Dermatology Practical & Conceptual

Dermoscopic Evaluation of Combined Treatment with Fractional Co2 and Nanosecond Q-1064 nm Laser for Traumatic Facial Tattoo

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Introduction

Traumatic facial tattoos are a disabling sequel altering the person's appearance. They are caused by the depositing of exogenous pigmented particles during a traumatic event into the dermis. The effectiveness of nanosecond Q-1064 nm has been proven to be an effective procedure to treat this condition, and nowadays it is the first-line option [1], but recently, with the aim to improve the aesthetic outcome of the scars caused by the trauma as well, some authors have successfully combined the use of the CO_2 ablative fractional laser (AFL) with the nanosecond Q-1064 nm laser [2]. However, little is known about the dermatoscopic changes that combined laser treatment brings to tissue with traumatic tattoo. Herein, we report one case of upper labial traumatic tattoo (black-blue color) treated with combined use of nanosecond Q-1064 nm and AFL laser; after each laser session, we performed a dermatoscopic analysis on the tissue. Each dermatoscopic change has been accurately reported and described.

Case Presentation

An otherwise healthy 26-year-old female who, after a bicycle fall with impact of her face on the asphalt, sustained an injury to the left upper prolabium, resulting in a 12 x 4 mm black pigmented scar located in the upper left labial region (Figure 1a). First, a dermatoscopic evaluation was performed in order to choose the best laser treatment. Dermoscopically, a white structureless area surrounded by a bluish pigmentation

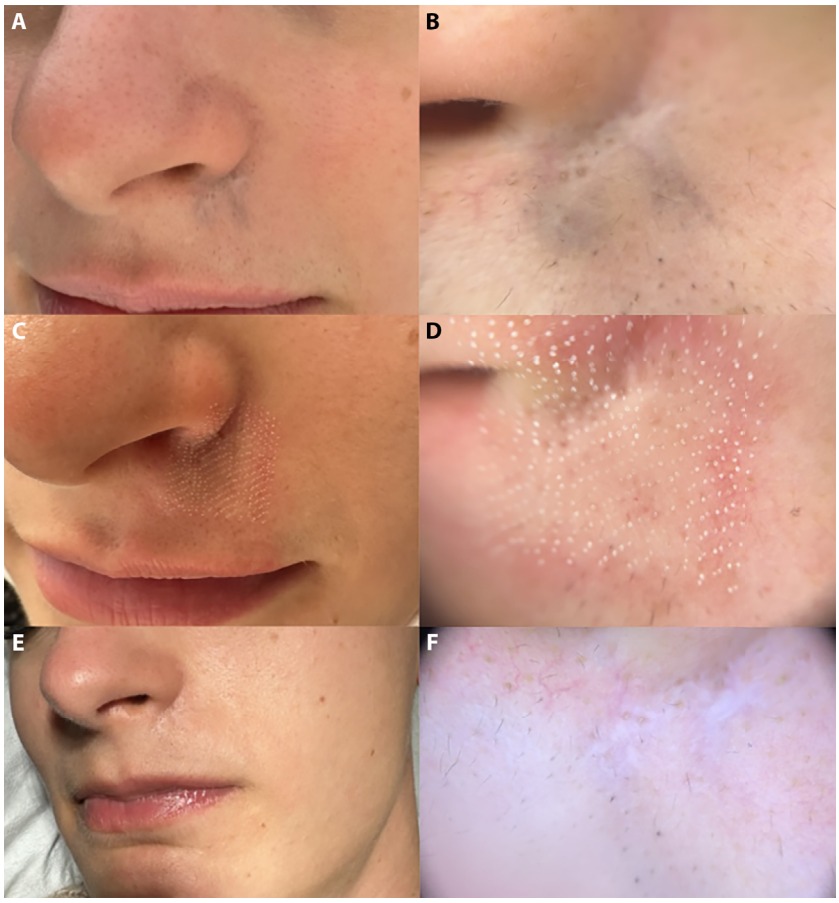

Figure 1. A), B) Clinical and dermoscopic features of traumatic facial tattoo at baseline, showing white structureless area and bluish pigmentation corresponding to the presence of asphalt particles in the dermis; C), D) Clinical and dermoscopic features immediately after combined CO2 fractional and Q-switched laser performed on the scar. Dermoscopy shows mild erythema surrounding laser-induced channels; E), F) 3-month follow-up demonstrating a complete fading of asphalt particles in the dermis.

was observed. The white area corresponded to the scar, while the bluish color corresponded to the presence of small particles of asphalt in the dermis. In order to treat the scar and to bring out the exogenous pigmented particles, a first session of nanosecond Q-1064 nm laser treatment was performed, followed by a fractional CO2 laser treatment. Immediately after the procedure, dermoscopic evaluation was performed, which observed the absence of asphalt particles, the presence of laser-induced channels through which the pigment was removed, and mild erythema around the treatment area as a consequence of the two lasers treatment performed.

After three months of follow-up, the clinical result was a eutrophic scar with good quality texture and without any pigment; the dermatoscopic exam confirmed the clinical result without presence of residual exogenous pigment.

Conclusion

Tattoo removal and scarring improvement are the two endpoints for traumatic scarring tattoo treatment [1]. Our experience shows that Q-1064 nm laser can penetrate in skin tissues and fragments the asphalt particles into smaller units. In this condition, fractional CO2 laser creates channels which allow the pigmented particles to escape. The combined protocol optimizes the effectiveness of the treatment. According to our experience, combined laser treatment with CO_2 AFL, and Q-1064 nm laser could facilitate the treatment of asphalt scars, allowing effective removal of the pigment particles and at the same time improving the texture of the scar, as demonstrated by dermatoscopic evaluation.

References

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