Autologous Breast Reconstruction Procedures Render Few Serious Complications

Breast cancer patients who undergo a mastectomy followed by breast reconstruction using a transplanted flap of their own tissue have a low rate of early postoperative complications, however, according to a new study, their risk varies by the type of flap procedure they undergo. Results from the large-scale multicenter study appearing in the February issue of the Journal of the American College of Surgeons indicate that a flap technique known as the free flap appears to have a higher rate of 30-day postoperative complications compared with pedicle flap techniques.

Although tissue expansion with an implant is the most common type of breast reconstruction performed, many women prefer the more natural results of using their own, or “autologous,” tissue. However, it has been unclear which of the many autologous reconstructive techniques renders the best result and fewest postoperative complications according to study authors.

“This study is one of the largest to report short-term outcomes of autologous breast reconstruction,” said principal investigator John Kim, MD, FACS, associate professor of surgery at Northwestern University Feinberg School of Medicine and a plastic and reconstructive surgeon at Northwestern Memorial Hospital, both in Chicago. “Now we can inform women of some risk factors for complications, calculated using nationwide data from multiple independent sources. The good news is that serious complications are rare and these procedures are generally safe.”

Dr. Kim and colleagues used the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) database for this study. ACS NSQIP is the leading nationally validated, risk-adjusted, outcomes-based program to measure and improve the quality of care in private sector hospitals. The researchers analyzed surgical outcomes data from nearly 3,300 women who had autologous breast reconstruction. Next, they used the data to track complications within the first month after reconstructive procedures performed at more than 240 medical centers across the United States from 2006 to 2010.

The investigators included women in the study who had one of three common flap procedures: pedicle TRAM flap (which stands for the transverse rectus abdominis myocutaneous muscle), latissimus dorsi flap, or free flap.

In the TRAM and latissimus flap procedures, a section of skin, fat, and muscle from another part of the patient’s body is tunneled under the skin to the chest while a narrow strip of tissue remains attached to its original blood supply. The TRAM flap comes from the lower part of the abdomen, and the latissimus flap is taken from the back. For the more complex free flap procedure, the surgeon takes tissue—typically from the abdomen—disconnects it from its blood supply and, after transplanting it

at the breast, reconnects it to blood vessels in that area. Dr. Kim and colleagues found that only 12.5% of autologous breast reconstructive procedures result in short-term complications despite the fact that flap breast reconstruction is a complex surgical technique. “There are minor and treatable flap complications that can occur, such as wound infection, but serious complications, such as heart attack, were rare,”

Dr. Kim said. “Our study dispels the notion that autologous breast reconstruction has major medical complications.”

According to the researchers, the flap techniques have different risk profiles for 30-day postoperative complications. Latissimus flaps showed significantly lower complication rates than the other methods did: 7.1% compared with 13.4% for pedicle TRAM flaps and 19.4% for free flaps. Although Dr. Kim said the research team was surprised at how few complications resulted from latissimus flaps, he noted that the ACS NSQIP database does not track formation of seromas—soft, fluid-filled swellings at the breast or underarm—which are the most common problem after latissimus flap breast reconstruction, and that this omission could be a possible shortcoming of the study.

Latissimus flaps are second in popularity to TRAM flaps, which were the choice of nearly 49 percent of the women in the study. Only about 18 percent of patients received a free flap. Given their study results, the authors wrote that latissimus flaps may not need to be relegated to a secondary option. However, the latissimus flap often requires an implant, which Dr. Kim said may discourage some women from choosing it. He stressed that the choice of breast reconstructive technique depends on many considerations and “there’s never one flap that is best for everyone.”

Besides flap type, other factors that the researchers found raised the risk of complications after flap breast reconstruction included a recent prior operation, obesity and delayed reconstruction (not simultaneous with mastectomy). Similar to results of other studies, women who smoked had a higher risk—nearly 1.7 times greater odds—of getting an infection at the surgical site than nonsmokers did, which Dr. Kim said underscores the importance of not smoking before the operation.

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