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Automated breast volume scanning (ABVS) and advanced elastography in breast cancer detection

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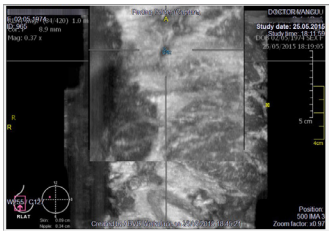
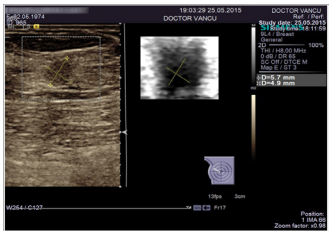
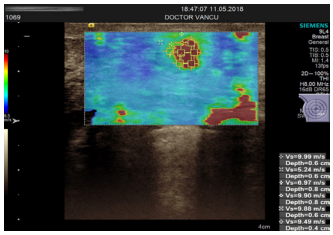
The moment of detection of early breast ultrasound finding, its initial interpretation and classification are very important for further assessment. It is important to detect elements of ultrasound image that help in differentiating the nature of such findings and avoiding their misinterpretations. In our group practice, ABVS and advanced elastography, shear wave elastography (SWE) using virtual touch imaging quantification (VTIQ), are performed by two physicians at one location, for different indications and also on asymptomatic women on their request, using Acuson S2000 HELX ABVS. From a sample of 2800 patients, between 15-82 years old, a selection of 216 cases was analysed, including multiple benign changes and malignant looking benign changes, according to the ultrasonographic features of ABVS to the ACR BI-RADS US classification system. There were various findings, from large tumors to small malignant tumors (4 mm diameter), including two cases of mucinous cancers, with completely benign appearance in conventional handheld ultrasonography at the moment of detection, but with retractile image on coronal view during ABVS, linked with elastography changes, confirmed by biopsy. Misinterpretations are risks that are always present in breast ultrasound, but ABVS and advanced elastography are the most effective methods for early detection of breast lesions, without irradiation, painless, at any age, during any physiological statement. Adding ABVS to mammography and MRI improved callback rates and confidence in callbacks for dense-breasted women. Size of pure ductal carcinom *in situ* on ABVS showed a higher correlation coefficient with histopatology than the other methods.







Biography

Mihaela Vancu has received her Residency Training in Internal Medicine, in 1994, and graduated in General Ultrasonography training, in 1996. She has received her PhD Degree from the University of Medicine and Pharmacy Cluj-Napoca, Romania, in 2002. Since 2002, she is the Head of the Ultrasonography Department of the Center of Excellence in Ultrasonography at Doctor Vancu, Craiova, Romania. She has seven years of experience in using strain elastography and automated breast volume scanner (ABVS), first equipment in East Europe, and four years in advanced shear wave elastography with virtual touch imaging quantification. She is also a Trainer for international ABVS users.

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