

## Medical > In Vivo > Non-Melanoma Skin Cancer Research > Basal Cell Carcinoma

# 39

### Carbon Dioxide Laser Ablation of Basal Cell Carcinoma with Visual Guidance by Reflectance Confocal Microscopy: A Proof of Principle Pilot Study.

Hibler BP, Sierra H, Cordova M, Phillips W, Rajadhyaksha M, Nehal KS, Rossi AM, *Br J Dermatol.* 2016 Jan 23. doi: 10.1111/bjd.14414.

#### ABSTRACT

**BACKGROUND:** Laser ablation is an alternative, non-surgical treatment modality for low-risk basal cell carcinoma (BCC); however, lack of confirmative tumour destruction or residual tumour presence has been a limiting factor to adoption. Reflectance confocal microscopy (RCM) provides non-invasive, cellular-level resolution imaging of the skin and is capable of identifying tumour. **OBJECTIVE:** To evaluate the use of RCM to guide carbon dioxide (CO<sub>2</sub>) laser ablation of BCC, confirm destruction, and correlate findings with histology. **METHODS:** RCM was used pre-ablation to evaluate for features of BCC. Ablation was performed with a CO<sub>2</sub> laser, and the response rapidly assessed using handheld RCM to evaluate for residual tumour. Confirmative pathology was used to verify confocal imaging. **RESULTS:** RCM imaging identified tumour pre-ablation with features not identified on normal, surrounding skin. Post-ablation, RCM documented complete removal of tumour in six cases and residual tumour in two. Histologic examination identified the ablated area and confirmed clearance of tumour in the six aforementioned cases and corroborated confocal findings for residual tumour in the other two cases. **CONCLUSIONS:** We report successful treatment of superficial and nodular BCC using CO<sub>2</sub> laser ablation augmented by RCM imaging for pre-ablation guidance and verification of tumour removal post-ablation. Akin to complete circumferential and deep margin control techniques, using RCM helps to map peripheral and deep BCC margins to hone in on areas exhibiting persistent tumour after ablation. CO<sub>2</sub> laser ablation visually guided by RCM can help circumvent previously cited limiting factors of laser ablation for tumour destruction by providing cellular-level resolution imaging of tumour and margin assessment in between each laser pass and post-ablation. This article is protected by copyright. All rights reserved. This article is protected by copyright. All rights reserved.