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Case Report

The Fleming Method for Tissue and Vascular Differentiation and Metabolism-Finding breast cancer in women with breast implants

cancer can be obtained in women with dense breasts and/or breast implants using FMTVDM. Elevated measurements reveal both inflammation and cancer in this patient.

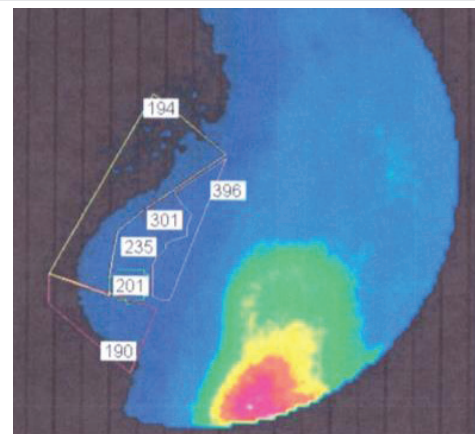


Figure 1: FMTVDM imaging showing FMTVDM quantification of various regions of the breast and breast implant. The color is for human visual purposes and is not diagnostic.

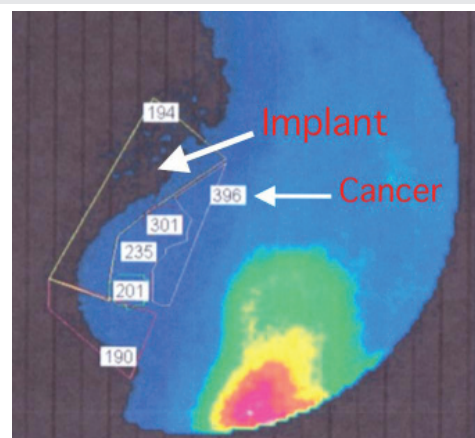


Figure 2: FMTVDM imaging with identifying markers for the breast implant and cancer. The color is for human visual purposes and is not diagnostic.

Women with both dense breasts and breast implants present a special challenge for consideration due to the increased incidence of false-positives and false-negatives with mammography [1]. Molecular Breast Imaging [MBI] has provided limited proven benefit until recently, when improvements in camera calibration, enhancement and quantification [2,3], resulted in the ability to differentiate tissue based upon measurable changes in regional blood flow and metabolism [4].

In a 54-year old Caucasian woman with sub-mammary breast implants and a family history of breast cancer, molecular breast imaging using *FMTVDM was performed and is shown in Figure 1, including FMTVDM obtained measurements. The majority of the breast tissue reveals either *normal* range FMTVDM values or *inflammatory* changes. However, cancer is also present with measured values of 301 and 396. These measured FMTVDM values are measurements of the tissue regional blood flow and metabolism. The breast implant is neither metabolically active nor has blood flow. Consequently it qualitatively appears as a blackened area on the imaging reflecting no isotope presence. Figure 2 includes arrows establishing the breast implant and cancer regions.

Teaching point: Non-invasive assessment and measurement of breast tissue looking for evidence of inflammation or

***FMTVDM:** The Fleming Method for Tissue and Vascular Differentiation and Metabolism

Acknowledgement

*FMTVDM: The Fleming Method for Tissue and Vascular Differentiation and Metabolism issued to first author. The patient signed informed consent at the Nevada Imaging location for the procedure and release of results for publication.

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