

## Case Study

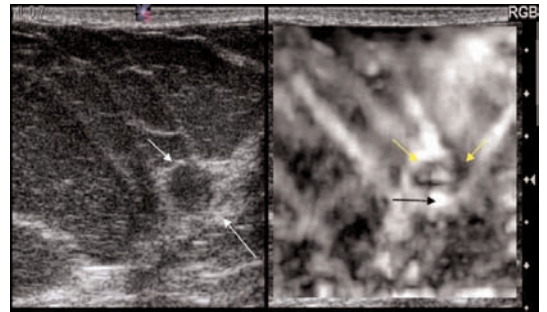
# Ultrasound Elasticity in Breast Imaging



### Patient History

A routine screening mammogram of a 45-year-old female patient identified a 5mm lesion. The patient was referred for an ultrasound study and ultrasound-guided core biopsy. In this case, the initial ultrasound revealed a mass with a solid appearance and irregular margin, which was classified as a BIRAD 4 lesion and suspected malignancy. Prior to performing the biopsy, an elastogram was done to provide additional information.

### Image Findings



The 2D-mode ultrasound image shows 5mm lesion with solid appearance and irregular margins. Classified as BIRAD 4, this lesion would be biopsied. The elasticity image demonstrates a "bull's eye" pattern (yellow arrows) with posterior high signal (black arrow), indicative of a cyst.

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## Clinical Outcome

The elasticity exam indicated that her lesion had characteristics of a complex cyst and not solid. Knowing this guided the decision to perform a fine needle aspiration rather than a core biopsy. The lesion was aspirated with complete resolution of the cyst and pathology confirmed a benign cyst.

## Ultrasound Solution

The American Cancer Society reports that 80% of biopsied breast lesions are found to be benign. Mammography, ultrasound, and MRI have low specificity in determining if lesions are benign or malignant, resulting in biopsy of many benign lesions. An imaging technique with higher specificity could help eliminate a large number of biopsies while still detecting all the breast cancers.\*

eSie Touch™ elasticity imaging is a new method that visualizes the relative stiffness of tissue. It is performed with a conventional

ultrasound unit and a standard, high-frequency linear ultrasound transducer. Software analysis of the frame-to-frame difference in a speckle pattern with mild compression produces a display of the “softness” or “hardness” of a lesion known as the strain image. The additional information provided by the elasticity image may provide further insight into the potential pathology.

eSie Touch elasticity imaging is a trademark of Siemens AG.

\* Source: American Cancer Society

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