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Evaluation of thermal effects during vascular lesions treatment by dye laser

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Abstract: The determination of optimum values for laser parameters during laser application on patients' skin to cure several kinds of tissue ailments is of critical importance. In this work, we employed thermal camera to measure the spatial distribution during laser-skin treatment sessions to achieve that purpose, then followed that by measuring the effective time of skin heating. Where we built an image processing stage to analysis the thermal images in the quest to search for the critical safe temperature that can set the limit for better treatment and less side effects. The work is supported by experimental data during actual treatment sessions, namely during vascular lesion treatment.

This research supportsthe possibility of monitoring the temperature changes on skinduring laser treatment in order to avoid any undesired damage,which helps to find the optimum laser treatment parameters.

Keywords: medical laser applications, thermal effects of laser, dye laser, thermal imaging, Port Wine Stain.

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