PRESURGICAL MARGIN DEFINITION OF EXTRAMAMMARY PAGET'S DISEASE BY USING IN VIVO HARMONIC GENERATION MICROSCOPY

Ming-Rung Tsai,1 Yi-Hua Liao,2 and Chi-Kuang Sun1,3,4
1Molecular Imaging Center, National Taiwan University, Taipei, 10617, Taiwan
2Department of Dermatology, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, 10051, Taiwan
3Department of Electrical Engineering and Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, 10617, Taiwan
4Institute of Physics & Research Center for Applied Sciences, Academia Sinica, Taipei, 11529, Taiwan
E-mail: d96941005@ntu.edu.tw

KEY WORDS: Harmonic generation biopsy, EMPD, In vivo imaging, Tumor margin

Extramammary Paget’s disease (EMPD) is a skin adenocarcinoma and the margin of EMPD is difficult to define due to its appearance.1 The presurgical evaluation to accurately define the surgical margins of the tumor is critical for the efficacy of treatment.2 Recent clinical studies indicated that the harmonic generation microscopy (HGM) could provide the ability to in vivo diagnosis human skin noninvasively with a histopathological resolution.3 It is thus desired to investigate if the endogenous contrast and the penetration capability provided by the HGM would be high enough to differentiate EMPD versus normal skin tissues for presurgical definition of tumor margin. In this report, in vivo HGB was performed on patients with EMPD before surgery. In all patients after comparing with the histology of the removed tissues, HGM shows great promise to define the tumor margin by revealing the histopathological features of EMPD such as the presence of Paget's cells with amphophilic, granular cytoplasm and prominent atypical nucleus noninvasively in a remote manner. This work is sponsored by NHRI, Taiwan (NHRI-EX103-9936EI).

![Image](image.png)

**Figure** (a) In vivo HGB image and (b) its histological image form the patient with EMPD show the Paget's cells are large with amphophilic, granular cytoplasm and prominent atypical nucleus. (image size: 180 μm × 180 μm) purple: THG.