

Letter to the Editor: Screening for Breast Cancer Using Breast Illumination Technique

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Breast cancer (BC) is a disease affecting both developed and developing countries and ranks as the fifth cause of death from cancer overall and is still the leading cause of cancer mortality in women¹. In Egypt, BC is the most common cancer among women, representing 18.9% of total cancer cases (35.1% in women and 2.2% in men)², according to one Egyptian Population Based Cancer Registry, BC was the most frequent cancer among females as it represented 17.5% of all incident cancers, accounting for 35.7% of all newly diagnosed female cancers³. Mammography has been established as the primary method for BC screening and nearly 35 to 45% of non-palpable cancers are detected as microcalcifications in mammographic studies⁴. The screening strength of mammography is based on its high negative predictive values (NPV) ranging from 99.8% to 100% but with wide range of positive predictive values (PPV) of 4.3% to 52.4% coupled with false positive rates (1.5% to 24.1%) resulting in unnecessary biopsies. Mammography has an overall sensitivity and specificity of 86.6% and 96.8% respectively^{5,6}. Breast illumination (breast light) technique is a simple method for BC screening and capable of detecting about 29% of non-palpable tumors. It is comparable to mammography in correctly confirming the absence of cancer with 82 to 85% specificity compared to 75 to 95% in mammography with malignancy detection rate between 76% and 83% (mammography screening detection rates vary from 60-90% depending on age and breast density)⁷. Breast light (BL) is an accessible and easy to use device, a handheld tool that transilluminates the breast with a visible harmless red-light (617nm) that is absorbed by hemoglobin so that areas of high vascularity (such as malignant tumors) should appear black. It is used in a darkened room and held tightly to the skin and works by shining a bright red light through the breast tissue, as the light passes through breast tissue it interacts with the body's hemoglobin to highlight dark areas where blood vessels are present, the presence of dark clusters should warrant further investigations. BL has many advantages including cost, simplicity in usage, and no radiation problem especially to which young women are sensitive; BL gives a rather good view in young patients in whom mammography gives poor penetration; and it directly visualizes large lesions such as cysts and tumors, and can facilitate obtaining an appropriate specimen by fine needle biopsy⁸. Iwuchukwu et al. in 2010⁹ had evaluated BL on 300 subjects whom were referred to a breast clinic in Sunderland for a variety of reasons.

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Patients were examined with BL before their standard clinical assessment and the findings were compared to those seen with mammography, ultrasound and biopsy. BL had detected 12 out of 18 of biopsy confirmed malignancy giving a sensitivity of 67% and correctly identified as negative 240 out of 282 breasts giving a specificity of 85%. Also, Labib et al in Egypt¹⁰ evaluated breast light on 310 females attending the Mammography Unit at the Radiology Department in the National Cancer Institute, Cairo University for screening, diagnosis and follow up of breast cancer. They reported a sensitivity of 93.0% and specificity of 73.7% with a total accuracy of 88.2% for BL in BC detection. The previous study concluded that BL apparatus is a promising easy-to-use tool to screen for BC suitable for primary health care physician or at-home use.

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