

## CASE AND RESEARCH LETTER

### [Translated article] Satisfactory Response to Pulsed Dye Laser Treatment of Facial Erythema in a Patient with Amyopathic Dermatomyositis



#### Respuesta satisfactoria al tratamiento con láser de colorante pulsado del eritema facial en un paciente con dermatomiositis amiopática

To the Editor,

A 52-year-old woman, with a personal history of hypertension and hypothyroidism on levothyroxine and hydrochlorothiazide presented to the dermatologist's office back in December 2018 with a 4-month history of erythema on the eyelids, along with edema (Fig. 1), and erythema with itching on the scalp.

The additional tests performed revealed CRP levels of 30.9 (normal levels < 1 mg/dL) and CPK levels of 382 mg/dL (normal levels < 200 mg/dL), with no other changes to the rest of the study conducted (including immunoglobulins, complement, proteinogram, and a panel of autoantibodies designed to study inflammatory myopathies). Both the electromyography and the imaging modalities performed (thoracoabdominal and pelvic CT) yielded normal results. The histopathological examination performed revealed the presence of an epidermis with orthokeratotic hyperkeratosis, hydropic degeneration of the basal layer, collagen sclerosis on the superficial dermis, along with a perivascular lymphocytic infiltrate. The immunofluorescence test turned out negative.

After amyopathic dermatomyositis was diagnosed, treatment was initiated with prednisone 30 mg/day and azathioprine 150 mg/day, followed by down-titration of systemic corticosteroids and the addition of hydroxychloroquine 200 mg/day. The skin lesions improved slightly at the 1-year follow-up, and it was decided to treat the lesions with pulsed dye laser (PDL) therapy (Cynergy® PDL [585 nm],



**Figure 1** Facial and heliotrope rash before pulsed dye laser therapy.

Cynosure). Initially, sessions were administered every 2 months, using a 7 mm spot, a pulse duration of 0.5 ms, and energy levels of 8 J/cm<sup>2</sup>. The 7 mm spot was chosen because, in our own experience, although it takes longer with a 7 mm compared to a 10 mm spot, the former is more accurate and covers the perinasal and periorcular regions much better than the latter. Mild edema and serous crusts were among the adverse events reported in the target areas. The therapeutic response assessed through photographs was extremely satisfactory, with maximum scores in the 9-item Treatment Satisfaction Questionnaire for Medication (score of 100; validated Spanish version) (Fig. 2). Post-treatment purpura lasted for 7 days after the first session and 5 days in the remaining scheduled sessions.

Dermatomyositis is an idiopathic inflammatory myopathy that, from a cutaneous perspective, reveals clinical signs that are highly indicative, such as a heliotrope rash, Gottron's papules, periungual telangiectasias, and poikiloderma (V-neck or "shawl" sign). Advances and the latest iterations available of laser devices allow us to use them in various clinical signs of connective tissue diseases. Recent research on dermatomyositis has confirmed the therapeutic success of the management of cutaneous calcinosis with picosecond and carbon dioxide lasers,<sup>1</sup> which can complement medical treatment with diltiazem, bisphosphonates, or sodium thiosulfate.<sup>2</sup>

The medical literature currently available on laser therapy for other cutaneous signs of dermatomyositis is scarce. Zachariae et al.<sup>3</sup> used an argon laser (Lixel Aurora®, 1-

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**Figure 2** Therapeutic response after treatment.

1.7 W, 0.2 s of pulse therapy) in 2 teenage patients with 3- and 8-year histories of dermatomyositis who had only been treated with systemic steroid therapy with a good response to it.

Afterwards, Yanagi et al.,<sup>4</sup> and Calvo Pulido et al.<sup>5</sup> described a satisfactory therapeutic response in patients with dermatomyositis who presented with erythema and poikiloderma (n=2) and Gottron's papules (n=1), respectively. Both cases differed in the PDL wavelength (585 nm vs 595 nm), energy levels (6 J/cm<sup>2</sup> vs 14 J/cm<sup>2</sup>), spot size (5 mm vs 7 mm), and no. of sessions administered (4 vs 3). Improvement was assessed in both cases through pictures being taken, and none of the 3 cases showed recurrent lesions after nearly 3 years of follow-up. As described by Debeuf et al.,<sup>6</sup> a single session of PDL can provide significant improvements to both subjective and objective symptoms, not only improving erythematous skin lesions but also the associated pain and burning sensation. The reduced itching can be due to a reduction in transforming growth factor  $\beta$  and CD4+ T cells after the PDL.

PDL is indicated for the management of port wine stains (vascular malformation), superficial hemangiomas, and various acquired cutaneous vascular lesions, including telangiectasias, acquired angiomas ("cherry angioma"), and Civatte's poikiloderma. The light energy emitted by the PDL is primarily absorbed by the oxyhemoglobin of the blood

vessels, thus minimizing thermal damage to other structures and turning it into a treatment that often does not require anesthesia and provides excellent tolerance and satisfaction to patients with these types of connective tissue diseases. The adverse events reported include pain during treatment, hyper-, or hypopigmentation after treatment, and abnormal scarring. The use of cooling systems after treatment can minimize the risk of these adverse events.<sup>6</sup> In our patient, post-treatment purpura resolved without long-term depigmentation or scarring.

PDL seems to be a useful adjunctive therapy to treat various skin signs of systemic diseases refractory to conventional medical therapy.

## Conflicts of interest

None declared.

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