Efficacy of Narrowband UVB Phototherapy in Erythema Dyschromicum Perstans Treatment: Case Reports

Ashy dermatosis or erythema dyschromicum perstans (EDP) is a typically asymptomatic disease of unknown origin that causes symmetrical gray spots on the trunk and extremities (1). It was first described by Ramirez in 1957 (2). Patients show oval, irregular, or polycyclic gray macules with erythematous, inflammatory borders (3). There is no single established therapy for EDP.

The aim of our study was to evaluate the efficacy of narrowband UVB (nbUVB) phototherapy for the treatment of EDP.

We present two women, 53 and 59 years old, with a one-year history of progressive cutaneous pigmentary changes, were admitted to our Department. Initially, lesions presented as asymptomatic blue gray macules on the trunk, which slowly spread to her extremities.

Both patients had a history of thyroid disease: the first presented with multiple nodules in both thyroid lobes, compatible with a diagnosis of multinodular goitre; the second had autoimmune thyroiditis.

Physical examination revealed the presence of multiple bluish-gray macules with slight erythematous borders, non-pruriginous, on the trunk, abdomen, and extremities; the largest was 2 cm in diameter (Figure 1). Before coming to our Department, both patients had received topical corticosteroid therapy (dexossimetazone 0.25%, twice a day) for 2 months, without any improvement.

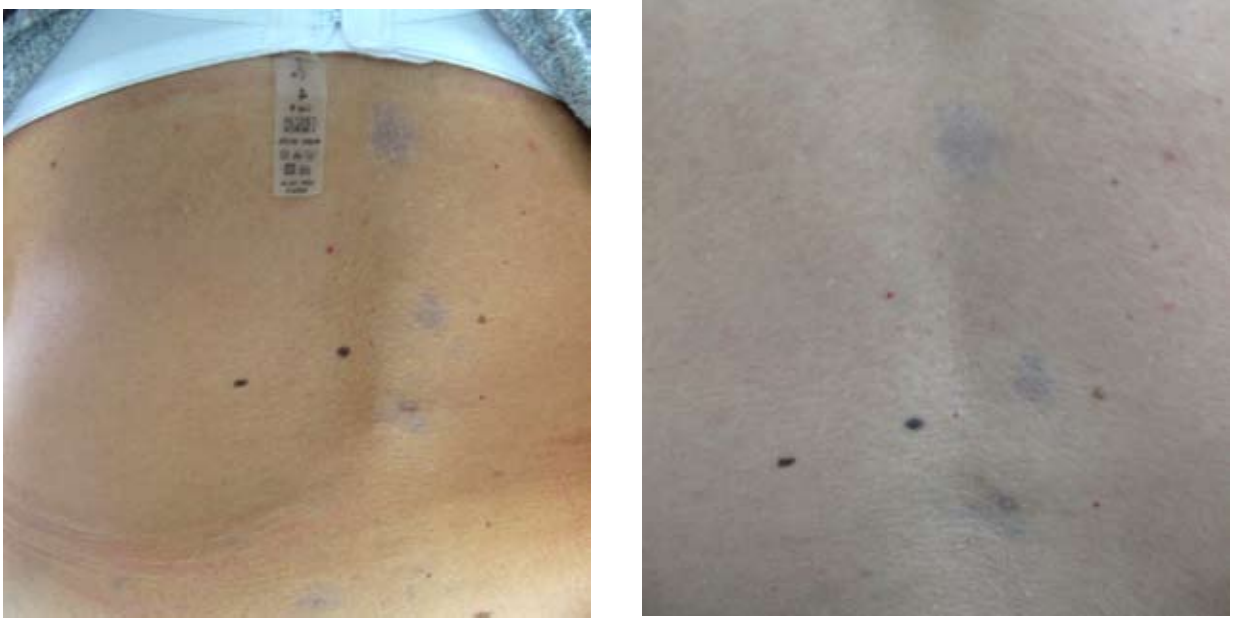

Figure 1. Multiple bluish-gray macules with slight erythematous borders

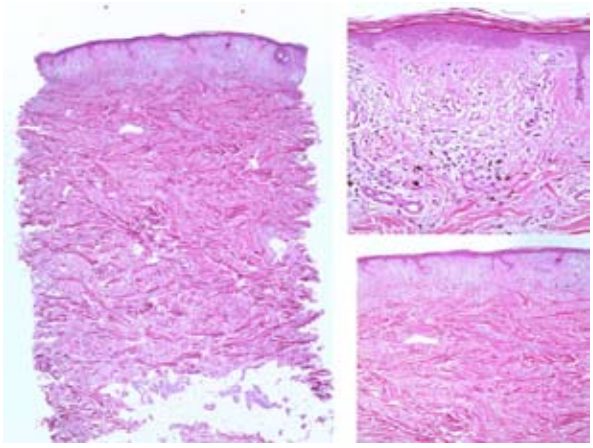

Figure 2. Thinned epidermis, edema of the superficial dermis, neovascularization, and pigmented incontinence (H&E x40)

In both cases the histological findings (biopsy from a lesion of the dorsum) showed a thinned epidermis, edema of the superficial dermis, neovascularization, and pigment incontinence; the histology was compatible with an acute inflammation (Figure 2). EDP was diagnosed in both patients and treated with nbUVB phototherapy for 12 sessions (three times a week for four weeks, total dose 4716 mJ/cm^2, Daavlin® 311 nm).

After 12 sessions of nbUVB phototherapy, an improvement of the erythematous violaceous component was achieved. However, there was persistence of a slight grayish halo, although a reduction of erythematous borders was achieved. The gray halo lasted for six months after the last nbUVB session (Figure 3).

The histology was repeated after 12 phototherapy sessions. In both cases the new biopsy showed different findings, with chronic inflammation areas characterized by a low vascular component and an increased cellularity, involving monocytes, macrophages, and plasma cells prevalent in the superficial dermis and the epidermis. There were no signs of acute inflammation and edema. Additionally, a reduction of melanin incontinence was found.

DISCUSSION

EDP is a rare disorder characterized by asymptomatic, slowly progressive, ash-gray macular pigmentation of the skin. Most cases have been reported in Latin American and Indian patients, with a greater prevalence in women. The etiology of EDP remains unknown. Occasionally, the condition is associated with infections, the ingestion of toxins, of medications, and endocrinopathies (thyroid disease). Treatment options include topical and systemic steroid, keratolytics, hydroquinone, dapsone, antibiotics, retinoids, griseofulvin, ascorbic acid, chloroquine, estrogens, chemical peels, laser therapy, and clofazimine, with partial success (4).

We report two cases of EDP successfully treated with nbUVB phototherapy. In the literature there is only one report of using nbUVB phototherapy for treatment of EDP (5). The reason for treating EDP with nbUVB phototherapy is the presence of an inflammatory infiltrate occurring in the disease. NB-UVB phototherapy, in fact, decreases peripheral natural killer cell activity, lymphocyte proliferation, and immune regulatory cytokine production by both Th1 (IL-2, IFN-g) and Th2 (IL-10) T-cell populations (6,7). nbUVB phototherapy provides clinical camouflage, which hides the dermal pigmentation by stimulating pigment production. In addition to hyperpigmentation, nbUVB phototherapy also induces thickening of the stratum corneum and apoptosis of T lymphocytes (5).

NbUVB phototherapy, in our case, led to a partial fading of blue-gray pigmentation and a good response of inflammatory lesions. In conclusion, our cases provide support for the use of nbUVB in the treatment of EDP in relation to the inflammatory pathogenesis of the disease. Further studies are needed to better characterize the pathogenesis of the disease and confirm the effectiveness of phototherapy.

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