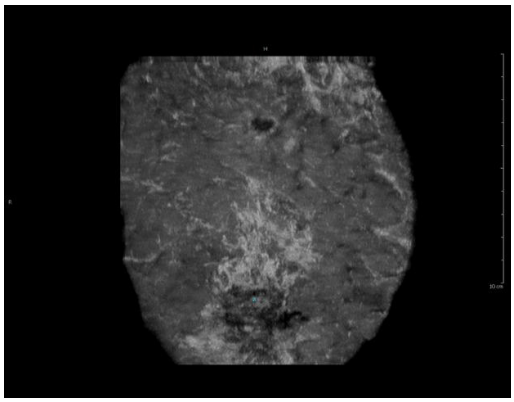
Use of Automated Breast Volume Scanning in Breast Evaluations

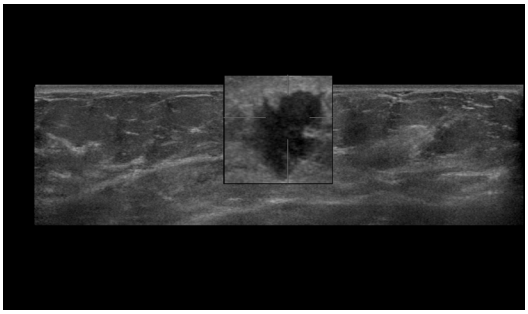
Patient History

A 66 year old female patient presented with a palpable lump in her left breast. She was initially referred for a mammogram and ultrasound. The results of these were inconclusive and she was sent for a second opinion. A repeat mammogram demonstrated involution of the breast tissue and a new nodule but no microcalcifications. An automated breast volume scan was therefore performed to provide more information.

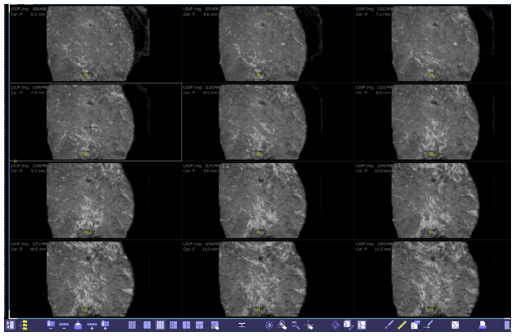


A mass with irregular borders was noted in the coronal scan.

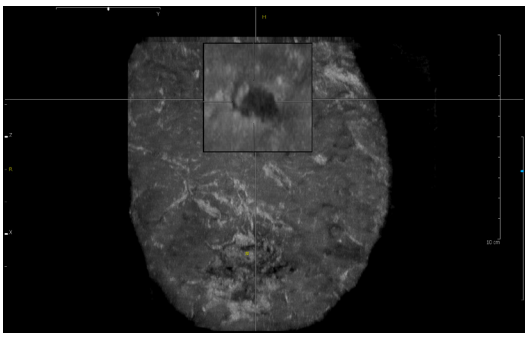
Image Findings



A solid lesion with irregular borders was noted in the transverse scan through the left breast (with magnification).



When viewing in MultiSlice, tissue can be visualized from skin line to chest wall (in whatever slice thickness you have chosen) in a series of images. An additional benefit when first understanding the coronal plane.

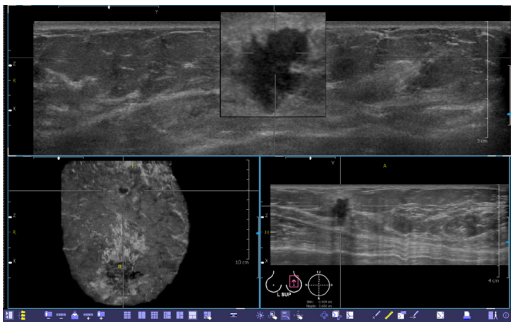


A mass with irregular margins is clearly noted in the coronal scan (using the magnify tool).

Dr. D.A. Clevert, M.D.
University of Munich - Grosshadern Campus

www.siemens.com/healthcare

SIEMENS



The location of the lesion is clearly referenced in the body marker and clock position. In this Left Superior view, the lesion is located at 12 o'clock, 0.93cm from the skin and 7.65cm from the nipple. The three orthogonal views provide all the information needed for precise documentation and depiction of the lesion.

Clinical Outcome

The diagnosis obtained using the ACUSON S2000™ Automated Breast Volume Scanner showed a high risk for breast cancer, so the patient proceeded directly to surgery. The 3D volume data sets enabled the lesion with its associated tissue distortion and spiculation to be viewed in the coronal plane – enabling a decision to proceed directly to surgical removal of the nodule. The initial histology showed poorly differentiated adenocarcinoma from the invasive lobular subtype (accounts for 5 to 10% of breast cancers). In the follow-up immunohistology they found that this cancer was a poorly differentiated, invasive ductal cancer. No biopsy was performed; the diagnosis was obtained from the surgically removed nodule.

Ultrasound Solution

The American Cancer Society estimates that 212,920 women will be diagnosed with breast cancer in the United States this year. Significantly more biopsies than this will be performed to diagnose these cancers; the American Cancer Society reports that 80% of breast biopsies are found to be benign. An imaging technique with higher sensitivity and specificity would be helpful to reduce unnecessary biopsies.

The ACUSON S2000 ABVS provides reproducible, standardized views of the breast including the coronal plane, which has an additional value in being familiar to surgeons for surgical planning. The volumes captured allow for more diagnostic information to be available. Additionally, the automated procedure is comfortable and much quicker, reducing the exam time from approximately 20-30 minutes for a full hand-held examination to 8-10 minutes, which helps to reduce patient anxiety.

Standalone clinical images may have been cropped to better visualize pathology.

Local Contact Information
Siemens Medical Solutions USA, Inc.
51 Valley Stream Parkway
Malvern, PA 19355-1406 USA
Telephone: +1-888-826-9702
www.usa.siemens.com/healthcare

Europe: + 49 9131 84-0
Asia Pacific: + 65 6490 6000

Global Business Unit Address/ Legal Manufacturer
Siemens Medical Solutions USA, Inc.
Ultrasound
1230 Shorebird Way
Mountain View, CA 94043 USA
Telephone: +1-888-826-9702
www.siemens.com/healthcare