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Post Acne Atrophic Scars Treatment with ND 1064nm Applicator

Case Study

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1. introduction

Atrophic scarring is a common and permanent complication of acne vulgaris. It has high prevalence, significant impact on quality of life, and therapeutic challenge for dermatologists. The treatment of atrophic acne scars varies depending on the types of acne scars and the limitations of the treatment modalities in their ability to improve scars. Therefore, many options are available for the treatment of acne scarring, including chemical peeling, dermabrasion, laser treatment, punch techniques, fat transplantation, other tissue augmenting agents, needling, and combined therapy. Various modalities have been used to treat scars, but limited efficacy and problematic side effects have restricted their application. Inflammatory acne lesions can result in permanent scars. Scarring occurs early in acne and may affect some 95 percent of patients with this disease, relating to both its severity and delay before treatment. Acne scars can be classified into three different types: atrophic, hypertrophic, or keloidal. Atrophic acne scars are the most common type. The pathogenesis of atrophic acne scarring is most likely related to inflammatory mediators and enzymatic degradation of collagen fibers and subcutaneous fat. The most basic and practical system divides atrophic acne scars into three main types: ice pick, rolling, and boxcar scars. (*J Clin Aesthet Dermatol. 2015 May; 8(5): 33–40 Effective Treatments of Atrophic Acne Scars Maya Valeska Gozali, MD and Binrong Zhou, MD, PhD; DAN LUO, MD, PhD*)

2. materials and methods

In the following case study, we have treated a 32 years old male affected by severe atrophic acne scarring all over the face, especially within the zygomatic area. The scars were formed after acute episodes of acne vulgaris during adolescence and subsequent to pharmacologic treatment with isotretinoin. the patient has never treated previously these scars. The protocol that we have implemented provided a combined action:

1. Superficial Peeling - careful preparation of cleansing and exfoliation of the epidermis with the diamond peeling – PLG (Forma system) using the 355µ - 425µ tip, thereby reducing and leveling the stratum corneum (corneumlysis).
2. Deep Bulk Heating – using the ND 1064 nm applicator (Magma system) with the 8mm tip, operating in gliding mode (Rate 2 Hz) and delivering bilaterally approximately 1800 pulses of 22J/cm² over the entire affected area which corresponds to a total accumulative energy of about 23KJ.

3 treatments were performed in 4 weeks' interval between one to another. No numbing cream or additional cooling device were used. Pain level was assessed on a 1- 10 VAS and was evaluated with an average value of 6.3. Photographs were taken prior first treatment and 10 days after the 3rd treatment.

3. Results

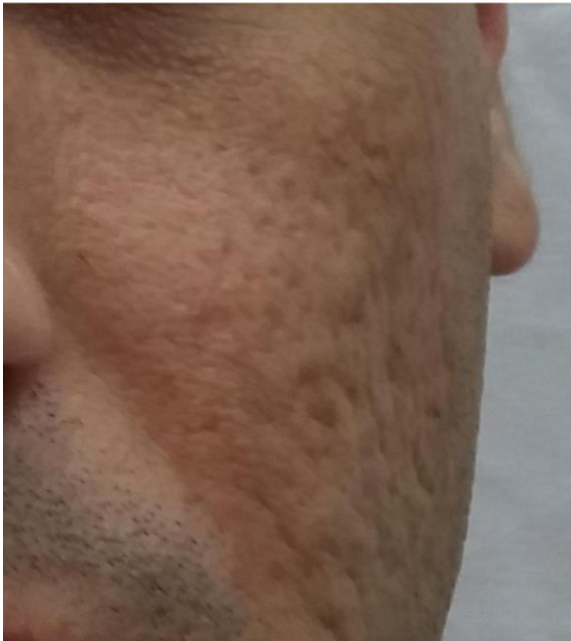
Significant changes were observed in the tissue texture after about 10 weeks from the initial treatment; it appears to be less rough and less fibrous. The skin appearance became vital and tonic compared to the pre-treatments conditions. The scars are much less noticeable thanks to a trophic effect promoted by the treatment and even the nasolabial fold is attenuated.

Before



After 3 Tx



Before**After**

4. Discussion

The long pulse (LP) ND 1064 nm is a non-ablative laser, able to deliver into the deep dermis (reticular dermis) energy, where heat induced damage results in synthesis of new collagen and elastin. The laser can be used on dark skin patients too since the 1064 nm wavelength is trifling absorbed by melanin. The ND applicator cools the surface of the epithelium while penetrating the deeper layers of the skin with its infrared wavelength. This wavelength penetrates the skin, exerting prevalently the phenomenon of diffusion (scatter) resulting in efficient heating of the deep dermis. Thermal damage serves as the stimulus for inflammatory mediator release, fibroblast activation, neocollagenesis, and dermal remodeling. The ND laser requires more sessions (3-10 treatments), but a patient can expect to see a 40- to 50% improvement in the quality of their scarring. The results are long lasting and continue well beyond the last treatment, indicating ongoing collagen remodeling after completion of the laser treatment sessions. This treatment offers significant advantages to patients in terms of its minimal recovery period and minimal risk of side effects such as pigmentary complications.

5. Conclusion

Although this is an interim result, we have seen a significant improvement in terms of visibility of scars and skin texture. considered the non-ablative method which the ND LP 1064 nm offers, we comply satisfactory results obtained after only three treatments. Naturally, we will continue to treat the patient with the same mode for another 3 treatments and will document the results in on one of our future clinical bulletin.