



POSTERS

SOLAR LENTIGO TREATED WITH A 2940 NM ERBIUM LASER: ABLATION AND INSTRUMENTAL ASSESSMENT**G.I. Luppino***Dermatological Clinic, University of Catania, Italy***Keywords:** *Erbium-Lentigo, Lc-Oct.*

Solar lentigo (SL) are one of the most common manifestations of cutaneous photoaging, with significant aesthetic, psychological, and social implications. The etiopathogenesis involves complex cellular and molecular mechanisms involving interactions between keratinocytes, melanocytes, dermal fibroblasts, and the vascular component. The diagnosis of SL is based primarily on clinical examination, supplemented by non-invasive techniques such as dermatoscopy and, in selected cases, by the use of advanced technologies such as reflectance confocal microscopy (RCM). A skin biopsy for histological examination is rarely necessary. This invasive procedure is performed in selected cases to rule out pigmented actinic keratoses or, primarily, malignant lentigo. Although numerous techniques have been developed to treat these pigmented lesions, the choice of the ideal protocol depends on multiple factors, including the characteristics of the lesion, the patient's skin type, and individual tolerance to treatments. Among emerging methods, the 2940 nm Er:YAG laser has garnered attention for its ability to combine precise ablation with thermal control, reducing the risk of side effects compared to other laser technologies. At the same time, the development of non-invasive imaging techniques such as linear-field confocal optical coherence tomography (LC-OCT) has opened new avenues in the diagnosis and monitoring of dermatological conditions. This method provides a

detailed assessment of epidermal and dermal structures, allowing for real-time monitoring of treatment-induced morphological changes without the need for invasive biopsies. LC-OCT acquires optical sections in two main modes: vertical scanning (B-scan or en-coupe), which represents a cross-section and shows the stratification of the skin, from the epidermal to the dermal surface. The other mode is horizontal (en-face), which provides a view parallel to the skin surface, highlighting cellular and architectural details at different depths. In the vertical LC-OCT view, the main feature of SL is a continuous, wavy, and bright DEJ. Horizontal features include polycyclic papillary contours, elongated cords, and bulbous projections at the junction, as well as bright spots in the superficial dermis. The integrated use of LC-OCT therefore represents a valuable resource for correlating clinical observations with objective data, improving understanding of therapeutic efficacy, and providing scientific evidence to support clinical decisions. In this context, we sought to study the efficacy of the Er:YAG laser in the treatment of solar lentigo, evaluating both the clinical improvement of the lesions and the morphological changes observed via LC-OCT, investigating the utility of LC-OCT in highlighting pre- and post-treatment skin changes, and correlating clinical data with microscopic changes to obtain a holistic view of the treatment's benefits.