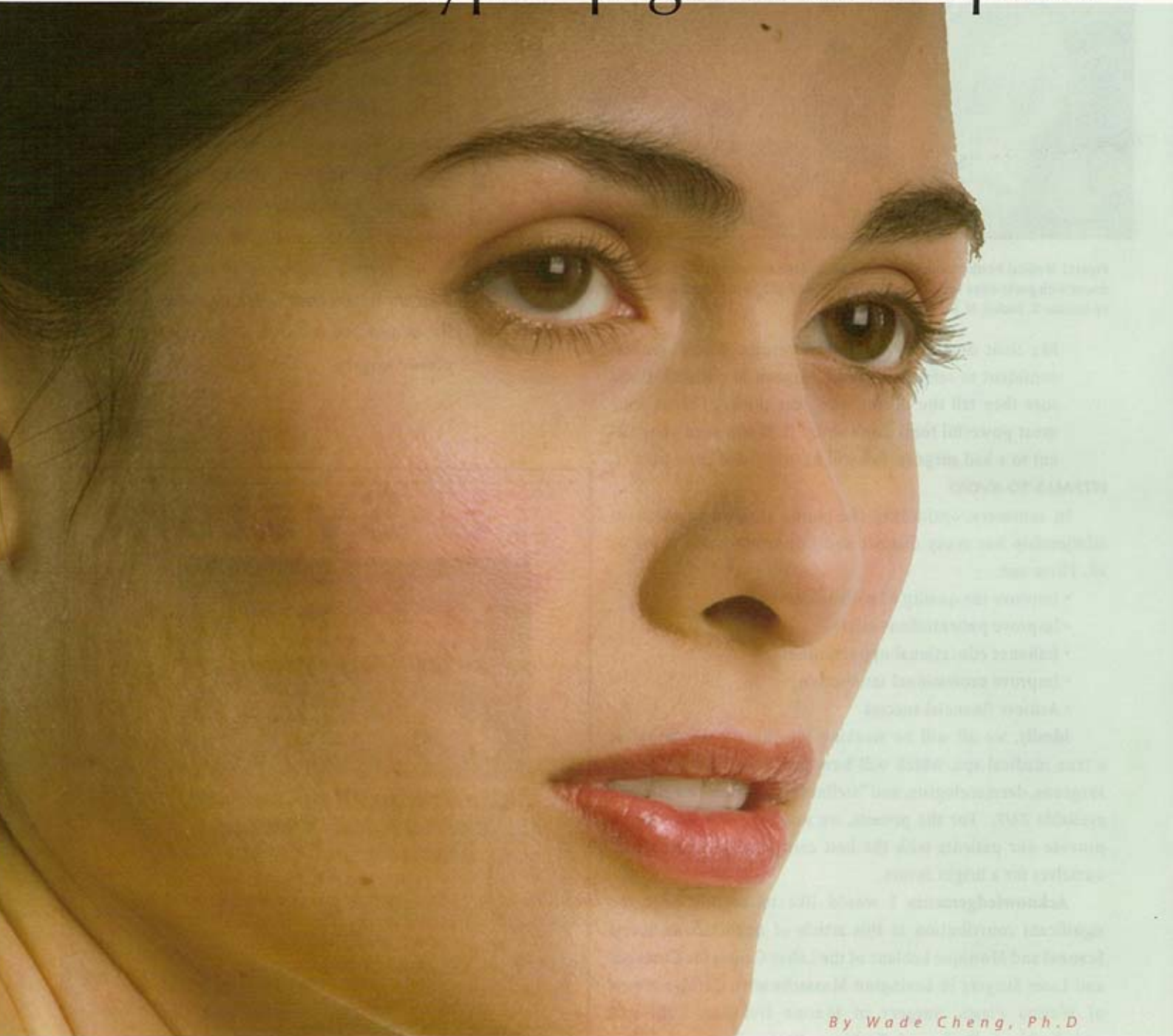


A New Technique for Removal of Hyper-pigmented Spots



By Wade Cheng, Ph.D

Editor's Note: Please check with your state board regulations before performing this treatment, as the use of lancets constitutes an invasive procedure.

DIAGNOSIS

Facial hyper-pigmentation such as melasma, lentigines, freckles and brown spots (liver spots) is cosmetically undesirable. Anti-pigmentation treatment has been a challenging subject for many years. Most topical treatments focus on the inhibition of tyrosinase, a catalyst in the synthesis of melanin.

Bleaching agents commonly used are hydroquinone, kojic acid, arbutin, tretinoin (retinoic acid), azelaic acid or some of these combinations¹. Chemical peels such as glycolic acid, trichloroacetic acid (TCA), Jessner's solution and mechanical dermabrasion have also been used to treat melasma as well^{2,3,4}. At times, topical treatments and peels have been reported to be ineffective and the pigmentation disorder can recur (spots tend to come back)¹. Recently most research and studies focus on cryotherapy (liquid nitrogen)⁵ and various laser techniques such as CO₂ laser, Argon lasers, Q-switched YAG laser among others⁶. The precise efficacy, place of therapy of melasma, recovery condition and risks for both techniques are still being extensively evaluated³.

DESCRIPTION OF A NEW APPROACH: CHEMICAL EXTRACTION

Chemical extraction is a new technique where removal of

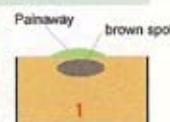
pigmented spots can be achieved with excellent efficacy, great simplicity and minimal side effects. The key is to use a spot removing formula, a product that contains some alkaline-earth metal oxides, deionized water, n-propanol, triethanolamine, benzoic acid and phytic acid,- all excellent in breaking up melanin granules in the epidermis. After a sufficient physical contact between a spot and the chemical composition of a formula with these ingredients, the large melanin granules may aggregate and become a scab or crust. They then separate from the normal skin (peels off).

It has been observed that a dark spot could be removed more easily than a very light spot. Presumably, sufficient melanin granules could more easily aggregate to form a scab than insufficient quantity of melanin granules. Therefore, this technique is very compatible for removal of small and dark spots.

THE 5 BASIC STEPS IN CHEMICAL EXTRACTION:

Step 1. The first step is to clean the skin area of a spot with a sanitizing mixture of ethyl alcohol & isopropyl alcohol then apply a drop of a topical anesthetic to minimize discomfort for a few seconds (do not wipe off the anesthetic.)

Step 2. The second step is to remove the epidermis right above a spot with a sterile blood lancet. Then slightly puncture the spot to provide a good physical contact with the spot removing formula later. In the case of a large spot, a permanent



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makeup machine can be used to replace the lancet for speed, convenience and even puncturing. In this step, a cosmetic magnifying lamp must be used to insure good visibility. Slight bleeding is acceptable and will not cause any problem.

Step 3. The third step is to apply the spot removing formula, which has the consistency of a white opaque paste, only on the



punctured area minimizing the contact with surrounding normal skin area. The spot removing formula should remain on the skin for 10 to 12 hours or overnight. For a big (diameter over 1/8") or deep spot, the formula should be applied onto the spot and wiped off after about one minute once or twice (to increase the penetration for a better removal) before reapplying the formula, which would remain on the skin for 10-12 hours. Make sure you keep the applied spot removing formula away from water and a round bandage can be used to cover temporarily the treated area while taking a shower (do not take a bath). After 12 hours or overnight, the treated area can be washed and will become dark in color. Some opaque particles may still adhere to the spot area (do not remove them).

Step 4. A dark scab or crust will form in 2-3 days and will peel off or rub off in 5-8 days. After the scab peels off, the color on the spot will be totally gone and there will be a reddish dip. The size and depth of the reddish dip depends upon the removed spot size and depth.



Step 5. In step 5, apply a skin soothing cream daily to help skin recover. For better skin recovery, use soothing cream (containing a natural soothing substances such as aloe vera, suma extract, and licorice extract) on a treated spot with a small round bandage for the initial 10 days. If an infection develops, an antibiotic ointment should be used until the infection is gone. The second step (remove the epidermis above a spot) is a key step. Almost all cases in which spots could not be removed successfully by this technique are due to insufficient performance in the second step.



TYPICAL RESULTS

All the spots after treatments should be totally removed if the epidermal spots were well removed. In case a spot was not removed, due to insufficient removal of epidermis, this treatment can be performed again after a week or so. Multiple small freckles can be treated at one time.

Studies show the removal rate including re-treated spots is close to 99%. The redness (erythema) after removal diminished gradually. It was found that a soothing cream (contains



Figure 2: Removal of medium size of facial spot.



Figure 3: Removal of several facial freckles.



Figure 4: Removal of a brown spot on eye lid



Figure 5: Removal of a large facial spot



Figure 6: Removal of several body moles



Figure 7: Removal of several facial moles.

natural soothing substance such aloe vera, suma extract, licorice extract, etc.) could considerably speed up skin recovery. Using the cream daily, the skin recovery time was 10 to 20 days for small & shallow spots and 30 - 60 days for medium & deep spots including moles. For a big & deep spot or mole, the redness could last 4 - 5 months. The skin becomes totally normal and there was no perceptible difference between the treated area and surrounding skin eventually. There was no skin pigmentary change (hypo or hyper-pigmentation) or permanent redness observed.

In several hundred treatments for melasma, lentigines,

freckles, brown spots and some benign moles, approximately 8% of spots were somewhat reproduced or recurred in 3 - 4 weeks after removal. There was no recurrence after removal of benign moles. However, the reproduced spots were slightly lighter or smaller than the original spots in general. Excluding the spot recurrence, the removal success rate was about 92%.

In a few cases, some infection developed - substantial redness appeared around scab. It might be due to excessive puncturing (too deep). Antibiotic ointments such as Bacitracin® or Triple Anti-biotic Ointment was applied to the scab and surrounding area for a few days to eliminate the infection. Figure 2 shows the removal of a medium size facial spot. Figure 3 shows the removal of several facial freckles. Figure 4 shows the removal of a liver spot on eyelid. Figure 5 shows the removal of a large facial spots (permanent makeup machine was used). Figure 6 shows the removal of benign body moles. Figure 7 shows the removal of benign facial moles. These figures demonstrate various type of spots removed via this technique.

The hyper-pigmentation recurrence was reported for both topical treatments and laser techniques¹. Skin appears to have "memory" which remembers the position of melanin granules and might be apt to reproduce melanin granules after the removal. A spot removing formula of this nature might minimize the skins memory so as to get merely 8% spot recurrence. It is recommended that topical creams including vitamin C, hydroquinone or arbutin together with a sun protection cream can be used right after a scab peels off to reduce the chance of spot regeneration.

ADDITIONAL BENEFITS

This technique has been used to remove some colorless moles and skin tags as well as fat deposits with good success. It indicates this chemical extraction technique can not only cause melanin granule separation from normal skin tissue but also can induce rupture of normal skin tissue as well, so as to lead to the elimination of colorless moles, skin tags and fat deposits. In other words, the chemical energy of a spot removing formula could disrupt normal skin tissue just like laser energy or liquid

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nitrogen. Therefore this technique might be used to treat age spots as well.

Malignant melanoma is often associated with skin cancer. It is recommended to consult with doctors for melanoma. It is quite easy to distinguish benign or common moles from malignant melanoma because melanoma is always associated with itching, redness, swelling, hardening, irregular shape and size change. The chemical extraction technique is not for treating melanoma.

In summary, a simple, effective and safe chemical extraction technique for removal of hyper-pigmented spots such as Melasma, lentigines, freckles, brown spots and benign moles has available for estheticians and skin care professionals. It also provides a new dimension for treating hyper-pigmented spots.

Wade Cheng is a founder and Director of R&D Rejuvi Laboratory, Inc. He holds a B.S. degree in Chemistry and Chemical Engineering. He holds a M.S. degree in Analytical Chemistry from the University of San Francisco and has a Ph.D. in biochemistry from the University of California-Davis. He is also conferred a Sc.D. degree in biochemistry from Eurotechnical Research University. He is over 50 publications in various scientific journals and many presentations in beauty & cosmetic conferences.

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