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Treatment of Vulvar Lichen Sclerosus et Atrophicus With Fractional Carbon Dioxide Laser Therapy: A Report of 4 Cases[☆]



Tratamiento de liquen escleroso y atrófico vulvar con láser de dióxido de carbono fraccionado. Presentación de cuatro casos

To the Editor:

Vulvar lichen sclerosus et atrophicus (LEA) has a major impact on quality of life. Furthermore, it can degenerate into squamous cell carcinoma.^{1–3}

Most patients can be managed with topical first- and second-line treatments. However, recalcitrant cases may require other forms of treatment, including retinoids, cyclosporine, or photodynamic therapy (PDT).^{3–5} These treatments are chronic and have limited efficacy; recurrence is frequent and adherence poor.^{2,4}

Surgery is considered when structural alterations occur.^{6,7} CO₂ laser has predominantly been used in cases of LEA of the penis. There are fewer reports of CO₂ laser surgery in patients with vulvar LEA,^{4,7,8} and even fewer describing the use of fractional CO₂ laser surgery.⁹ We have previously described treatment of extragenital LEA using fractionated erbium-yttrium-aluminum-garnet (Er:YAG) laser.¹⁰

We present 4 cases of biopsy-confirmed, long-standing vulvar LEA. The main clinical signs were itching, dyspareunia, and general discomfort with frequent appearance of wounds and erosions. All patients had received prior treat-

ments that failed to provide effective control. One patient had undergone treatment with neodymium-doped:YAG (Nd:YAG) laser and another with cyclosporine and PDT (Table 1).

The patients were treated with a CO₂ laser (Lumenis® AcuPulse) in deep fractional mode (15–17.5 mJ; density, 10–20%). Sessions were held at monthly intervals until achieving remission, which required a total 5 to 7 sessions per patient. Initially, CO₂ laser treatment was performed under intralesional anesthesia. This was later replaced with topical anesthesia, which provided good pain control. Treatment was well tolerated and recovery time was fast. During this period, the use of topical antibiotics was advised. Antiviral prophylaxis was not administered as none of the patients had a history of genital herpes. Such prophylaxis would have been necessary in patients with a positive history. Patients did not undergo any concomitant treatment.

Treatment resulted in improvements in erythema, leukoderma, and skin elasticity, a reduction in erosions and fissures, and restoration of normal skin color and texture (Figs. 1 and 2). Histology revealed improvements in Patient 1 (Fig. 3). None of the other patients underwent post-treatment biopsy.

All patients were very satisfied with treatment and rated their improvement as >75%. An improvement in clinical signs was evident after 1 to 3 sessions. Itching was the first sign to improve. Patient 1 experienced an increase in skin elasticity and an improvement in dyspareunia. This patient required more sessions, possibly due to the lower intensity of CO₂ laser treatment in this particular case. Patient 2 reported a marked improvement in the burning sensation that previously limited her choice of clothing. This patient's gynecologist also noted evident improvements. Moreover, the patient was able to resume sexual intercourse, which had previously been impossible. Patient 3 also attempted to resume sexual intercourse, which she had previously avoided due to fear of the resulting pain. That patient, who reported no improvements with any previous treatments, experienced evident improvements after the first session of CO₂ laser therapy. Interestingly, a symptom diary maintained by this patient was left blank after the first few sessions.

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Table 1 Presentation of the 4 Clinical Cases

Case	Age, y	Diagnosis	Date of Onset (Clinical Signs)	Prior Treatments	No. of CO ₂ Laser Sessions	Response	Adverse Effects	Follow-up Duration, mo	Maintenance Regimen
1	60	2014	Several years prior to diagnosis	Topical corticosteroid, lubricant	7	>75%	None	16	2 sessions at 6 mo
2	62	2015	1997	Nd:YAG (2 sessions), oral ibuprofen, topical corticosteroid	5	>75%	Superficial ulcer	5	None
3	53	2009	2006 (Effacement of the labia minora and narrowing of the introitus)	Topical corticosteroids and calcineurin inhibitors, EDF (antifungals + corticosteroids + Atb), topical anesthetic, oral metamizole, topical estrogens, oral cyclosporine, PDT, lubricants	5	>75%	None	4	None
4	56	2017	2011 (Effacement of the labia minora and narrowing of the introitus)	Lubricants, topical corticosteroids	5	>75%	ACD (treated with EDF, anesthetic)	10	1 session at 6 mo

Abbreviations: Atb, antibiotic; ACD, allergic contact dermatitis; EDF, extemporaneous drug formulation; PDT, photodynamic therapy.



Figure 1 A, Whitish lichenified skin and hypertrophic plaques on the labia minora before treatment. B, Improvement in color and texture of the skin of the labia minora after 4 sessions of CO₂ laser therapy.

We consider these outcomes to be particularly significant, given that the patients had rated the impact of the disease on their quality of life at 8 or 9 on a 10-point scale. During follow-up, all patients remained free of clinical signs and required no further treatments. Three of the patients underwent subsequent intravaginal fractionated CO₂ laser treatment to improve vaginal atrophy typical of menopause.

Patients 1 and 4 underwent a single session of maintenance treatment after 6 months, in the former case due to persistent discomfort in the episiotomy area and in the latter due to the appearance of synechiae in a previously untreated area of the clitoris.

The effects of CO₂ laser therapy are achieved by ablation of the epidermis by vaporization and by collagen



Figure 2 A, Before treatment. B, Improved skin elasticity and reduction in erosions after 5 sessions of CO₂ laser therapy.

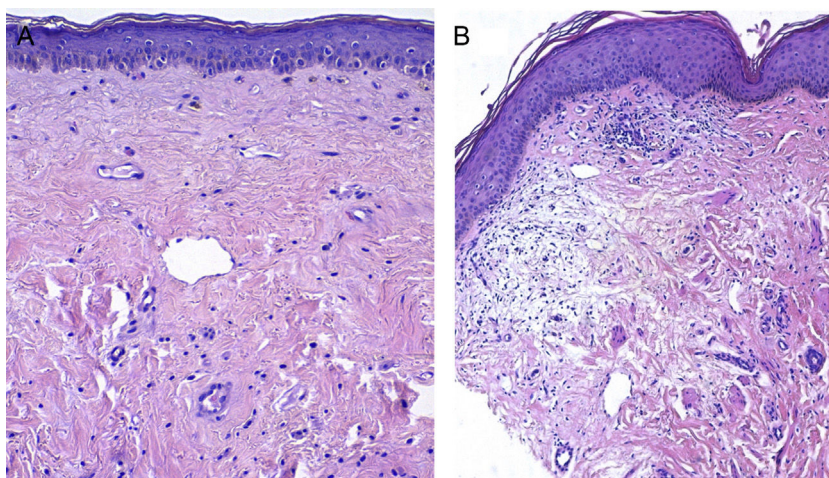


Figure 3 A, Pretreatment image showing epidermal atrophy, sclerotic collagen, and homogeneous hyalinization of the dermis (519.7 μm). B, Post-treatment image showing a more irregular, thicker epidermis, a thinner subepidermal hyaline band, and a loose dermis with greater cellularity and decreased hyalinization (376.5 μm).

remodeling caused by the residual thermal effect on the underlying dermis. This treatment modality offers some advantages over topical corticosteroids, including good adherence, and the absence of any local immunosuppression or atrophy. It provides effective, rapid results. It can induce collagen remodeling, reversing some of the damage caused. Furthermore, it could theoretically reduce the risk of malignant transformation as it is an effective ablative treatment for other premalignant lesions. Fractional CO₂ laser allows rapid recovery, improves tolerance, reduces the risk of side effects, and can be performed in outpatient settings. We believe that it is a valid alternative for the treatment of uncomplicated, recalcitrant LEA and/or for maintenance therapy. Moreover, it could

potentially be used for drug delivery, offering increased efficacy over conventional treatments. Disadvantages include the need for supporting infrastructure and the requirement of multiple treatment sessions when using fractional mode.

In conclusion, fractionated CO₂ laser can be an effective and safe therapeutic alternative with a short recovery time for the treatment of vulvar LEA in certain patients.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Are Patch Test Results Usually Relevant in Patients With Burning Mouth Syndrome?☆



¿Suelen ser relevantes las pruebas epicutáneas en el paciente con síndrome de boca urente?

To the Editor:

Most publications on the results of patch testing in patients with burning mouth syndrome (BMS) report high percentages of positive “clinically relevant” findings (between 13% and 74%), thus leading this approach to be considered a useful tool in the assessment of affected patients.^{1–3} Some authors point out that patients with intermittent symptoms (type 3 BMS) could be ideal candidates for patch testing.³ Various allergens are involved, and these are not always consistent from study to study, although most positive results are for metals, especially nickel.

Taking the above into account, we performed a retrospective observational study in order to determine the clinical relevance of positive patch test results in patients with BMS. We analyzed the results of patch tests performed in patients diagnosed with BMS referred to our skin allergy unit over a period of 15 years (January 2001 to December 2015). We also followed patients via their electronic health records (Osabide Global) in order to determine the relevance of the positive results. During the period analyzed, a total of 2789 patients underwent testing. Of these, 67 had consulted for BMS (Fig. 1). The characteristics of the cohort were reported using the MOAHLFA index (Table 1). All patients with BMS underwent testing with the standard series of the Spanish Contact Dermatitis and Skin Allergy Research Group (Grupo Español de Investigación en Dermatitis de Contacto y Alergia Cutánea [GEIDAC]). Supplementary series were applied in 65 cases, depending on the clinical history. The most common were a dental series (Chemotechnique) (52.23%) and a metal series (Chemotechnique) (44.7%) (Table 2). Readings were made at 48 and at 96 hours following the recommendations of the European Society of Contact Dermatitis (ESCD). An allergic reaction was observed in 23 of the 67 patients (34.3%), with a total of 32 positive results recorded. Nickel was the main allergen (n = 11), followed by methylisothiazolinone/methylchloroisothiazolinone (n = 3) and beryllium (n = 3). We were able to establish present relevance in

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