

# LASER SKIN RESURFACING AFTER DERMABRASION OF ACNE SCARS

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## Summary

Acne scars show a great variety in their clinical appearance and therefore very often cannot be effectively corrected by a single treatment modality alone. Traditionally chemical peeling is continued with punch excision and also by dermabrasion. Laser skin resurfacing has been added to the numerous treatment options for acne scars. Whereas laser resurfacing showed good results in mild acne scarring, severe atrophic acne scars achieved only moderate results. Therefore, in the modern post-acne treatment the whole spectrum of adapted methods should be available. We would like to present as an example one patient with severe deep scarring who has been firstly flattened by dermabrasion following a more exact modelling of the scar borders by laser skin resurfacing resulting in a much better result than dermabrasion alone.

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## Riassunto

Le cicatrici da acne si manifestano clinicamente con modalità diverse ed è perciò difficile correggerle utilizzando un'unica metodologia. Tradizionalmente si utilizzano peeling e dermoabrasione; ora a questi trattamenti si è aggiunto l'uso del laser.

La metodologia del laser applicato alla cute dà sicuramente buoni risultati in tutte le forme di acne leggera, mentre limitati sono i risultati che si ottengono in caso di cicatrice profonda da acne. Per questi motivi nei trattamenti post-acne è necessario utilizzare insieme metodologie differenti.

Con questo lavoro desideriamo presentare come esempio il trattamento effettuato su di un paziente affetto da cicatrici profonde che è stato trattato prima con dermoabrasione seguita successivamente dal trattamento dei bordi cicatriziali mediante l'utilizzo del laser. Sono stati ottenuti così risultati interessanti, sicuramente superiori al solo uso della dermoabrasione.

## INTRODUCTION

Traditionally acne scars are treated by punch excision and grafting or direct closure, often followed by dermabrasion with a diamant mill. For milder acne scars also diverse chemical peeling methods with various substances are performed.

In the last ten years laser skin resurfacing became a favoured method in the therapy of photoaged skin. Meanwhile it is used for the treatment of scars, especially acne scars. In contrast to elderly CO<sub>2</sub> lasers nowadays pulsed and ultrapulsed CO<sub>2</sub> lasers but also CO<sub>2</sub> lasers with scanning devices enable a more exact superficial dermabrasion with reduced or without thermal damage of the skin(1,2). The long lasting good results are due to the shrinking of collagen fibres besides the reepithelization.

In contrast, ER:YAG lasers are characterized by a high absorption in water and so their application resulted solely in reepithelization but not in damage, and change in the collagen structure.

Therefore, therapy studies of deeper wrinkles and scars CO<sub>2</sub> lasers showed better results than ER:YAG lasers (3).

Whereas laser skin resurfacing improves mild acne scars excellently, in severe acne scars this procedure achieved only moderate results (4). Also, combinations of laser skin resurfacing and punch excision have then been used (5), and recently a three-staged operation was proposed: first focal chemical peeling followed by CO<sub>2</sub> laser skin resurfacing, scar excision and punch grafts, and finally dermabrasion to treat the remaining scars (6).

## MATERIAL AND METHODS

In the past we treated a 35 years old female with deep scars resulting from acne vulgaris and an overlying acne excoriée des jeunes filles. In an interval of several years we have done punch-grafting and dermabrasio for three times. Although the results were good some discrete

remaining scars provoked artefacts by the patient herself with deeper scarring.

Because of the strong psychological complaints we finally initiated a laser skin resurfacing using a CO<sub>2</sub> laser with scanner (Silk touch, Fa. Limmer). In endotracheal anesthesia 1-3 skin layers have been removed depending on the depth of the scars (power: 5 watt, pulse extent: 0,2 sec., pulse frequency: 0,1 sec.). To protect the patient from herpes virus reactivation we gave orally valaciclovir 3x 1000 mg/day one day before operation until six days after laser therapy. The local treatment was for two days a corticosteroid ointment followed by an unspecific wound dressing for 14 days.

## RESULTS

The patient was very satisfied by the impressive scar flattening. The postoperative erythema diminished in about four weeks without hyperpigmentation.

## CONCLUSIONS

Because of the clearly better result of laser skin resurfacing after dermabrasion in comparison to dermabrasion alone, we propose a two-staged procedure for the treatment of deep acne scars.

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