

Treatment of xanthelasma palpebrarum by ablative lasers, series of 14 cases

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ABSTRACT

Background: Xanthelasma palpebrarum is the most common type of xanthoma. The objective of our study was to evaluate the efficacy and side effects of ablative lasers in the treatment of xanthelasma. **Material and methods:** We collected patients presenting xanthelasma of the eyelids treated by ablative laser, over 3 years. **Results:** 14 patients, with a total of 38 lesions, the average age was 52.9. We observed bilateral lesions in 9 of our patients. Upper eyelid involvement was the most frequent with a percentage of 85.7%. Concerning the types of laser used, 3 patients were treated with a CO₂ laser, the other patients were treated with an erbium Yag laser. Concerning the side effects, we noted a rapidly resolving edema in 3 patients, slight hypo-pigmented atrophic scars in 3 patients. **Conclusion:** Laser therapies are an excellent cosmetic treatment option for xanthelasma palpebrarum with good efficacy and minimal side effects.

Key words: Xanthelasma Palpebrarum; Lasers; Treatment.

INTRODUCTION

Xanthelasma is the most common type of xanthoma, seen in middle-aged patients, presents as asymptomatic, symmetrical, bilateral, soft, yellow, polygonal papules around the eyelids. Although it is a benign lesion with no functional impairment, it is aesthetically disturbing [1]. Xanthelasma presents a therapeutic and aesthetic challenge because of its high visibility and frequent recurrence rate with a wide variety of treatments [2]. The objective of our study was to evaluate the efficacy and side effects of ablative lasers in the treatment of xanthelasma.

MATERIAL AND METHODS

A prospective retrospective study conducted over a period of 3 years, from January 2019 to February 2022 at the dermatology department of Hassan II University Hospital. This study collected patients presenting xanthelasma of the eyelids treated by ablative laser. During the session an ocular protection with intraocular shells was placed with local anesthesia. The ablation was

performed in depth until the orbicular muscle of the eye was visible or the wound was bleeding. In patients with multiple lesions, we treated all lesions in the same session. A dermoscopic control was performed during the procedure to ensure total destruction of the lesion. After treatment, an antibiotic ointment was applied to the lesions twice a day for 2 weeks. Patients were warned against sun exposure and the use of broad-spectrum sunscreens. A follow-up consultation was held one month after treatment. The results, tolerance, duration of treatment and various side effects were noted. The improvement was classified as follows: 1 (minimal improvement), 2 (moderate improvement), 3 (marked improvement) and 4 (almost total improvement).

RESULTS

Over this period we collected 14 patients with xanthelasma, with a total of 38 lesions, the average age was 52.9 years +/- 14. Concerning the sex we noted 2 men against 12 women. 4 women and one man had a disorder of the lipid balance. We observed unilateral

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involvement in 5 patients and bilateral lesions in 9 of our patients. Upper eyelid involvement was the most frequent with a percentage of 85.7% (n=12). Only one patient had already undergone surgical treatment with recurrence. Concerning the types of laser we used, 3 patients were treated with a CO₂ laser with energies varying between 6 and 11 J, a spot size of 2 and 3 mm. The other patients were treated with an erbium Yag laser, an R11 arm with energies ranging from 6 to 10 J, a spot size always varying between 2 and 3 mm depending on the size of the lesions. Generally, one session was sufficient, only 3 of our patients required a second session. The bleeding during the sessions was minimal and was managed by a hemostatic compression. Concerning the side effects, we noted a rapidly resolving edema in 3 patients, slight hypo-pigmented atrophic scars in 3 patients, one of our patients had presented an eczema of the eyelids with edema, with a good improvement after treatment with topical steroids. Improvement was almost complete in all our patients, with a recurrence in one patient (Figs. 1a, 2a, 3a, 1b, 2d).

DISCUSSION

Xanthelasma palpebrarum (XP) is a condition that presents as yellowish, noninflammatory papules of the eyelids and surrounding tissue. Although considered benign, xanthelasma lesions are cosmetically disfiguring and can cause psychological distress to patients [1]. Approximately half of patients with xanthelasma will have hyperlipidemia and thus its presence may be a cutaneous manifestation of underlying dyslipidemia which was found in 35.7% of the cases in our study. The exact mechanism of development of xanthelasma lesions is not entirely known, they correspond to an intracellular and cutaneous lipid deposit [3]. The traditional treatment of xanthelasma was based on surgical excision with a more or less important scarring risk with a possible ectropion especially in case of large lesions.



Figure 1: (a) Clinical picture of a patient with xanthelasma of the eyelids. (b) Post-treatment control.

For a more aesthetic result and with less functional complication several treatments have been proposed to treat xanthelasma, including topical trichloroacetic acid (TCA), laser ablation, liquid nitrogen cryotherapy, and systemic treatments [3]. Regarding laser therapy, the superficial dermal location of xanthelasma makes mostly ablative lasers an ideal treatment [1], especially CO₂ and Erbium YAG lasers, which will allow vaporization of water into the cells resulting in ablation of the skin layer by layer, they generally allow the clinician to perform a more controlled and calibrated ablation compared to other treatments such as TCA peels [4]. These lasers are currently recognized for their effectiveness in the treatment of xanthelasma with minimal side effects such as atrophic scarring, post inflammatory hyper or hypo pigmentation, this was also identified during our study on our 14 patients we have seen a near total disappearance of lesions after one to two sessions, and as side effects we reported slightly atrophic hypo-pigmented scars in 3 patients treated with the erbium Yag laser with an energy of 8 to 10 J. Studies comparing the CO₂ laser and the erbium Yag laser in the treatment of xanthelasma have concluded that both are effective, with slower healing and a greater risk of scarring with the CO₂ laser due to its greater thermal necrosis zone [5]; on the other hand, the disadvantage of the erbium Yag laser is the bleeding that can sometimes hinder the operator during the procedure [5-7].

The Q-switched NdYAG laser has also been proposed as a therapeutic alternative, the efficacy of which seems to be quite variable, requiring at least 4 sessions, depending on the series published. It has a photomechanical effect with limited thermal diffusion, which explains the minimal risk of scarring [8]. A recent study compared this type of laser to the erbium Yag ablative laser, showing a superior efficacy of the latter, with similar side effects and recurrence rates in both groups [6]. Ablative lasers have also been compared to chemical treatments, in particular TCA peels, and we have observed in the literature that the two methods have similar results regarding efficacy and side effects. The main disadvantages of TCA are the lack of control of the ablation during the procedure, the need for a greater number of sessions, and the risk of a skin reaction in the palpebral area following the application of acid [9-11].

In our study we proceeded to an immediate control by the dermoscope of the lesions during the procedure in search of residues of lipidic deposit which are presented in the form of a yellowish coloration at the dermoscopy, thus allowing a good control of the ablation of the



Figure 2 : (a) Xanthelasma of the eyelids before treatment. (b) Dermoscopic image showing yellow staining. (c) Dermoscopic control during the procedure. (d) Clinical control after treatment.



Figure 3: (a) Clinical picture of a patient with bilateral xanthelasma. (b) Dermoscopic control during the procedure.

whole lesion (Figs. 2b, 2c, 3b). To our knowledge, no study has reported the use of the dermoscope during the laser session as a non-invasive means to allow an immediate optimal control of the xanthelasma lesion ablation; thus minimizing the need for further sessions.

Recurrence of xanthelasma is a frequent problem regardless of the modality of treatment, No relationship has been identified between recurrence and hyperlipidemic terrain. In contrast, patients with hyperlipidemia receiving statins had better results in terms of response to treatment than those on diet alone. In our study, the only patient who presented a recurrence did not have dyslipidemia [5].

CONCLUSION

XP treatment is considered to be a cosmetic procedure. To date, there is no consensus for the optimal choice of treatment for xanthelasma, however, sufficient evidence is available to suggest that laser therapies are an excellent cosmetic treatment option for xanthelasma palpebrarum with good efficacy and minimal side effects. We have also revealed through this study the interest of dermoscopy for an immediate control of xanthelasma lesion removal allowing a decrease in the number of sessions.

Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

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