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Effectiveness of 904 nm Gallium-Arsenide Diode Laser in Treatment of Oral Lichen Planus: Report of 2 Cases[☆]



Eficacia del láser de diodo de arseniuro de galio en el tratamiento de 2 casos de liquen plano oral

To the editor:

Two symptomatic non-pregnant female patients with clinically and histopathologically diagnosed oral lichen planus were selected for the treatment with Low Level Laser Therapy (LLLT). Both the patients were neither suffering from any systemic illness nor were on any systemic drugs. Both the patients had histories of recurrent lesions which were treated before with topical corticosteroids. Ethical clearance was obtained from the Ethical Clearance Committee of the college and written informed consent form was obtained from the patients.

The subjective assessment of pain and burning sensation was done on Visual Analogue Scale (VAS) before start of treatment, after 5 and 10 sessions, and after one month post treatment. VAS is a 10 cm long horizontal line where 0 represent “no pain” and 10 represent “worst possible pain”.¹ The objective assessment of the lesions was done based on Clinical Scoring Scale of Thongprasom et al.² The lesions were measured with the help of marked tongue blade. The clinical scoring criteria used were as follows:

- Score 5 = white striae with erosive area > 1 cm²
- Score 4 = white striae with erosive area < 1 cm²
- Score 3 = white striae with atrophic area > 1 cm²

- Score 2 = white striae with atrophic area < 1 cm²
- Score 1 = mild white striae, no erythematous area
- Score 0 = no lesion, normal mucosa

The score of 0 or 1 after 10 sessions of LLLT or before was considered complete resolution.

The gallium arsenide diode laser (low-intensity LASER, Prometheus-M, New Delhi, 2001, LASER class: III B, Wavelength: 904 nm, Power supply & consumption: 220V & 10W was directed towards the lesions through fiber-optic nozzles at a 5 mm distance from the lesions at 4 – 6 points for 5 minutes at each point with a frequency of 1500 HZ thrice weekly on alternate days for 10 sessions or till the lesions heal. The international safety procedures for LASER application were respected. The first patient had erosive lichen planus on lower lip since 15 days and had clinical score of 5 and VAS of 6 before treatment. The patient showed complete resolution of the lesion after 5 sessions of LLLT. There was no recurrence in the one year follow up period. The second patient had erosive-reticular lesion on right buccal mucosa (Fig. 1) for one month and clinical score of 5 and VAS of 7 before treatment. The patient showed almost com-

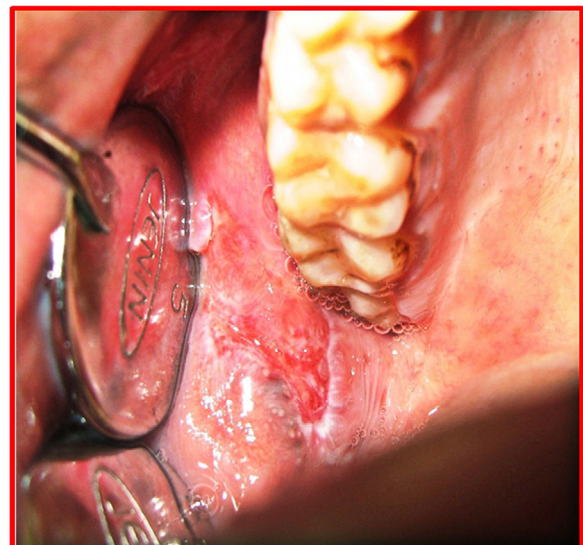


Figure 1 Second patient's pre-treatment photograph showing erythematous reticular lesion on buccal mucosa.

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Figure 2 Second patient's post-treatment photograph.

plete resolution of the lesion post 9 sessions of LLLT therapy with clinical score and VAS score of 1 (Fig. 2). The patient was asymptomatic and there had been no recurrence of the lesion one year post treatment.

Discussion

Lichen planus is a T cell mediated potentially premalignant condition that affects mucosal and cutaneous tissues. It was first described by Erasmus Wilson in 1869 as "leichen planus". The overall prevalence of lichen planus is reportedly 0.22% to 5% worldwide.³

The word LASER is an ellipsis for "Light Amplification by Stimulated Emission of Radiation". Therapeutic lasers are within red to near visible red electromagnetic spectrum ranging from 630 to 980 nm. LLLT is based on Arndt-Schulz principle which states that if the stimulus is too weak, no effect is seen. Increased stimulation and optimal dose leads to the optimal effect; while further dose increase leads to a decreased effect.⁴

The various effects of LLLT on tissues are as follows⁵

They act analgesically by enhancing release of endorphin and thus inhibit nociceptive signals and control pain mediators.

The inflamed /pathologic tissues are acidic in nature. LLLT act on cellular reduction-oxidative potential so that the pH becomes optimally alkaline.

LLLT has anti-inflammatory effect as it stimulates lymphocytes, activate mast cells and increase production of adenosine -triphosphate in the mitochondria.

These lasers stimulate microcirculation which results in the change of capillary hydrostatic pressure which in turn helps in edema reduction.

LLLT increase ascorbic acid in fibroblast thus increasing hydroxyproline production and consequently collagen production. Thus, helping in tissue healing and repair.

LLLT improve proliferation of the epithelial cells which leads to increased number of blood vessels as well as enhanced production of granulation tissue.

Various studies and case reports have reported the efficacy of LLLT in treatment of myriad of mucosal lesions and disorders such as oral mucositis, pemphigus vulgaris, recurrent aphthous stomatitis, herpes simplex and oral lichen planus.⁶⁻¹⁰ We also successfully treated two cases of OLP with 904 nm GaAr Laser.

As of now, it can be concluded that LLLT may be an alternative booming mode of treatment for OLP. The substantial deductions on efficacy of LLLT in treatment of OLP can be arrived only after conducting more studies on larger sample sizes and among different ethnic groups.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Blepharochalasis: A Rare Presentation of Cutis Laxa[☆]



Blefarocalasia: una presentación rara de cutis laxo

To the Editor:

Cutis laxa is a congenital or acquired connective tissue disorder characterized by extracellular matrix and elastic fiber defects. It manifests clinically as sagging skin, giving an appearance of premature aging. Blepharochalasis is an acquired form of cutis laxa that affects the periorbital region. It normally starts in childhood or adolescence and is characterized by recurrent episodes of painless eyelid swelling. Repeated acute attacks lead to elastin fiber degradation and sagging skin in the periorbital region that can interfere with vision. The pathogenesis of blepharochalasis or blepharoptosis is still unclear, although a role has been proposed for immunopathogenic mechanisms that result in elastin fiber degradation.^{1,2} Grassegger et al.¹ and Schaeppi et al.² reported immunoglobulin A (IgA) deposits around blood vessels and sweat glands and in the papillary dermis. The second group of authors also found IgA deposits in elastic fibers around hair follicles. Histopathology shows disperse fragmented, granular elastic fibres in the reticular dermis.

The differential diagnosis in blepharochalasis should include inflammatory diseases (contact dermatitis, angioedema, blepharitis, and hereditary angioedema), tumors (retrobulbar tumor or lacrimal gland tumor/cyst), systemic diseases (thyroid and kidney disease), other extracellular matrix diseases (Ehlers-Danlos syndrome, elastic pseudoxanthoma, mid-dermal elastolysis, anetoderma, and postinflammatory elastolysis), and even physiologic aging. The condition can also form part of syndromes, such as Ascher syndrome, which is characterized by blepharochalasis, double lip, and nontoxic goiter.

The treatment for blepharochalasis is reconstructive surgery with cosmetic and therapeutic intent, but recurrence is common.³

In this article, we describe the case of a young man with blepharochalasis as a clinical presentation of acquired cutis laxa.

A 24-year-old man presented with looseness of the upper eyelids that had become progressively worse over 8 years. The sagging was such that it had caused considerable cosmetic damage. The patient reported that he had experienced several episodes of eyelid swelling over a period of more than 2 years before his eyelids began to sag. He had not received any treatment and reported no other problems. Skin examination showed loose skin on both upper eyelids (more pronounced on the right) and partial occlusion of the eyelashes. The skin in the upper eyelid region was atrophic and had a violaceous color (Fig. 1). Vision was not affected by the blepharoptosis. The patient confirmed that the condition had not been treated medically. Biopsy of the eyelids (with hematoxylin-eosin staining) showed just slight swelling of the upper dermis. Orcein staining showed absence of elastic fibers (Fig. 2). IgA was positive in the dermal vessel walls. Computed tomography of the orbits, a chest X-ray, and laboratory tests were all normal. The patient underwent upper blepharoplasty (Fig. 3) and the cosmetic and func-



Figure 1 Eyelid redundancy.

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