In situ amelanotic melanoma represents a diagnostic and therapeutic challenge for clinicians. Poor demarcation of these lesions often results in repeated therapeutic intervention until appropriate clearance has been achieved. Reflectance confocal microscopy (RCM) is a noninvasive bedside imaging modality which allows real-time visualisation, to a near-histological level, of the epidermis and reticular dermis. We present a case of an amelanotic melanoma in situ in which reflectance confocal microscopy margin mapping allowed for demarcation of the melanocytic proliferation and targeted therapeutic intervention with topical imiquimod. Reflectance confocal microscopy was further utilised for noninvasive assessment of therapeutic response. KEYWORDS: amelanotic melanoma; margin mapping; reflectance confocal microscopy PMID: 30592021 DOI: 10.1111/ajd.12986