

ORIGINAL ARTICLE

Fractional CO₂ laser to improve noticeable scars after skin cancer surgery: An appraisal by the patients, laypersons, and experts

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Abstract

Ablative fractionated carbon dioxide (fCO₂) laser may be a useful tool to improve noticeable scars after skin cancer surgery. Therefore we evaluated 40 patients who have been treated with fCO₂ laser for facial scars after skin cancer surgery. This retrospective study is based on blinded evaluation of pre- and postoperative photographs. Patients (n = 40), laypersons (n = 5) and experts (n = 5) evaluated the esthetics and the Vancouver scar scale as primary endpoints. Secondary endpoints included patient satisfaction and treatment safety. Patients, laypersons and experts consistently assessed a significant improvement of scar quality and appearance after fCO₂ laser treatment, which was paralleled by high patient satisfaction. In conclusion, ablative fCO₂ laser is effective in improving noticeable postsurgical scars. Patients are highly satisfied with post-laser results.

KEYWORDS

facial scars, fractional CO₂ laser treatment, skin cancer surgery

1 | INTRODUCTION

Skin cancer has become the most common neoplasia in humans. In the United States, approximately five million skin cancers are surgically removed each year. The face is by far the most concerning location for skin cancer. Despite optimal surgical technique, postoperative scars may remain noticeable or unsightly.

fCO₂ laser therapy has emerged as an effective tool to improve disturbing skin scars and is increasingly used to treat unsightly scars post-skin cancer surgery. Thus it helps improve psychological impairment and raise patients' self-esteem.¹

Several scientific studies have proven that fractional ablative and non-ablative laser systems achieve a constant functional and cosmetic improvement of scars.²⁻⁹ These lasers work according to the principle of fractional photothermolysis and lead to dermal

collagen remodeling and neocollagenesis.¹⁰ fCO₂ can be utilized earlier postoperatively than conventional ablative CO₂ laser, as well as having a shorter postprocedural recovery time.^{2,5} We conducted this retrospective study on 40 consecutive patients, in order to evaluate the results of our fCO₂ laser treatment for facial scars after skin cancer surgery.

2 | PATIENTS AND METHODS

The surgical team of the Department of Dermatology, University Hospital of Zurich, offers skin cancer surgery to approximately 2500 patients annually. In the period of 2015–2019, 47 patients with esthetically disturbing postoperative facial scars were treated with a fCO₂ laser. All of these patients were traced and contacted for this

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