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Is chemical peeling becoming outdated?

Kimyasal soyma önemini kaybediyor mu?

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Chemical peeling procedures are noninvasive treatment methods that are used in some skin diseases and dermatocosmetic practices. The goal is to make the skin look young and healthy by creating a controlled skin damage using chemical agents. These procedures of skin regeneration have been used since the ancient Egypt era. The oldest records are based on Egyptian papyruses and we understand from them that the skin was tried to be repaired using irritant keratolytic solutions. Cleopatra is known to have implemented peeling by having baths with sour milk, which contains lactic acid, an alpha-hydroxy acid. French women used aged wine, which contains tartaric acid, to have a fine and smooth skin. Similarly, substances such as sour milk, animal fats and limestone were used in various periods to rejuvenate the skin[1-3].

The popularity of alpha hydroxy acids (AHA) have increased in the 20th century due to their positive effects on keratinization disorders and chemical peeling has become today one of the most frequently used, simply and easily applied procedures not only in dermatocosmetology but also in the treatment of many dermatologic diseases. Chemical peeling is agreed to be an effective medical method that can be applied easily and safely in hospital, outpatient clinic and private practice settings. While the implementation technique is an important part of chemical peeling, post-peeling patient care and monitoring is equally important. Chemical peeling procedures seem to be becoming outdated as a result of increased skin regeneration practices owing to recently developed non-invasive facial rejuvenation techniques and particularly laser technologies.

Depending on the depth of the damage it produces in the skin, chemical peels are classified as very superficial, superficial, medium and deep. Very superficial peeling involves damaging of the entire stratum corneum. Superficial chemical peeling enables reconstruction of the skin structure through peeling stratum corneum and stimulating formation of a thicker epidermal layer. It is effective in the treatment of superficial skin lesions. Chemical peeling of medium depth produces damage in the papillary and upper reticular dermis. It reverses photo-aging signs including pigment changes and mild-to-moderate wrinkles (Figure 1, 2). It can also be used for the treatment of actinic keratoses. Deep chemical peeling

Figure 1. Frosting as a result of trichloroacetic acid application

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damages all skin layers by producing necrosis and inflammation in epidermis, papillary and reticular dermis. Deep peeling is indicated for patients with prominent photo-aging (Table 1)[4-10]. The chemical peeling procedure commonly used today is a quite simple method. However, many complications associated with chemical peeling may develop. A number of different types of negative changes may occur in the skin in the period following the procedure. Nevertheless, not all of such changes can be regarded as complications. Therefore, these changes are dealt with in 2 groups, expected side effects and complications. The expected side effects (occurring as part of the process after the procedure and healing spontaneously) include temporary erythema, milia, and acne-like rashes. The complications can be cutaneous (hypopigmentation, hyperpigmentation, irregular pigmentation, occurrence of a demarcation line, emergence of nevi, erythema, persistent flushing, scaring and keloid), structural (ectropion, eclabium), infectious (bacterial [Staphylococcic, Streptococcic, Pseudomonas, Toxic shock syndrome) or viral (Herpes simplex, verrucas]) and systemic (cardiac, renal, hepatic, hematologic, laryngeal edema)[8-10].

First started being used in 1990s in Turkey in the field of dermatocosmetics employing glycolic acid, chemical peeling has become increasingly popular since then and in combination with other agents such as AHA, beta hydroxy acid and trichloroacetic acid (TCA) it proved to be one of the most widely used noninvasive methods. Since it could be applied relatively simply in a private practice setting, it has been used frequently as an effective, safe and readily accessible procedure.

Many other methods have also been developed recently in skin regeneration and facial rejuvenation including roller, radiofrequency, fractionated and non-fractionated lasers, ablative and non-ablative

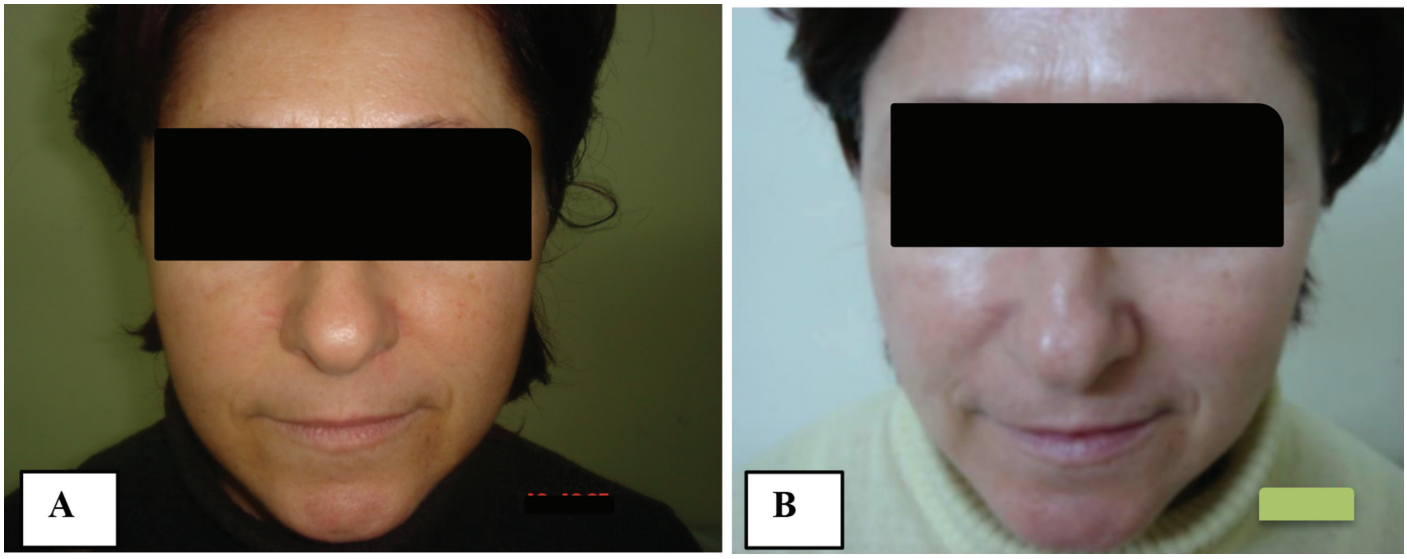

Figure 2. (A) Clinical appearance of a female patient with melasma before chemical peeling procedure with trichloroacetic acid and (B) after 2 sessions

Table 1. Classification of chemical peeling procedures

Depth	Peeling agents	Places of action	Indications	Complications
Very superficial	30-50% Glycolic acid/other AHAs Jessner solution (1-3 layers) 20-30% Resorcinol (for a few minutes)	Entire stratum Corneum preparation	Acne, mild photo-aging	Erythema
Superficial	50-70% Glycolic acid Jessner solution (4-10 layers) BHA (salicylic acid) 40-50% Resorcinol (60 minutes) TCA (10-30%)	Stratum corneum peeling and thicker epidermal layer stimulation	Acne, pigmentation disorders (melasma, post-inflammatory), photo-aging	Erythema, temporary hyperpigmentation, acneiform eruption
Medium	70% Glycolic acid (3-30 min) 35-70% TCA Combinations (CO2 + 35% TCA; Jessner solution + 35% TCA; 70% Glycolic acid+ 35% TCA	Damages papillary and upper reticular dermis	Photo-aging, fine lines and wrinkles, superficial atrophic scars	Erythema, desquamation, hyperpigmentation, solar lentigines, herpes
Deep	Baker-Gordon phenol formula Phenol 88%	Damages skin layers by causing necrosis and inflammation in epidermis, papillary and upper reticular dermis	Pigmentation disorders, severe photo-aging, scars	Infections, pigmentation anomalies, scars, cardiotoxicity, pain, erythema, herpes

AHA: Alpha hydroxy acids, BHA: Beta hydroxy acid, TCA: Trichloroacetic acid

lasers, platelet-rich plasma, mesobotox, and mesofilling[6]. Although its use has diminished for these reasons, its importance seems to prevail as new ready-to-use combined preparations have been developed for the chemical peeling procedures and it can be combined with other methods.

In recent years, historical combined chemical peeling methods such as Monheit (Jessner solution + 35% TCA), Brody (Solid CO^2 + 35% TCA), Coleman (70% Glycolic acid + 35% TCA) and Moy (Jessner solution + 70% GA) as well as solutions combining a number of agents have become available. Various chemical peeling solutions have been developed including the combination of 20% azelaic acid, 10% resorcinol and 6% phytic acid, which is used for melasma and hyperpigmentation, the combined preparation consisting of 20% azelaic acid and 20% salicylic acid for acne treatment, the combination of 20% TCA + 4% kojic acid + 1% Ferulic acid + bexarotene complex and the combination of 40% pyruvic acid + 10% lactic acid[5].

Being present in my dermatocosmetic practice since 1997, chemical peeling procedures have not lost their importance as far as I am concerned and have even become the first option with the new ready-to-use preparations and in combination with other procedures for my patients who have mild-to-moderate photo-aging or for those who have acne, acne scars and epidermal pigmentation disorders. Depending on their dermatological problems, we administer retinoic acid, Kligman formula or dermatocosmetic topical medicines to the patients for whom we plan chemical peeling for about 3-4 weeks to prepare their skin. Patients with Melasma or hyperpigmentation are administered agents containing azelaic acid + resorcinol + phytic acid in 4-5 sessions with 3-week intervals and the topical therapies used before peeling are continued between the sessions. Patients with acne vulgaris and acne scars are administered preparations containing azelaic acid + salicylic acid or pyruvic acid + lactic acid. I use the Jessner solution, buffered TCA or glycolic acid, or their combinations for patients with mild photo-aging. Taking measures to have full protection from the sun in all these periods will increase the chances of success.

In conclusion, chemical peeling procedures should be employed more in dermatology practices in Turkey because they are fairly economic, effective, safe and easily accessible procedures that can be applied in hospital, private practice and clinic settings without any need for equipment. Their use in combination with other noninvasive dermatocosmetic procedures has been evidenced to produce more successful outcomes.

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