検出困難な乳がんの画像検査

乳房に特異的なガンマ線画像によりマンモグラフィやルーチンの触診では検出できない悪性腫瘍を発見できる

Breast-specific gamma imaging uncovers malignancies not found on mammography or routine physical exam

乳房に特異的なガンマ線画像（BSGI）は、マンモグラフィや触診で発見されなかった、新たに乳がんと診断された女性の浸潤性小葉がんおよび他の悪性腫瘍を検出するのに有効であるとRadiological Society of North America（RSNA）学会で発表された。BSGIはsestamibi（technicium 99m）の取り込みを計測することにより細胞の活性を評価し、がん細胞の代謝活性を評価する新型技術である。ワシントンDCにあるジョージワシントン大学の研究者らは、マンモグラフィまたは触診にて1つ以上の疑わしいあるいはがん病変が認められ、他病変の有無を確認するためBSGIを施行された女性159人の記録をレビューした。BSGIにより新たに疑わしい病変が46人（29%）に認められた。新たに発見された病変は生検を施行された女性39人中14人（36%）において悪性であった。不顕性病変の平均サイズは1.16mmであり、最小のものはわずか1mmであった。73%の女性がdense breasts（高濃度乳房）であった。筆者らは、BSGIはマンモグラフィに取って代わるものではなく、検出困難ながんの発見およびハイリスク女性のスクリーニングに用いる補助的な検査として用いるべきであると強調している。

Full Text

Breast-specific gamma imaging (BSGI) is effective in detecting invasive lobular carcinoma and other malignancies not found on mammograms or by clinical examination in women newly diagnosed with breast cancer, according to a study presented at the annual meeting of the Radiological Society of North America (RSNA).

"BSGI can identify the most difficult to detect breast cancer-invasive lobular carcinoma," said lead author Rachel F. Brem, M.D., professor of radiology and director of the Breast Imaging and Interventional Center at The George Washington University Medical Center in Washington, D.C. "It also can help us detect additional lesions of all types of breast cancer in women whose mammograms show only one suspicious lesion."

Most experts agree that the best way to decrease breast cancer mortality is through early detection using mammography and clinical breast exam. However, some cancers are difficult to detect with mammography and clinical exam, particularly in the earliest stage when treatment is most effective.

While mammography findings are characterized by the difference in appearance between normal and suspicious breast tissue, BSGI findings are based on how cancerous cells function. "It is this physiological approach to breast cancer diagnosis that allows for improved cancer detection," Dr. Brem said.

BSGI is an emerging molecular imaging technology using a high-resolution gamma camera that allows for imaging with very mild compression of the breast along with an injection of a radiotracer [sestamibi (technicium 99m)]. Because cancerous cells have a higher rate of metabolic activity, the tracer is taken up by these cells at a higher level than in normal cells. BSGI measures uptake to assess cellular activity.

Dr. Brem and colleagues reviewed the records of 159 women with at least one suspicious or cancerous lesion found by mammography or physical exam, who had undergone BSGI to determine if additional lesions were present.

BSGI results showed an additional suspicious lesion missed by mammography and physical exam in 46 (29 percent) of the women. In 14 (36 percent) of the 39 women who underwent biopsy, the newly discovered lesions were cancerous.

There are few or no contraindications with BSGI. It can be used in diabetics and in patients with compromised renal function, and there are no weight restrictions or other limitations "The data suggest that BSGI allows for the diagnosis of more and earlier breast cancers," Dr. Brem said.

Dr. Brem pointed out that BSGI is not meant to replace mammography, but to be used as an adjunct to mammography. "It is an excellent tool for locating difficult-to-detect cancers and for screening high-risk women who have normal mammograms and physical examination," she said.