

Medical > In Vivo > Non-Melanoma Skin Cancer Research > Basal Cell Carcinoma

42

Novel approaches to imaging basal cell carcinoma.

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ABSTRACT

The gold standard of diagnosis for nonmelanoma and melanoma skin cancer has been skin biopsy with routine paraffin embedded hematoxylin and eosin histopathology. This practice is frequently carried out on suspicious lesions to rule out a malignant process. Therefore, as a result, many biopsies are done on benign lesions. Unlike other fields of medicine that rely on noninvasive imaging modalities, the use of imaging devices in dermatology has not been as robust. This has been mainly due to the limited resolution offered by imaging devices that is needed to detect malignant changes in the cutaneous layers. However, the demand for more efficient in vivo and ex vivo imaging tools to reduce the amount of biopsies have led to new areas of investigation using noninvasive modalities to augment the clinical diagnosis of skin cancer. The use of noninvasive imaging both in vivo and ex vivo has the potential to increase efficiency of diagnosis and management, decrease healthcare cost, improve clinical care and enhance patient satisfaction. **KEYWORDS:** Mohs micrographic surgery; Raman spectroscopy; basal cell carcinoma; fluorescent confocal microscopy; laser ablation; multispectral fluorescence lifetime tomography; noninvasive imaging; nonmelanoma skin cancer; optical coherence tomography; reflectance confocal microscopy.