Assessing the Potential of Thermal Imaging in Recognition of Breast Cancer. 2015

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Abstract

BACKGROUND:

Breast cancer is a common disorder in women, constituting one of the main causes of death all over the world. The purpose of this study was to determine the diagnostic value of the breast tissue diseases by the help of thermography.

MATERIALS AND METHODS:

In this paper, we applied non-contact infrared camera, INFREC R500 for evaluating the capabilities of thermography. The study was conducted on 60 patients suspected of breast disease, who were referred to Imam Khomeini Imaging Center. Information obtained from the questionnaires and clinical examinations along with the obtained diagnostic results from ultrasound images, biopsies and thermography, were analyzed. The results indicated that the use of thermography as well as the asymmetry technique is useful in identifying hypoechoic as well as cystic masses. It should be noted that the patient should not suffer from breast discharge.

RESULTS:

The accuracy of asymmetry technique identification is respectively 91/89% and 92/30%. Also the accuracy of the exact location of identification is on the 61/53% and 75%. The approach also proved effective in identifying heterogeneous lesions, fibroadenomas, and intraductal masses, but not ISO-echoes and calcified masses.

CONCLUSIONS:

According to the results of the investigation, thermography may be useful in the initial screening and supplementation of diagnostic procedures due to its safety (its non-radiation properties), low cost and the good recognition of breast tissue disease.

Web link: http://www.ncbi.nlm.nih.gov/pubmed/26745126