

عنوان مقاله:

Early Detection of Breast Cancer: a Study on the Breast Blood Variability by the Breast Phantom Accompanied by Vessels

محل انتشار:

دهمین کنگره بین المللی سرطان پستان (سال: 1393)

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خلاصه مقاله:

Background: The use of optical spectroscopy as a powerful device for rapid and non-invasive diagnosis of breast cancer was considered. The breast tissue condition can be predicted by using a measuring in the vessels optical properties variety, such as absorption, distribution or transmission. Methods: In this study blood samples prepared at different concentrations, using a spectrometer (USB4000 Fiber Optic Spectrometer, USA) and light source near-infrared provided by the LED (Phwee). Experiment performed using breast phantom accompanied by vessels. Results: The change on the absorption amounts in the blood samples with different concentrations of hemoglobin was determined. Absorption in blood samples from normal concentration of hemoglobin, oxy-hemoglobin were 1.1 and 1.12, respectively. But at two and four times concentrations of hemoglobin as abnormal blood, were 1.60 and 1.70, respectively. Conclusion: The results absorption values in the normal and oxy-hemoglobin were similar and indicating a healthy tissue. In samples with two and four times concentration of hemoglobin, increasing on the absorption rate was existed. Thus, an increasing on the amount of blood supply can be predicted to cells going to be cancerous.

کلمات کلیدی:

absorption, hemoglobin, spectrometers, breast cancer

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