Confocal microscopy of skin cancers: translational advances toward clinical utility.


ABSTRACT
Recent advances in translational research in and technology for confocal microscopy of skin cancers, toward clinical applications, are described. Advances in translational research are in diagnosis of melanoma in vivo, pre-operative mapping of lentigo maligna melanoma margins to guide surgery and intra-operative imaging of residual basal cell carcinomas to guide shave-biopsy. Advances in technology include mosaicing microscopy for detection of basal cell carcinomas in large areas of excised tissue, toward rapid pathology-at-the-bedside, and development of small, simple and low-cost line-scanning confocal microscopes for worldwide use in diverse primary healthcare settings. Current limitations and future opportunities and challenges for both clinicians and technologists are discussed.