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### Use of In Vivo Confocal Microscopy in Malignant Melanoma: an Aid in Diagnosis and Assessment of Surgical and Nonsurgical Therapeutic Approaches

*Curiel-Lewandrowski C, Williams CM, Swindells KJ, Tahan SR, Aster S, Frankenthaler RA, González S.; Arch Dermatol. Sep 2004; 140(9):1127-32.*

#### ABSTRACT

**BACKGROUND:** Melanomas with poorly defined borders, lack of pigmentation, lentiginous extension, and location in cosmetically sensitive regions represent diagnostic and therapeutic challenges. Repeated surgical reexcisions are frequently required to achieve tumor-free margins. The use of reflectance mode confocal microscopy as a noninvasive method has shown to be a promising tool for diagnosing pigmented lesions in vivo.

**OBSERVATIONS:** We report 3 clinical cases of melanoma: amelanotic melanoma (case 1), locally recurrent melanoma (case 2), and lentigo maligna melanoma (case 3). In case 1, in vivo confocal microscopy was instrumental in making the diagnosis and in monitoring the response to imiquimod therapy for in situ residual disease. It was also used to successfully delineate preoperative surgical margins in cases 2 and 3.

**CONCLUSION:** As new methods for treating melanoma emerge and become more available, confocal microscopy can play a significant role by improving sensitivity in diagnosis, by increasing rates of successful initial excision, and by serving as a noninvasive means of monitoring therapy.