Treatment of Triamcinolone-Induced Skin Dyspigmentation with Nd:YAG Picosecond Laser with Combination of Polynucleotide

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Introduction:

This patient was a 38-year-old female who came to the clinic with concern of hypopigmentation at the nasion since 5 years prior to her visit. According to the patient, she had a silicone-based material injected to her nose a decade ago. Due to the nose being unnatural, she went to a doctor and did an intralesional triamcinolone injection as a method to deal with the silicone material after unsurprisingly failing with hyaluronidase injection. The steroid injection did help with reducing the silicone, however, hypopigmentation with a ring of hyperpigmentation was formed not long after. Since then, she tried multiple sessions of platelet rich plasma injection but to no avail. She came to me with expectation of lightening the ring of hyperpigmentation and possibly restoring some pigment to the hypopigmentation part.

Laser	StarWalker PQX	
	Step 1	**Step 2**
Laser wavelength	Nd:YAG (1064 nm)	Nd:YAG (1064 nm)
Handpiece	Black	Black F5
Mode	PICO	PICO
Spot size	4 mm	5x5
Fluence	3 J/cm^2	2 mJ/px
Frequency	4 Hz	5 Hz
Pass	Multiple passes	Multiple passes
Endpoint	Lightening of pigment	Mild erythematous
Anesthesia	Numbing cream	Numbing cream
Sessions	1 session	

Dr. Wong Yeut Sun completed his medical training at the National Defense Medical Center in Taipei, Taiwan in 2011. From 2011 to 2013 he performed internships in the Dermatology Department of Tainan ChiMei Hospital and the Plastic Surgery Dept. of Taipei Veteran General Hospital. After working as a Medical Officer at the Sungai Buloh and Tawau hospitals, he began his current position in 2017 as an aesthetic physician in the Davinci Clinic at the National Taiwan University Hospital in Taipei.

CLINICAL CASE:

My treatment plan was to lighten the hyperpigmentation area with Nd:YAG picosecond laser and attempt to restore pigment to the hypopigmented area with polynucleotide. Expectation was managed prior to the treatment.

EMLA cream was applied for 40 minutes on the area of interest prior to the treatment. The first step was to cover the hypopigmentation area with white-colored plaster. Then, we targeted the pigmented area with PQX, Black handpiece, 4 mm spot size, fluence 3 J/cm^2. Multiple passes were done and there was no pain reported. After that, we followed by using Black F5 handpiece, fluence 2 mJ/px , and an end point of mild erythematous was achieved on the same area. No pain was reported.

The final step was to inject intradermally with polynucleotide at the hypopigmented area using the nappage injection technique. There will be small bumps after injection, and it is expected to subside within 1-2 days. Moisturizer and sunscreen were applied to the patient after treatment. Advice for patient was to avoid long periods / extreme sun exposure.

The patient came back for follow-up after 1 month was satisfied with the result with only 1 session. No complication was observed. Restoration of pigment on the edge of the lesion inferiorly was evident as shown in the 1-month photos. With a subsequent follow-up at 6 months, the result further improved with homogeneity of the skin restored with no regression noted. This showed that the combination of Nd:YAG and polynucleotide is an efficient way to deal with iatrogenic dyspigmentation caused by intralesional steroid injection.

Subcutaneous fat atrophy, telangiectasia and hypopigmentation are well-known side effects of steroid injection. In this case, steroid injection did help with the reduction of silicone, however, the procedure left a rather unpleasant appearance for the patient, especially as it was at the middle of her face, which caused her to experience stress and lack of self-confidence.

The mechanism of the hypopigmentation is not yet known. However, there is a ring of hyperpigmentation around the depigmented area, this could be the result of inflammation post steroid injection.

Polynucleotide consists of DNA derived from the sperm cells of salmon and trout. In this case, polynucleotide with its healing properties restores the damaged micro-environment back to how it used to be, hence rebuilding the new melanocyte and melanin at the target area.1

In conclusion, the combination of laser and polynucleotide injection is an effective tool to treat iatrogenic dyspigmentation caused by steroid injection.