Over the past five years, a new mastectomy technique has been gaining acceptance; the less drastic procedure removes the breast while sparing its blood supply and outer envelope of skin—including the nipple and areola. In reconstruction, an implanted saline- or silicone-filled pouch or tissue from the patient's own belly or back replaces the internal breast tissue, preserving the breast's appearance.

"Coupled with reconstruction, the cosmetic results are so superior to traditional mastectomy—simply amazing," says Richard Shapiro, MD, associate professor of surgery and director of surgical oncology operations and services at NYU Clinical Cancer Center. Since 2010 Dr. Shapiro has performed 134 of the operations in 71 patients, 30 percent of them young women without breast cancer who are at high risk because of their family history or genetics.

Nipple and areola sparing is the most recent advance in mastectomy technique after skin sparing, first reported in 1991, in which surgeons saved the breast skin but routinely cut out the nipple and areola. If the patient wanted it, an artificial nipple could be created and a false areola tattooed in place. Because most breast cancer arises in the milk ducts leading to the nipple, oncologists worried that cancer could recur in residual tissue in

and around the area. But over the past decade, a growing body of literature indicates that cancer in the retained nipple is a rare event.



Breast cancer surgeon Dr. Deborah Axelrod sees patients at NYU Clinical Cancer Center. She is performing mastectomy surgery that preserves the nipple and areola. (Photograph by René Pérez)

"Most of us believe that nipple sparing is safe," Dr. Shapiro says. "If you look at the risk of recurrence in the nipple, it's low." But he acknowledges that long-term outcome data is lacking, though studies are ongoing. As with any mastectomy, he says, there is still a 3 to 9 percent risk of tumor recurrence or a new primary tumor.

“Women need to consider that we don’t have long-term data yet on nipple sparing,” cautions oncologist Julia Smith, MD, PhD, director of Breast Cancer Screening and Prevention Programs at NYU Cancer Institute. “It is a complicated issue. There is no procedure, including bilateral prophylactic mastectomy, which completely eradicates all risk. Therefore, each woman should be given the information and helped to make a decision that best balances her concerns and wishes.”

RECONSTRUCTING THE BREAST

To remove as much at-risk tissue as possible during the surgery, cell scrapings from inside the nipple are sent to the pathologist. If she finds cancer, or any atypical or suspicious cells, the nipple is sacrificed. Because nerves around the nipple are cut, most women lose sensation, though some patients have reported its return.

“It’s women-driven,” says Deborah Axelrod, MD, associate professor of surgery and director of Clinical Breast Programs and Services at NYU Clinical Cancer Center, who, like Dr. Shapiro and a handful of their colleagues, performs nipple- and areola-sparing mastectomies in collaboration with NYU plastic surgeons who rebuild the breast afterward. “Women want it, just like lumpectomy and other types of breast conservation,” she says.



Tammi Fox chose to have a nipple-sparing mastectomy. (Photograph by René Pérez)

Tammi Fox, 39, couldn’t agree more. The married mother of two had a baseline mammogram at a local imaging center, near her home in Suffern, New York, in July 2010. Though she felt healthy and had no family history of breast cancer, a mammogram and ultrasound revealed a thickening in her left breast near her armpit. Repeat imaging six months later showed it hadn’t changed. When the radiologist suggested she consult a breast specialist, family friends recommended Dr. Axelrod.

Dr. Axelrod used a needle to obtain a small amount of tissue from the thickening and found atypical cells. “Dr. Axelrod didn’t think it was cancer, but based on the results of the fine needle

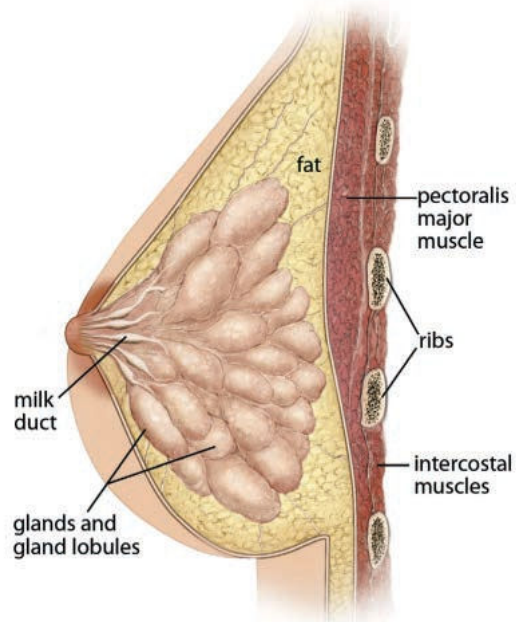
aspiration, she said it should come out,” recalls Fox, a product manager for JP Morgan. In May 2011 Dr. Axelrod removed the mass, working with NYU plastic surgeon Nolan Karp, MD, who was able to minimize the defect with a “lollipop” incision around the areola and nipple and then straight down the center of the breast.

The post-op diagnosis was ductal carcinoma. The only good news: The cancer was still confined to the lining of the milk ducts and had not spread. Dr. Axelrod gave her patient two options: lumpectomy plus radiation or a mastectomy to completely remove all breast tissue.

“That was a tough time,” recalls Fox, whose two young sons are 3 and 5. “It’s been hard on them. I used to be very physical with them. They would sit in my lap and lean against my chest to read books. That’s been kind of sad. I told them that Mommy had ‘owies.’ We don’t use the word ‘cancer.’”

Fox had heard of a genetic mutation common in Ashkenazi (Eastern European) Jewish families like hers. Some 5 to 10 percent of breast cancers are due to hereditary gene mutations; the most important are the BRCA1 and BRCA2 mutations, first identified at the National Institutes of Health in the mid-1990s. “I asked to be tested to see if I had a BRCA genetic mutation because if I tested positive, it would provide a clear-cut answer as to what I should do,” she says.

A woman with one of the harmful BRCA gene mutations has a risk that’s at least five times higher than the 12 percent risk of a woman without such a mutation, according to the National Cancer Institute. Other estimates put the risk as high as 87 percent. For women who are BRCA-positive, the risk of developing cancer in the opposite breast is about 50 percent; in the ovaries, it’s 15 to 40 percent, compared to a 1.4 percent risk in the general population.





Surgeon Dr. Richard Shapiro believes nipple sparing is safe, but acknowledges that long-term outcome data is lacking. (Photograph by René Pérez)

Fox tested positive for the BRCA1 gene mutation. After discussing the options with her oncologist, Ruth Oratz, MD, clinical associate professor of medicine, she elected to have both breasts and her ovaries removed to minimize the risk of future cancers.

Drs. Axelrod and Karp discussed the possibility of nipple sparing with Fox. They told her that usually surgeons wait four to six months after surgical procedures around the nipple before trying nipple-sparing mastectomy, but agreed to push the limit if Tammi were willing to accept the possibility of later nipple loss because her prior surgery was so recent.

Dr. Axelrod performed Fox's second breast surgery in July 2011. For the reconstruction, Dr. Karp inserted balloon-like expanders under the chest muscle, to be inflated with fluid over three months' time and then replaced by breast implants.

"I'm so grateful for the way they partnered together," Fox says. "Keeping this piece of myself—synthetic nipples would never look like mine—I'm glad they're my own."

Even so, not every patient is a good candidate. Each woman needs to discuss her options with her plastic surgeon and oncologist. Among those who are not considered for the nipple-sparing surgery are patients with cancer or other abnormalities in or near the nipple-areola complex; those with bloody nipple discharge, ptotic (drooping) breasts, or large tumors in small breasts; or those with a history of smoking or poor wound healing.

A FAMILY HISTORY OF BREAST CANCER

Though her preference is to preserve the breast, Dr. Axelrod stresses that cosmetic concerns are always secondary to treatment. However, there's one group that's an exception: women without cancer who elect to have both breasts removed because their family history or a gene mutation greatly heightens their risk. In such cases, prophylactic surgery can reduce some 90 percent of that risk, bringing it down to the same risk as the general population.

Susan Blasberg, of Livingston, New Jersey, was 29 when she decided to get tested for the BRCA mutation. Her mother had been positive for BRCA2 and died of pancreatic and breast cancer in 2009. Before that, she lost her father to lung cancer. Her mother's oncologist told her that because of her family history and the mutation, she had at least an 85 percent chance of developing breast cancer.

"I knew I had the gene but I did nothing about it. Last year my cousin also found out she had the BRCA2 gene," Blasberg says. "Her mother, my aunt, had died of breast cancer in 2008. My cousin decided she was going to have prophylactic surgery after she finished breast-feeding her baby, but they found breast cancer on a routine exam," she says. "It was kind of a big wakeup call for me." Blasberg elected to have both breasts removed with nipple sparing and reconstruction. "I didn't have my ovaries removed—I'm 30 now—and I'd like to have children if I can."

In April Blasberg went ahead with the surgery, performed by Dr. Axelrod and plastic surgeon Mihye Choi, MD, assistant professor of surgery. Blasberg elected to have tissue expanders implanted for three months to stretch the breast skin; in July they were exchanged for silicone-filled implants.

Blasberg, who took over her family business as a sales rep for manufacturers of housewares, can't get over how good she looks. "One of the reasons I decided to keep my nipples is that it made me feel a lot better. I look a million times better than I had hoped for!"

"It takes mastectomy and reconstruction to another level," Dr. Choi says. "To save the nipple and areola, you really preserve the natural shape of the breast. That's so important to a young woman," she adds. "Psychologically she's more confident and happier about her body—that's worth something." •

—AUBIN TYLER