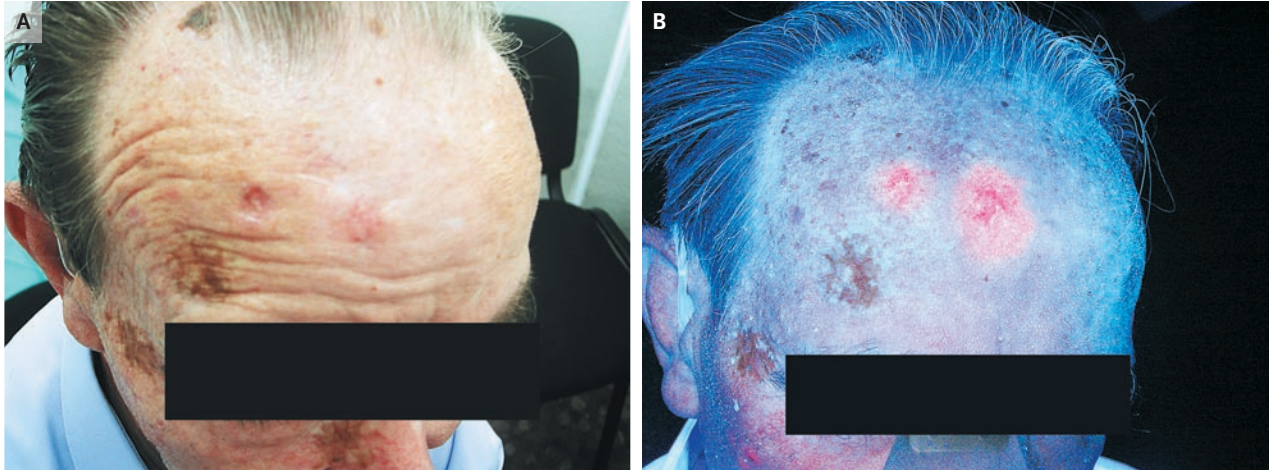


## IMAGES IN CLINICAL MEDICINE

## Fluorescence Diagnosis of Subclinical Actinic Keratoses



**P**HOTODYNAMIC THERAPY IS A NONINVASIVE THERAPY FOR NONHYPERKERATotic actinic keratoses and basal-cell carcinoma. Photodynamic therapy involves the activation of a photosensitizing drug by visible light to produce activated oxygen species within target cells, resulting in their destruction. Commonly used topical photosensitizers are aminolevulinic acid (ALA) and the methyl ester of ALA (MAL), which act as precursors of the endogenous photosensitizer protoporphyrin IX (PpIX). In addition to its therapeutic uses, fluorescence emitted by MAL-induced PpIX may be useful in providing a fluorescence diagnosis of cutaneous lesions. This permits the detection of otherwise occult areas of abnormal skin (Panel A). Tumor margins can also be delineated with the use of a Woods ultraviolet lamp before surgery, radiotherapy, or therapeutic illumination with a photodynamic-therapy lamp (Panel B). Areas of involved skin exhibit pink fluorescence in the presence of activated PpIX. In this 74-year-old man, an actinic keratosis was diagnosed on the basis of MAL, applied typically under occlusion on the scalp and forehead for 3 hours, and biopsy. Pathological examination of the involved skin revealed actinic keratosis. Photodynamic therapy was administered after the application of MAL with the use of 630-nm red-light irradiation for 8 minutes. Complete remission was achieved, with no recurrence at a 10-month follow-up visit.

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