

Breast Lesion Characterization Using Contrast Mammography

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BRIEF DESCRIPTION

Breast cancer is the most common cancer in women in the U.S. As with any cancer, early detection and treatment is critical in minimizing the severity of the tumor and risk of death. Researchers at UCI School of Medicine have developed a novel contrast-enhanced mammography technique capable of distinguishing between benign and malignant lesions in breast tissue.

FULL DESCRIPTION

Contrast mammography images the breast after an injection of a contrast agent, which concentrates in the area of tumors (due to the high vascularity of these types of lesions). This traditional method, however, has limited accuracy, as detection of the contrast agent signals may be obscured by the adipose (fatty) and glandular tissues of the breast. UCI researchers have modeled the breast as a two-compartment structure, and applied a new calculation approach that subtracts extraneous tissue “noise” from the contrast agent signal. This technique can accurately correlate the measured signal to the thickness and severity of the lesion, unlike any other current contrast mammography methodology.

SUGGESTED USES

(1) Screening and diagnosis of breast cancer; and (2) Monitoring lesions throughout treatment.

ADVANTAGES

(1) Less expensive and less time-consuming than other methods; (2) Currently, contrast-enhanced MRI is the most sensitive employed tool, but is prohibitively expensive or unavailable to many patients; (3) Better at discerning benign and malignant lesions, thus limiting the number of biopsies and false-positive diagnoses; (4) Traditional contrast mammography does not have the sensitivity to differentiate benign and malignant lesions; and (5) This technique analyzes tissue vascularity and correlates lesion thickness more accurately using novel calculations of contrast agent signals.

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OTHER INFORMATION

KEYWORDS

breast cancer, women health, tumor, risk of death, contrast, enhanced mammography, benign, malignant, lesion, breast tissue, contrast agent, high vascularity, lesion, obscured, adipose, fatty, glandular tissue, subtract, noise, thickness, severity

CATEGORIZED AS

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