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Patient Background

A 38-year-old woman with Fitzpatrick Skin Type III presented with freckles on her face, which were evident since childhood, and lentigines that had developed over the years. She had not performed any treatment on her face previously and was interested in removing the pigmented lesions with laser treatment.

Methodology

The patient received 2 sessions of PicoWay picosecond laser treatment with a 1-month interval. Topical numbing cream was applied for 30 minutes before the laser treatments.

At both treatments, 3-4 passes with the Zoom 1064 nm laser were applied to the full face for toning. At the 1st session, the Zoom 532 nm handpiece was used for treatment of the pigmented lesions on the right face following full face Zoom 1064 nm toning, while the 730 nm handpiece was used on the left side of the face. Although both sides showed good clinical efficacy, the improvement was slightly better on the right side. Therefore, a single pass with the Zoom 532 nm picosecond laser was applied to freckles and lentigines on the bilateral sides of the face in the 2nd session. The clinical endpoint for both Zoom 532 nm and 730 nm picosecond treatment was a greyish whitening of the lesions. At the end of each treatment, PicoWay Resolve 1064 nm treatment was performed with a single pass to the full face.

No medicated cream or depigmentation cream was prescribed, and the patient diligently followed the physician's advice to use proper skin care including sunblock.

Detail treatment protocol:

	Wavelength/HP	Fluence (mJ or J/cm ²)	Repetition Rate (Hz)	Spot Size (mm)	Passes
1 st Session	Zoom 1064 nm	0.80 J/cm ²	8	6	3 - 4
	730 nm	1.40 J/cm ²	1	3	1
	Zoom 532 nm	0.40 - 0.50 J/cm ²	1	4	1
	Resolve 1064 nm	1.30 mJ	8	6 x 6	1
2 nd Session	Zoom 1064 nm	0.80 J/cm ²	8	6	3 - 4
	Zoom 532 nm	0.40 - 0.50 J/cm ²	1	4	1
	Resolve 1064 nm	1.10 mJ	8	6 x 6	1



Results

Following picosecond laser treatment, there was prominent lightening of pigmentation and improvement in her skin tone and texture, as shown in Fig. 1.

Fig. 1(a) Baseline



Fig. 1(b) After 1 session



Fig. 1(c) After 2 sessions



* Photos are unretouched. Individual results may vary.

Discussion

Freckles and lentigenes are epidermal pigmented lesions that respond very well to PicoWay 730 nm and Zoom 532 treatment. The 532 nm wavelength provides a better treatment outcome for these indications in fairer skin types due to melanin absorption with this wavelength. Precautions should be taken when treating darker skin types to avoid post-inflammatory hyperpigmentation (PIH). The PicoWay Zoom 1064 nm handpiece is used for skin toning before treating the pigmented lesions, while the Resolve 1064 nm laser can be utilized for full face rejuvenation following treatment to discrete lesions. The PicoWay picosecond laser system, with high pulse energy and extremely short pulse durations, confines the energy to the pigment particle, resulting in increased photoacoustic breakup of the target. This allows for effective treatment with lower fluences, thereby decreasing the thermal energy transfer to surrounding tissues and minimizing the risk of adverse effects. In this Case Spotlight, the treated patient did not experience any PIH or unwanted complications. She was highly satisfied with the results after the 2 sessions of PicoWay laser treatment.

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