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244 | Detection of Clinically Amelanotic Malignant Melanoma and Assessment of Its Margins by In Vivo Confocal Scanning Laser Microscopy (CSLM)

Busam KJ, Hester K, Charles C, Sachs D, Antonescu C, González S, Halpern AC.; *Arch Dermatol. Jul 2001; 137(7):923-9.*

ABSTRACT

BACKGROUND: Near-infrared confocal scanning laser microscopy (CSLM) represents a novel imaging technique for in vivo microscopic analysis of skin lesions, including pigmented lesions.

OBJECTIVES: To investigate the feasibility of detecting a clinically amelanotic malignant cutaneous melanoma using CSLM and to explore the use of this technique for assessing its margins.

PATIENTS AND METHODS: Two lesions from 2 patients were imaged and analyzed using CSLM. Sites suspected to represent melanoma or benign skin on CSLM were marked as such; then, biopsy specimens were obtained for diagnosis using conventional histological analysis. Both lesions were stained for melanin pigment and analyzed immunohistochemically for the expression of melanosomal markers. In 1 case, a biopsy specimen was also examined with electron microscopy.

RESULTS: The images obtained using CSLM allowed recognition of an abnormal intraepidermal melanocytic proliferation that was distinctly different from normal skin. Comparison of the sites examined using CSLM and subsequently using conventional histological methods revealed that CSLM correctly identified intraepidermal melanoma and benign skin. Fontana-Masson stains and immunohistochemical and ultrastructural studies showed that clinically amelanotic melanoma cells contained melanosomes and rare melanin granules.

CONCLUSIONS: We demonstrated, for the first time, the detection of clinically amelanotic melanoma using CSLM. This technique may aid in the early detection of clinically barely visible or nonpigmented melanomas and may facilitate preoperative noninvasive assessment of their margins.