

# Common mistakes in chemical peeling procedures: Clinical and practical considerations

Farangiz Shavkat qizi Shokirova

Xadicha Yusuf qizi Norkulova

Kimyo International University in Tashkent

**Abstract:** Chemical peeling is a widely used dermatological and cosmetological procedure for improving skin texture, reducing hyperpigmentation, treating acne, and promoting rejuvenation. Although considered safe when performed according to standardized protocols, procedural mistakes can lead to complications and suboptimal outcomes. This article reviews the most frequent errors in clinical practice, including improper patient selection, inappropriate choice or misuse of peeling agents, inadequate skin preparation, technical errors during application, insufficient post-procedure care, poor patient-practitioner communication, and inadequate professional training. By emphasizing these pitfalls, the article highlights the need for evidence-based protocols, structured practitioner education, and comprehensive patient counseling to optimize clinical outcomes and safety.

**Keywords:** chemical peel, dermatology, cosmetology, complications, patient safety, hyperpigmentation, clinical practice

## Introduction

Chemical peeling is an established therapeutic modality in dermatology and cosmetology, used to treat acne, melasma, photoaging, and textural skin changes. Its clinical efficacy across superficial, medium, and deep peels has been documented in numerous studies [1,3]. However, despite its popularity, preventable errors in patient selection, procedural technique, and follow-up care remain common, leading to complications such as post-inflammatory hyperpigmentation, scarring, and patient dissatisfaction [2,4]. The present article examines these errors and provides recommendations to minimize risk and enhance treatment outcomes.

## Common Clinical Mistakes in Chemical Peeling

### 1. Patient Selection Errors

One of the most significant causes of complications is inadequate patient selection. Contraindications - including active herpes simplex, recent isotretinoin therapy, uncontrolled diabetes, pregnancy, and keloid tendency - are sometimes overlooked [3]. Additionally, patients with Fitzpatrick skin types IV-VI are particularly susceptible to pigmentary complications if preventive measures are not applied [1,2,4].

### 2. Misuse of Peeling Agents and Concentrations

Improper choice of peeling agent or misuse of concentration is a frequent error. Excessive strength or prolonged exposure of superficial agents (e.g., glycolic or salicylic acid) may lead to burns and scarring [2,3], whereas overly mild formulations fail to achieve therapeutic results. Recent evidence shows that sequential application of high-concentration glycolic and trichloroacetic acid peels in darker skin types can be effective but carries a risk of irritation and transient hyperpigmentation, underscoring the importance of careful agent selection [5].

### 3. Inadequate Skin Preparation

Proper pre-peel priming with topical retinoids, hydroquinone, and sunscreen significantly reduces the risk of uneven results and hyperpigmentation. Grimes demonstrated that salicylic acid

peels without hydroquinone priming in darker-skinned patients resulted in higher rates of post-inflammatory hyperpigmentation [2].

#### 4. Technical Application Errors

Uneven application, overlapping zones, or delayed neutralization of agents may cause patchy outcomes or chemical burns. Careful observation of clinical endpoints such as frosting and erythema is essential to prevent overtreatment [4]. Consensus guidelines emphasize that technique and endpoint recognition are as important as agent choice in preventing complications [4].

#### 5. Post-Procedural Management Deficiencies

Post-procedure care is critical for successful recovery. Common mistakes include inadequate photoprotection, premature exfoliation, or the use of irritating cosmetics. Prophylactic antivirals for patients with a history of herpes simplex and emollient therapy should be considered to prevent complications [3]. A recent clinical experience with triple-acid peels (salicylic, citric, mandelic) in patients with skin of color highlighted the importance of structured aftercare in ensuring safe outcomes and high patient satisfaction [6].

#### 6. Communication and Expectation Management

Patients often expect immediate and dramatic results after a single peel. Without clear counseling, dissatisfaction may arise even when procedures are technically correct. Educating patients about the need for multiple sessions and maintenance regimens is essential for alignment of expectations [1,4].

#### 7. Inadequate Practitioner Training

Finally, inadequate practitioner training remains an overlooked issue. Chemical peels require a solid understanding of skin anatomy, physiology, and pharmacology. Reliance on online tutorials or unregulated products significantly elevates the risk of complications [3]. Training programs and expert consensus emphasize the necessity of supervised clinical experience and adherence to standardized protocols [4].

#### Discussion

Errors in chemical peeling arise not only from technical issues but also from insufficient patient evaluation, inadequate preparation, and unrealistic expectations. Preventing complications requires a comprehensive approach that integrates practitioner training, patient education, and evidence-based practice. Newer studies, such as the use of Thiamidol in treating hyperpigmentation in darker skin types, highlight the expanding therapeutic armamentarium that can complement peels and reduce risk [7]. Clinical protocols and consensus guidelines stress structured education and regulatory oversight as critical steps for safe practice [4].

#### Conclusion

Chemical peeling is a versatile and effective procedure in dermatology and cosmetology. However, common preventable errors - ranging from patient selection to aftercare - undermine outcomes. Minimizing these requires thorough patient evaluation, careful choice of agents, precise technique, comprehensive aftercare, and structured training. Incorporating evidence-based guidelines and patient-centered communication will ensure safer procedures, better results, and greater patient satisfaction.

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