

Study: Molecular breast imaging may be useful in PASH diagnosis

Molecular breast imaging (MBI) can play a useful role in the diagnosis of pseudoangiomatous stromal hyperplasia (PASH), in the presence of negative mammography and ultrasound images, according to a case study published in the July issue of the *Journal of Surgical Radiology*.

MBI, a novel nuclear medicine imaging technique used to image breast lesions, can detect Tc99m sestamibi uptake using dual-head Cadmium-Zinc-Telluride (CZT) semiconductor detectors. Technetium 99m (Tc99m) sestamibi is injected intravenously and is taken up by breast tumors.

Pseudoangiomatous stromal hyperplasia (PASH) is a benign condition of the breast that frequently presents as a palpable mass. In this case of PASH, Deborah J. Rhodes, MD, assistant professor of medicine at the department of internal medicine at Mayo Clinic in Rochester, Minn., and colleagues demonstrated that MBI was critical in the diagnosis of PASH.

The case was a 35-year old woman with a palpable abnormality in the right breast found on routine clinical examination. At age 16, she was treated for left breast rhabdomyosarcoma with mastectomy, implant reconstruction, adjuvant chemotherapy and radiation to the left chest wall, supraclavicular lymph nodes and axillary lymph nodes. She subsequently underwent right breast reduction twice, according to Rhodes and colleagues.

Physical examination revealed a palpable thickening at the 10 o'clock position of the right breast. Mammography showed no abnormalities and focused ultrasound of the area revealed normal breast parenchyma and no focal masses. The patient continued with clinical observation, and repeat screening mammogram one year later also showed no areas of concern, wrote Rhodes and colleagues.

The patient underwent MBI with 20mCi Tc99m sestamibi. MBI revealed a 2.3 x 2.2 cm focus of uptake in right upper outer quadrant of the breast. As a result of the MBI, diagnostic mammography and repeat ultrasound were completed for additional imaging by Rhodes and colleagues. Spot compression magnification views of the right breast upper outer quadrant revealed a 2 cm vague focal asymmetry with partial effacement. Ultrasound of this area revealed no focal masses. MRI demonstrated a segmental area of clumped, persistent enhancement measuring 4.1 x 2.5 x 2.0 cm. "MRI-guided biopsy revealed PASH," noted Rhodes and colleagues.

Pathology revealed florid PASH forming an ill-defined mass in the upper outer quadrant measuring 3.6 x 2.5 x 2.3 cm when the patient elected to undergo nipple sparing mastectomy with immediate reconstruction one year later.

"This is the first report of MBI findings of PASH. PASH does demonstrate uptake of Tc99m," reported Rhodes and colleagues. MBI can be useful in problem solving,

particularly in the workup of questionable palpable lesions when initial imaging studies are negative on mammography and ultrasound, they offered.

“In this case of PASH, MBI detected focal uptake of Tc99m. When focal uptake is seen on MBI and biopsy reveals PASH, these findings can be concordant and may not necessarily require excision. Radiologic and pathologic correlation remains important,” concluded Rhodes and colleagues.

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