Discussion

Assessment of Breast Volume Change after Transverse Rectus Abdominis Myocutaneous Flap

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It is well known that breast reconstruction after breast cancer extirpation plays an important role in offering benefits to restore symmetry, correct body image, and improve psychosocial well-being. Patients' desire for the restoration of body image after breast cancer extirpation is increasing markedly. There are a variety of reconstructive options available to patients. There has been a great deal of debate over the advantages of reconstructive surgical methods of the breast, but almost all plastic surgeons agree that breast reconstruction with autologous tissue is the most suitable surgical option for breast cancer patients. However, as the author observed, change in breast volume occurs over time, following breast reconstruction with autologous tissue.

Amir et al. [1] determined the volume needed for an inserted flap, figured from the actual volume of the removed flap plus an additional 10 percent of its volume, given a predictable volume decrease. However, while this quantitative calculation of additional volume needed for an inserted flap is useful for flap shaping and volume measurement, it is not adequate for measurement of the reconstructed breast volume during follow-up.

Let it first be said that I agree with the author's decision to measure the postoperative breast volume change using computed tomography (CT) after breast reconstruction with the transverse abdominal myocutaneous island flap. It is a novel method for measurement of breast volume change over time during follow-up.

However, there are some limitations to this study. First, for the consecutive CT scanning, the patient was laid in the supine position while holding postoperative tissue edema, the position of the inserted flap, the status of the breast skin envelopes, and the ratio of the volume of the inserted flap versus the original breast skin her breath and raising both hands over her head. Normal breasts of women sag laterally in this position, but a reconstructed breast of a patient does not initially sag because of envelope. All of these factors could have introduced a measurement bias by repetition of CT scanning through uncorrectable flap motion although the author set the fixed bony point at the medial and lateral border. After the author checked each section of the axial CT scan, the sections were transformed into three-dimensional (3D) images. The process of this transformation would also introduce a bias in each axial scanBreast volume measurement using a 3D laser surface image change rather than in a CT scan is more accurate. Furthermore, a 3D surface image obtained using non-invasive recording in the standing position provides the ability to quantitatively evaluate symmetry, volume, shape, contour, and surface, and also measure distance [2]. Second, this study included a very small number of patients. The author classified the patients into 4 groups, and each group was composed of 2 or 3 patients. This means that the volume change in one patient from the same group differs as much as the mean value of the group. To reduce statistical bias, each group should have had more than 7 patients. Finally, there were cost-benefit effects. The author affirmed that measuring the volume of the breast using a CT scan is cost-effective and does not cause discomfort to the patient. I disagree with the author's point of view on that matter. A 1-mm-thick slice in a follow-up CT scan for breast volume measurement is a much thinner section than routine breast CT scan, which is 5 mm in thickness in each section. This follow-up CT scan is not covered by insurance in Korea, and it is an additional economic burden to patients.

In conclusion, this article was the first trial for measurement of volume changes in breast reconstruction patients using CT scans. It would have been better if the volume measurement using a CT scan could represent the appearance and symmetry of the breast.

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No potential conflict of interest relevant to this article was reported.

Received: 31 Oct 2012 • Revised: 1 Nov 2012 • Accepted: 2 Nov 2012
pISSN: 2234-6163 • eISSN: 2234-6171
http://dx.doi.org/10.5999/aps.2012.39.6.636 • Arch Plast Surg 2012;39:636

