

# Breast Management in Women with Newly Diagnosed Breast Cancer

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## Abstract

**Objectives:** Breast-specific gamma imaging is a functional imaging modality that complements mammography and ultrasound in the detection of breast cancer. We sought to determine how often BSGI identified occult cancer and its impact on surgical management.

**Methods:** An institutional review board approved retrospective review was performed among all patients with newly diagnosed breast cancer in whom BSGI was performed as part of the preoperative work-up. Women underwent intravenous injection of 25-30 mCi of technetium-99m (99mTc) sestamibi and were imaged in mediolateral oblique, craniocaudal, and axillary projections using a high-resolution, small field-of-view gamma camera. Images were classified as positive (focal radiotracer uptake) or negative (no uptake or physiologic distribution) and compared with biopsy and surgical pathology.

**Results:** A total of 105 patients with biopsy-proven breast cancer underwent breast-specific gamma imaging between July 2011 and July 2012. Breast-specific gamma imaging confirmed the presence and location of known cancer in 104 lesions for true positive rate of 99%. One pathology proven lesion was not seen with breast-specific gamma imaging for a false negative rate of 0.7%. 35 patients (33%) had a positive study at a site remote from their known cancer; biopsy proved benign pathology in 12 (34%), and additional occult cancer in 23 (66%). Contralateral breast cancer was confirmed in 6 patients. Breast-specific gamma imaging findings along with additional biopsies and/or imaging changed surgical management in 39 patients (37.1%) resulting in 15 mastectomies, 3 wider excisions or quadrectomy, 11 neoadjuvant chemotherapy, 6 contralateral surgery, and 4 additional lumpectomies.

**Conclusions:** Additional or more extensive malignancy was detected in 22% of newly diagnosed breast cancer patients who underwent pre-operative breast-specific gamma imaging. Surgical management changed in 37%. Breast-specific gamma imaging plays an important role in the surgical and clinical management in women with breast cancer.

**Key Words:** Breast-specific gamma imaging; breast cancer; surgical management