



## Aiming for Quality: Tips for Achieving Optimal Imaging in a Suboptimal World, Part 3

By Dawn Derenburger, RT(R)(M); Robyn Hadley, RT(R)(M)

This 3-part series aims to address various challenges that technologists face daily while aspiring to produce the highest-quality images for every patient. Parts 1 and 2 examined challenging situations technologists encounter while imaging patients with limitations. In part 3 we discuss the challenges associated with imaging patients who have undergone breast augmentation, patients with surgically altered breasts, and male patients.

### Patients With Breast Augmentation

One of the first considerations when obtaining images of patients with breast implants is implant position. Breast implants may be inserted anterior to the pectoralis muscle (subglandular) or posterior to the pectoralis muscle (subpectoral). Additionally, we must attempt to ascertain the type of material used and the age of the implant. These factors can play a very important role in positioning the patient. Although implant rupture is unlikely, the age of the implant is an essential consideration. The purpose of imaging the augmented breast with the implant in place is to visualize posterior breast tissue not included in implant-displaced (ID) views. Obtaining images of the implant in place before obtaining ID views is useful to assess the integrity of the implant so that rupture or leakage can be identified. If needed, the technologist can review the images with the radiologist prior to obtaining the ID views. When obtaining images with the implant in place, minimal compression should be used to hold the breast immobile to reduce motion artifact. Once the images with the implant in place are complete and rupture has been ruled out, the ID views can be obtained to better visualize the breast tissue that lies anterior to the implant. For the ID views, the half paddle can be used to maximize space for the technologist's hands when positioning. Instead of using a traditional pushback maneuver for the ID views, using a technique that pulls the tissue forward and away from the implant can be very effective. For this technique, the technologist stands behind the patient and slides the tissue forward in front of the implant. If the technologist has difficulty reaching around the patient, the patient can be placed in a seated position.

Occasionally ID views are not possible. When the implant is immobile because of encapsulation or fibrous contracture, displacement of the implant can be very difficult. If it is impossible to displace the implant, a 90° view with the implant in place can be added to the standard views to visualize tissue in the 12-o'clock and 6-o'clock regions. In these difficult cases, the technologist should properly annotate the patient history sheet.

### Imaging Patients With Surgically Altered Breasts

Previous breast procedures that technologists may encounter include lumpectomy, mastectomy, mastopexy, tissue flap reconstruction, and reduction mammoplasty. Patients with surgically altered breast tissue may experience increased pain or tenderness at the surgical site, and technologists should be mindful and sensitive to patients' concerns. Surgically altered breast tissue may also make it difficult to achieve imaging with the nipple centered and in profile.

The breast should be imaged in its postsurgical anatomical position. When necessary, additional images should be obtained with proper labeling of the images and documentation for the radiologist. Images for postlumpectomy patients should include surgical clips to ensure complete visualization of the lumpectomy site. Again, additional images should be obtained when necessary. Large skin folds may occur over the surgical scar once compression is applied. Additional views can be obtained with the wide spot-compression paddle to reduce the air gap, smooth out the fold, and optimize visualization of structures beneath and around the surgical site.

A major characteristic of patients who have undergone reduction mammoplasty is a pectoralis muscle that is not visualized at the level of the posterior nipple line. Using a lesser degree of angulation (35°-40°) for the mediolateral oblique view is helpful. Most importantly, technologists must be aware of their facility's protocol when imaging postsurgical patients. Imaging protocols regarding the use of skin markers and/or obtaining additional views should be established.

### Breast Imaging in Male Patients

Most male patients undergo imaging because of clinical asymmetric thickening, pain, or a unilateral mass. Although most male breast cancers occur away from the subareolar region, occasionally they develop immediately under the nipple. Therefore, it is important to ensure imaging of the nipple in profile, which may require an additional view. It is helpful for technologists to use the half paddle, if available, when imaging male patients. Communication and explanation of the procedure is important. Technologists should also be mindful that male patients are entering a department that is predominantly female, from employees to patients. Offer an alternate route when taking a male patient to the examination room, as opposed to walking him through the waiting room full of female patients. He may opt to go shirtless for the examination, but offering an alternative to the usual mammography patient gown may be appropriate.

As mammographers, we aim to achieve optimal imaging of every patient, every day. The 3 articles in this series have identified and suggested ways to overcome the challenges that make it difficult to obtain optimal imaging for every patient. However, with a foundation of knowledge, experience, and helpful tips, along with human compassion and an understanding of patient limitations, we can optimize the quality of the images we produce.



Dawn Derenburger, RT(R)(M)



Robyn Hadley, RT(R)(M)

