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OCCULT LESIONS LOCALIZATION AND “IN VIVO” MARGINS EVALUATION OF BREAST CARCINOMA DETECTED BY NEW HYBRID TECHNIQUE USING RADIOFLUORESCENCE—A PILOT STUDY

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This pilot study presents a new technique of hybrid marking of non-palpable breast lesion with surgical margins evaluation “in vivo,” which we referred to as FLuorescence And Seed for Hybrid Intraoperative Evaluation (FLASHIE). Seven women, with one lesion each, were submitted to a previous implantation of 125-iodine seed in the center of the suspected area and then were injected with indocyanine green (ICG). During surgery, an optonuclear probe was used to detect gamma radiation and fluorescence. Gamma detection mode was used to locate lesions, and then fluorescence mode, to analyze the ICG concentration, which allowed distinguishing a benign tumor and six malignant lesions. These lesions were confirmed by conventional pathological and immunohistochemical analysis. In the malignant positive cases, fluorescence was also used for the orientation of the excision of the tissue in order to obtain more adequate surgical margins. This new promising technique may prevent the persistence of post-surgery tumor residues.

Keywords: Surgical Margins Evaluation; Fluorescence; 125-Iodine Seed; Breast Cancer.