

Pearls in Dermatology

How I treat xanthelasma palpebrarum

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Xanthelasma palpebrarum occurring around the eyes may signify the presence of hyperlipidaemia and its removal is mainly for cosmetic reasons. Treatment options include control of hyperlipidaemia if present, topical trichloroacetic acid (TCAA), cryotherapy, cauterization, surgical excision, laser ablation, and combination method using laser plus topical acid. A combination of carbon dioxide laser ablation with topical trichloroacetic acid application can achieve complete removal of the lesion with good cosmetic result and low recurrence rate.

Keywords: Laser ablation, trichloroacetic acid, xanthelasma palpebrarum

Introduction

Xanthelasma palpebrarum is one type of plane xanthoma that occurs around the eyes. It may signify the presence of systemic hyperlipidaemia. Patients usually request removal of these patches for cosmetic reasons.

Treatment options include: 1) diet control with or without drug therapy for those with hyperlipidaemia; 2) topical application of acids, for example trichloroacetic acid (TCAA); 3) cryotherapy; 4) cauterization; 5) surgical

excision; 6) laser ablation, for example carbon dioxide laser vaporization; and 7) combined method using laser plus acid treatment.

Diet control with or without oral hypolipaeamic drug treatment is recommended for those patients with elevated blood lipids. This treatment not only reduces organ damage from hyperlipidaemia, but also lowers the recurrence rate of xanthelasma after its removal. Topical application of 30% TCAA is one of the traditional non-surgical therapeutic method for xanthelasma. It is based on the principle of denaturation of the lipoprotein in the lesion by TCAA. The lesion is carefully painted with 30% TCAA soaked in the tip of a cotton bud once every two weeks. The eyes must be well covered with wet gauze to prevent accidental eyeball damage by the acid. Crusting of the lesion with gradual thinning of the lesion is noted with repeated treatment sessions, but complete

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removal of xanthelasma can seldom be achieved by employing this time consuming method alone.

Cryosurgery with liquid nitrogen cryoprobe or dipstick method is also an effective way of treatment, depending very much on the skill of application and experience in judging the end point. Postoperative oedema, pain and/or blistering of the eyelid can be very uncomfortable and disturbing to the patient. Aggressive treatment may cause permanent scarring or cold injury to the eyeball. Cryojet should never be used on the periorbital areas because the cryogen spray may result in irreversible damage of the eyeball.

Cauterization of the lesion is not recommended for several reasons. Flat or plaque-like lesions are difficult to cauterize evenly. Burning of lipid substance may result in very high temperature in the dermis, and together with the strong electric current, may cause thermal damage and/or electric burn of the eyeball.

Surgical excision of xanthelasma may give excellent cosmetic results for small lesions. Multiple sessions will be required, or even be impossible, for extensive lesions involving large areas.

Burning or vaporization of the lesion by ablative lasers, e.g. carbon dioxide lasers, gives accurate control of the treatment depth, and minimises injury to adjacent normal skin. However, the chromophore for ablative lasers is water, but not lipid. Ablation of the lipid-rich xanthoma cells by laser will inevitably cause overheating of the dermis, leading to scarring or even eyeball damage. These xanthoma cells are better treated with topical TCAA with high affinity to lipoprotein. Based on this principle, the author recommends combining the ablative laser with topical TCAA for treatment of xanthelasma.

Method

This combination method comprises Ultrapulse carbon dioxide laser and then topical application of 30% TCAA on the same lesion in the same session. The lesion is first anaesthetised with 2% lidocaine infiltration, and then lasered for one pass using a beam size of 2-3 mm, fluence of 300-350 mJ/cm² (depending on size of lesion) in the Ultrapulse mode. The ideal endpoint is the lesion turning white without charring. The area is then gently wiped with a cotton bud moistened with sterile water or normal saline. Several passes may be required for removing the overlying skin and exposing the xanthoma cells which appear as bright yellow colour. Wiping with cotton bud is necessary after each pass of laser beam. Topical 30% TCAA solution is then applied with a cotton bud and allowed to stay for about one minute until the lesion turns white. The excessive acid is then removed with a moist cotton bud. No dressing is required. Topical antibiotic cream is applied for several days until crusting. Systemic antibiotic is usually unnecessary. In a small-scale two-year study using this method, the author found that scarring was minimal and cosmetically acceptable by the patients (Figure 1). No hypertrophic scar or keloid was seen. The recurrence rate was only five percent after two years based on single treatment.

Comments

The advantages of this combined method include: 1) single treatment session; 2) simple and fast procedure; 3) minimal scarring; and 4) low recurrence rate. I recommend this procedure to the readers.

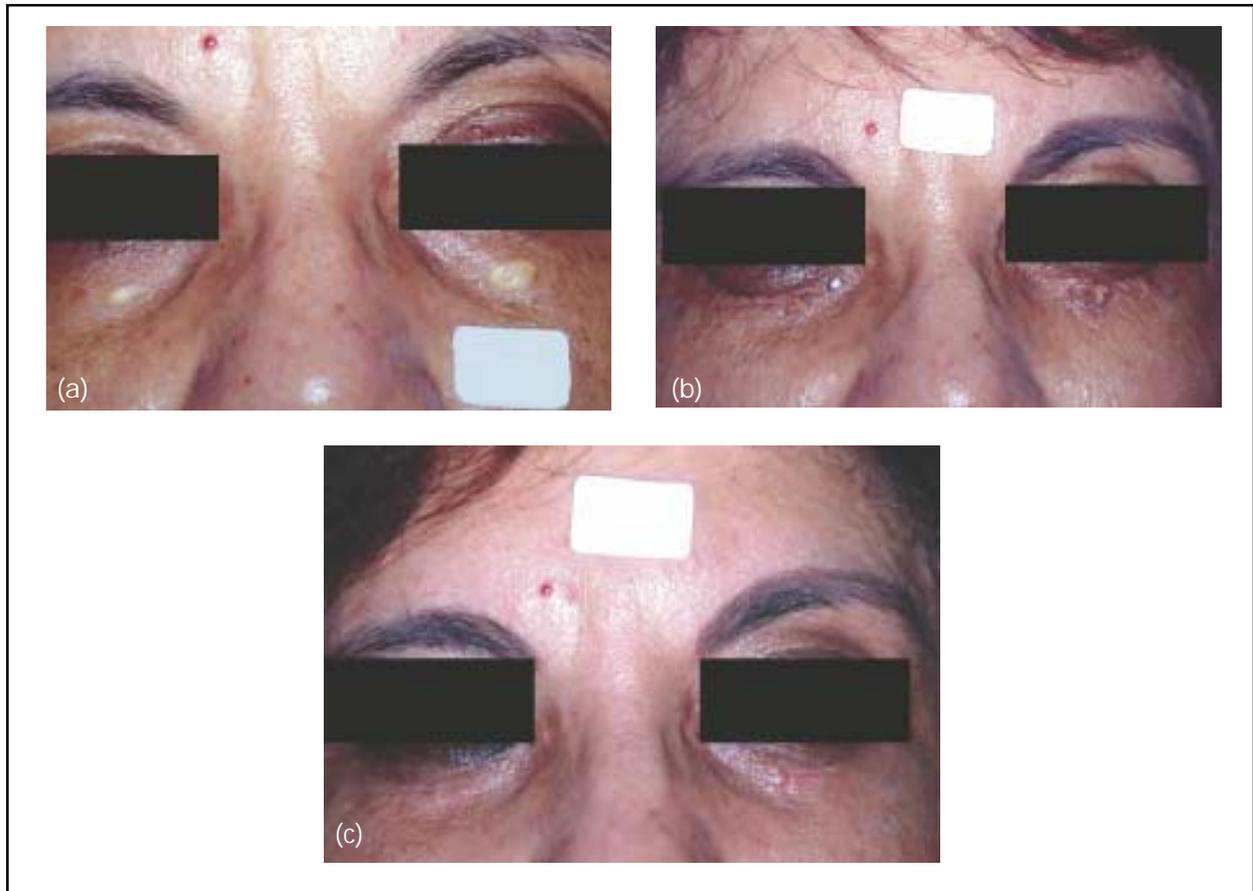


Figure 1. Treating xanthelasma palpebrarum with carbon dioxide laser ablation and topical trichloroacetic acid. a) preoperative view, b) ten days after treatment, and c) six weeks after treatment showing good cosmetic result.