Dermatologist Driven Aesthetic Nail Enhancement

Abstract

Background: Nail aesthetic procedures so far have been a neglected domain of nail medicine. With changing times, more people are getting sensitized towards nail enhancement; hence, there is an ever-increasing need for dermatologist driven aesthetic nail procedures. **Discussion:** The management of various nail disorders takes a long time and might not be very rewarding with regard to complete aesthetic improvement. The aesthetic procedures can be utilized to camouflage and provide some relief to the patient. These procedures could also be a treatment modality for various common conditions like brittle nails, onychotillomania, and other habit tic deformities. The aesthetic procedures that we discussed in this article include nail peels, gel nails, and lasers for aesthetic indications. Many side effects of these procedures have been reported in the literature. This can be attributed to the fact that these procedures are currently being done at salons and not by dermatologists. **Conclusion:** Nail peels are a useful modality for nail surface irregularities and can be safely recommended. Gel nail technique is simple and when done by a trained person can be used to benefit patients with superficial nail plate abnormalities to improve their quality of life. The usage of lasers in the aesthetic improvement of nails is still in a nascent stage.

Keywords: *Fractional carbon dioxide laser, gel nail, nail aesthetics, nail peel, pico laser*

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Introduction

Historically, nail has been an important tool in protecting terminal phalanx against injury, improving manual dexterity, the ability to pick up small objects, and as a proxy to social status. Considering the psychosocial importance of the nail unit, it is no surprise that well-groomed and aesthetic appearing nails are on every individual's wish list.[1] This explains the billions of dollars spent on nail care, beautification, and adornment every year. Nail care clinics and salons are now seen everywhere. The upward trend of this industry is here to stay and its expansion requires the dermatologist to be aware of the procedures and hence guide the patients accordingly regarding safe practices.

A wide array of both topical, intralesional, and systemic drugs is now available for nail disorders. Still due to side effects or associated pain, we might see cases where the severity of nail abnormality may not warrant medical therapy. Also, treatment of any nail disorder takes time, aesthetic procedures can be used in combination with medical treatment to increase patient satisfaction many folds.

There are certain dermatologist driven aesthetic procedures, including chemical peeling, gel nails, and lasers, that can help achieve this goal in many cases.[2] Many superficial nail conditions, especially changes like pitting, onychorrhexis, and onychoschizia, are at times not associated with specific nail diseases; hence, they may not necessarily require "treatment" in the true sense of the word.[3] Even if a specific cause is identified, one may not be justified in administering prolonged topical and/or systemic therapy with their attendant side effects. Nevertheless, patients do feel bothered about these changes, which can be better handled by aesthetic procedures.

The points that need to be kept in mind while doing nail enhancements are that a healthy nail has a smooth glossy surface, a translucent nail bed visible underneath, an oval contour, and a healthy periungual tissue with smooth non ragged cuticle.[4]

The aesthetic procedures that we aim to focus on in this article include nail peels, gel nails, and lasers for aesthetic indications.

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Nail peels

Peels have been used in various dermatological indications for more than two decades. However, their use in nail rejuvenation is a relatively newer concept. The equipment needed for nail peels is easily available in any dermatological setup and is relatively inexpensive. It is a simple office-based procedure with no need for a special setup. Most dermatologists are well versed in the technique and associated adverse reactions.

Mechanism of action of chemical peeling in aesthetic nail indications

Chemical peeling agents smoothen the nail plate surface to produce faster improvement of superficial scaling, discoloration, roughness, and pitting. The mechanism of action of peels in nails is similar to that on skin by induction of desquamation of corneocytes leading to cosmetic improvement of the nail surface.

There are a few factors that differentiate the mechanism of action of peels on skin versus nails. The target component of the nail unit is the nail plate; the rest of the components of the nail unit might be shielded or inaccessible to the peeling agent. Since the keratinocyte layer in the nail plate is much thicker in comparison to the skin, higher/stronger strengths of peels are needed for nail unit peeling after ensuring that surrounding structures are safely shielded. Hydration leads to nail swelling; the nail acts like a hydrogel with aqueous pores through which the molecules can permeate. Hence, prior hydration of nail plate can lead to improved peel penetration. Lipid component of nail plate is much lesser in comparison to that of skin. Therefore, chemical peeling agents like alphahydroxyacids that weaken the binding properties of epidermal lipids might not be that effective on nail plate.[5]

Indications

The nail peels have a limited indications in which they have been found useful till now.

Box 1: Aesthetic indications of nail peeling

1. Dry, rough, lusterless, discolored nails - Due to cosmetic overuse[7]
2. Superficial nail abnormalities - Pitting, onychorrhexis (mild), lamellar splitting (onychoschizia)
3. Rough, sand papered nails - Idiopathic shiny trachyonychia[3]
4. Melanonychia

Apart from aesthetic indications, peels have been used as an adjuvant therapy to topical antifungals in cases with limited onychomycosis.[6]

The various aesthetic indications chemical peels have been utilized so far in literature are shown in Box 1.

The nail unit response varies in different nail anomalies, the varying response is shown in Table 1.

Contraindications

The procedure should be avoided if there is local infection at the site of the procedure, for example, paronychia, periungual warts, etc., It should be avoided in cases of very thin nail plates, pregnancy, lactation, heavy manual workers, history of hypersensitivity to the agents used, or unrealistic expectations of the patient. Onychomycosis is a relative contraindication.

Material required

The various materials and equipment needed are shown in Figure 1. They include a pair of gloves, sterile gauze pieces for cleansing, petrolatum jelly for application over nail folds and surrounding skin before peeling, cotton buds for jelly application, nylon brush for peel application, peeling agent of choice, pre-peel cleanser or water for nail cleansing, water for termination of peel action, and stopwatch for timekeeping.

Choice of peeling agent[2]

The nail plate is a thick structure with limited penetration, hence medium depth peels are preferred.

Figure 1: Materials required for nail peel include petrolatum jelly, peeling agent, and applicator

Table 1: Varying response to peeling of different nail abnormalities

Nail abnormality	Clinical/pathological feature	Response to therapy
Superficial nail keratinization abnormalities	• Pitting, mild trachyonychia, onychorrhexis	Responsive
Intermediate nail keratinization abnormalities	• Leukonychia, deeper pits arising due to keratinization defects in nail matrix	May not respond well
Deeper nail keratinization abnormalities	• Onycholysis, salmon patch	Do not improve
Nail pigmentary abnormalities	• Origin in nail matrix melanocytes	Mild improvement

Glycolic acid is an alpha hydroxy acid with low molecular weight, hence deeper penetration. It has a pKa of 3.8. At higher pH, it acts only as a moisturizer. Glycolic acid increases permeability by breaking the disulfide bonds of nail keratin. This leads to increased permeability of drugs. Peels also lead to an increment in hydration of nail plate leading to improved appearance.[5]

Phenol is a hydroxybenzene, an aromatic alcohol with weak acidic properties. Phenol has a pKa of 9.9. It acts by causing enzymatic inactivation and protein denaturation. This leads to cell death and shedding. The protein denaturing effect of phenol might limit its deeper penetration.

Thus, both the peeling agents act by dyscohesion of corneocytes/onychocytes and promote their shedding.[8]

Procedure

Pre-procedure requisites

Proper patient selection is important. A detailed clinical history, including history of any cutaneous or systemic disorder, occupational history, prior nail procedure history, and any allergy to nail care products, should be carefully recorded. Any active bacterial or viral infection in the nail unit or surrounding area needs to be ruled out.

Written consent should be taken and proper patient alignment about any possible side-effects should be done. Specific consent is a must for nail photography and utilization of photos for any study, social media promotion, or presentation.

Peel application

After cleaning the nail with alcohol/pre-peel cleanser, apply petrolatum jelly on the cuticles, lateral nail folds, and distal nail folds with a cotton-tipped applicator. [Figure 2] This is a very important step as medium-depth peels used for nails can prove to be very strong for the surrounding skin. Preferably, clean the nail with water. Usage of alcohol or acetone should preferably be avoided since it can lead to further drying of the nail leading to a reduction in penetration properties of the nail plate. Another rationale for not using alcohol is the lower lipid content of nails in comparison to skin; hence, degreasing is not required.[9] Take a small nylon brush or earbud and apply a single coat of the peel for dull and dry nails. [Figure 3] The brush should be narrow as the nail is a small and convex structure. If peeling is being done for pathological conditions clinically presenting as deeper defects, 2–3 coats can be applied. Water-based peels can be kept for 10 minutes, while the gel-based peels can be kept for up to 30 minutes. The removal of peel can be done with cotton dipped in water. The gap between the sessions can be 2–4 weeks. The post-peel instructions include liberal moisturization of nails and surrounding skin. Treatment outcomes are discussed in Table 1.

Precautions during nail peel procedure

Proper patient selection is important. Expectation alignment should be done and patients with unrealistic expectations should preferably be excluded from the study. Proper history and examination to rule out the presence of infectious conditions in and around the nail unit are important since conditions like paronychia, wart, etc., can get aggravated post-peel. In addition to these, brushes need to be properly disinfected post-procedure to prevent the risk of spread.

Proper selection of peeling agents and use of a small narrow peel application brush is a must. Use of strong peels at 2 weekly intervals for a prolonged period can lead to splitting of nail plate; hence, it is advisable to increase the gap between sessions to 4 weeks after the first 3–4 sessions. Application of vaseline around the nail unit and cuticle to protect them is a must. Copious use of moisturizers in between the sessions improves the treatment outcome. Patients are advised sunscreen usage to protect nails and hands.

Figure 2: Application of petrolatum jelly to protect cuticle and nail folds

Figure 3: Application of peeling agent with ear bud

When peel is done for aesthetic improvement of non-infectious conditions, e.g. nail thinning consequent to lichen planus, then there can be a theoretical risk of Koebner's phenomenon and a risk of further worsening if timely assessment of treatment outcomes is not done.

Complications

Peels are a safe procedure if done with due precautions. Various side effects include periungual irritation, dryness, and peeling in the periungual area.

Limitations

The data with regard to nail peels is very limited. There is a lot of variation in the available literature. The peeling agents do not offer etiological improvement. Peels do not improve the translucency of nails, which is considered the most important feature of a cosmetically pleasing nail. However, the peels do improve the nail plate surface, providing an overall smooth appearance.[2]

There is a need for repeated sessions that make the management prolonged making it a time-consuming procedure with limited efficacy, hence judicious patient selection is a must.

Conclusion regarding usage of peels

Chemical peels are a useful modality for nail surface irregularities. There is a paucity of literature; however, the available ones do show promising results. The various studies on nail peels in aesthetic indications are discussed in Table 2. Many factors still need to be clarified about the choice of peeling agent, number of sessions, and gap between the sessions. About future directions, Lam *et al*.[12] recommended use of nail thickness measurement before and after peeling using a micrometer. This will be able to objectively evaluate the reduction in nail thickness. Quantification of the amount of ridging before and after peel can be done. For assessment of nail smoothness and luster, there can be a grading system that can be based on the degree of roughness and unevenness, sheen, and color of the nail plate.

Despite the lack of standardized protocols, they can be safely recommended in cases where conventional therapies cannot be used or the patient needs only aesthetic improvement of dry/rough nails.

Gel nail

Gel nails are a very commonly done nail procedure by manicurists and salons, though their use by dermatologists

Table 2: Various studies on nail peeling in aesthetic indications

Authors and study year	Indication	Agent used and	Treatment protocol	Number of patients	Comment	Side effects	LoE
Banga and Patel 2014[7]	• Dry rough discolored nails • Hyperkeratotic, thickened nails due to onychomycosis or nail lichen planus • Pitted nails or nail ridging	70% Glycolic acid for 45 minutes	One session for dry, rough discolored nails. Multiple sessions weekly for nail pathologies	31	70% Glycolic acid can be a safe, effective, well tolerated treatment modality.	Mild burning sensation, dryness and peeling in and around cuticle in few patients	4
Daulatabad *et al*. 2017[3]	• Idiopathic trachyonychia • Longitudinal ridging • Isolated nail pitting secondary to psoriasis	Intra-individual right-left comparative study: right side 2 coats of 8% phenol +15% TCA, left side 2 coats of 70% glycolic acid, both sides for 20 minutes	8 sessions: once weekly for the first four sessions and then once every 2 weeks in the last four sessions	15	Both medium depth peels were found to be safe and equally effective	Leukonychia in 2 patients with glycolic acid peel	3
Mukhija *et al*. 2018[10]	• Nail lichen planus • Nail psoriasis • Alopecia areata • Trachyonychia • Pachyonychia Congenita	70% glycolic acid for 45 min	15-day interval between sessions. 3 sessions in 10 patients, 5 sessions in 16 patients, and 6 sessions in 4 patients	30	70% Glycolic acid is efficacious modality for thick, rough, pigmented nail plate conditions with cosmetically pleasing results.	-	4
Chiheb *et al*. 2021[11]	• Cosmetic induced superficial nail abnormalities (G1) • Pathological conditions (G 2)	50% glycolic acid for 45 min	1–2 coats for 1–2 sessions weekly (G 1) 2–4 coats for 6–12 sessions weekly for (G 2)	20	There were 12 patients in G1 and 8 in G2. In G1, 8 patients had good response. In G2, 6 had good response.	Periungual irritation (2 patients), leukonychia (1 case)	3

LoE - Levels of evidence; G 1 - Group 1; G 2 - Group 2

has not been evaluated. Although the usage of gel nails is increasing with each passing day for cosmetic purposes, there are some reports of them being used for aesthetic conditions like brittle nails, onychotillomania, and ingrown toenails.[2,4,13,14]

Indications

Gel nails have been used for decades to improve the aesthetic appearance of normal nails. They impart shininess and smoothness to the nail plate surface. They make the nail polish last longer on the nail plate. They are an excellent tool for improving the cosmetic appearance and camouflaging superficial surface irregularities in trachyonychia, nail pitting, onychorrhexis, and onychoschizia.[15]

It can be combined with medical treatment of nail disorders like nail lichen planus or nail psoriasis since it takes a long time for the treatment to show effects and gel nails can provide cosmetic improvement in the interim. They can be utilized for the management of brittle nails and for breaking the habit of onychotillomania. The gel nails provide a physical barrier, making the act of biting/picking nails more difficult and serve to hide the dystrophic nail till affected nails are growing out. In professions where there is regular trauma being incurred to nails, e.g., guitarists, gel nails can be used to strengthen nail plates and to improve the appearance of damaged nail plates. In certain disorders like pterygium, wherein no medical or surgical benefit can be offered to the patient, gel nails can be used to improve appearance.

A distinct advantage of using gel nails in a diseased nail in comparison to a normal nail is that the rate of growth of diseased nails is slower, hence gel nails last longer.

Contraindication

Nail fold and nail bed anomalies in the form of active infection like paronychia, onychomycosis, and periungual or subungual warts are absolute contraindications. They can be avoided in suspicious cases of melanonychia of unknown origin. Patients with known allergies to acetone or any other component of gel nails should not be considered for the procedure.

Material required

The basic equipment needed for gel nail application includes a nail cleanser, disposable nail filer, nail primer solution that is made up of 100% methacrylic acid that acts as double-side sticking tape, natural gel, and gel nail brush. [Figure 4] A specialized portable UV Lamp/light emission diode (LED) light and post-curing cleaning solution composed of ethyl acetate, isopropyl alcohol, and isobutyl acetate. The differences between UV lamps and LED lights are listed in Table 3.

Figure 4: Materials required for gel nails include nail cleanser, petrolatum jelly, cotton tip applicator, disposable nail filer, nail primer, gel nail brush, natural gel, UV/LED Lamp

Table 3: Differences between UV lamp and LED (light emitting diode) light

Differences between LED and UV Lamp[2]	
LED	**UV lamp**
Emission of narrower range UV Light wavelength, at higher concentration and energy	Emission of broader range of UV Light wavelength at a lower concentration and energy
Better efficiency by curing in 30–60 seconds	Lesser efficiency in curing in 2–4 minutes
Enhanced portability due to light weight	Lesser portability due to heavier weight
All gel nails cannot be cured by LED	Cures all gel nail types
Lasts longer (50,000 hours)	Bulb needs earlier replacement (5,000 hours)
Relatively expensive	More economical

Procedure

Pre-procedure requisites

Proper patient selection is done. Any previous history of allergy to artificial nails is noted. The patient is explained about the procedure in detail along with possible side effects and counseled regarding the need for repeat applications. Baseline clinical photographs utilizing standard positioning and lighting need to be taken.

Application of gel nails

The nail unit as well as the surrounding area is cleaned with cleanser. Application of paraffin ointment on the cuticle is done to avoid any side effects, following which a very important step of buffing is done. Care should be taken not to over-buff the nails with a disposable nail file. In normal nails, some amount of buffing would be required. Buffing is needed in thick nails; however, it can be avoided in thin nails with irregular surfaces. Care should be taken not to push back or tamper the cuticle at all.

The primer can be caustic to the skin and can cause nail thinning. Therefore, the primer should be carefully applied in minimal quantity after protecting the surrounding skin before its application.

After buffing, a drop of primer solution is applied to the prepared nail surface. It is allowed to dry on its own in 1 minute. Primer acts as a double-sticking tape by forming covalent bonds between the nail plate on one side and the nail gel, which is applied as the next layer. A single layer of transparent natural nail gel is applied as the next layer. A double layer can be applied if the condition demands. Care needs to be taken to avoid contact with the cuticle or surrounding skin.

The next step is curing or hardening. This is done with a portable UV Lamp, compact fluorescent lamp (CFL), or LED lamp. The time for curing/hardening with a CFL lamp is 2 minutes, while LED light cures in 30 seconds. It is important to protect the skin of the hand with a cloth when curing is done. Patients should be advised to use regular sunscreen on their hands. Patients can be advised to wear nitrile gloves with fingertips cut off.[16]

The last step is cleaning with a post-curing solution to remove excess gel or the remnants.

Following all steps, post-procedure photos are taken.

Post-procedure instructions include moisturization of nails and nail folds. They can continue with normal daily activities.

Removal of gel nails

Usually in nail spas or salons, the gel nail removal is done by dipping hands in pure acetone for 30 minutes. Acetone is an irritant even at low concentrations and can lead to dry lustreless nails.[17] In mild involvement there can be onychoschizia and in severe cases there can be contact dermatitis of the surrounding skin.[18] The best practice to remove gel nails is to use a nail polish remover-soaked cotton ball and keep it under occlusion for 5 to 7 minutes over the nail. In a few cases, there might be a need to scrape off the remnant gel. Liberal moisturization of nails is advised thereafter.

The whole procedure should be conducted in a well-ventilated room with an exhaust fan. The operator

Box 2: Practical points with regard to gel nails

Procedure of application of gel nails stepwise and points to be remembered to reduce side effects
- Proper alignment of patient with realistic expectations and possible side effects
- History of allergic reaction to nail cosmetics/artificial nails should be elicited
- Cuticle should not be manipulated at all
- Nail plate buffing should be kept to minimum
- Application of primer solution should be done very carefully.
- Apply thin coat of gel over nail plate voiding application on cuticle and surrounding skin to minimize chance of allergic reaction
- Before curing with he nail with lamp, apply sunscreen and ensure covering of hand with cloth/glove to protect.
- Clean any remnants
- Proper equipment care-cleaning/changing bulbs

Procedure for removal of gel nails with precautions
- For removal of gel nail, authors suggest use of cotton ball dipped in nail polish remover for 10 min reducing chances of allergy or dehydration of surrounding skin.[14]
- Application of thick coat of moisturizer

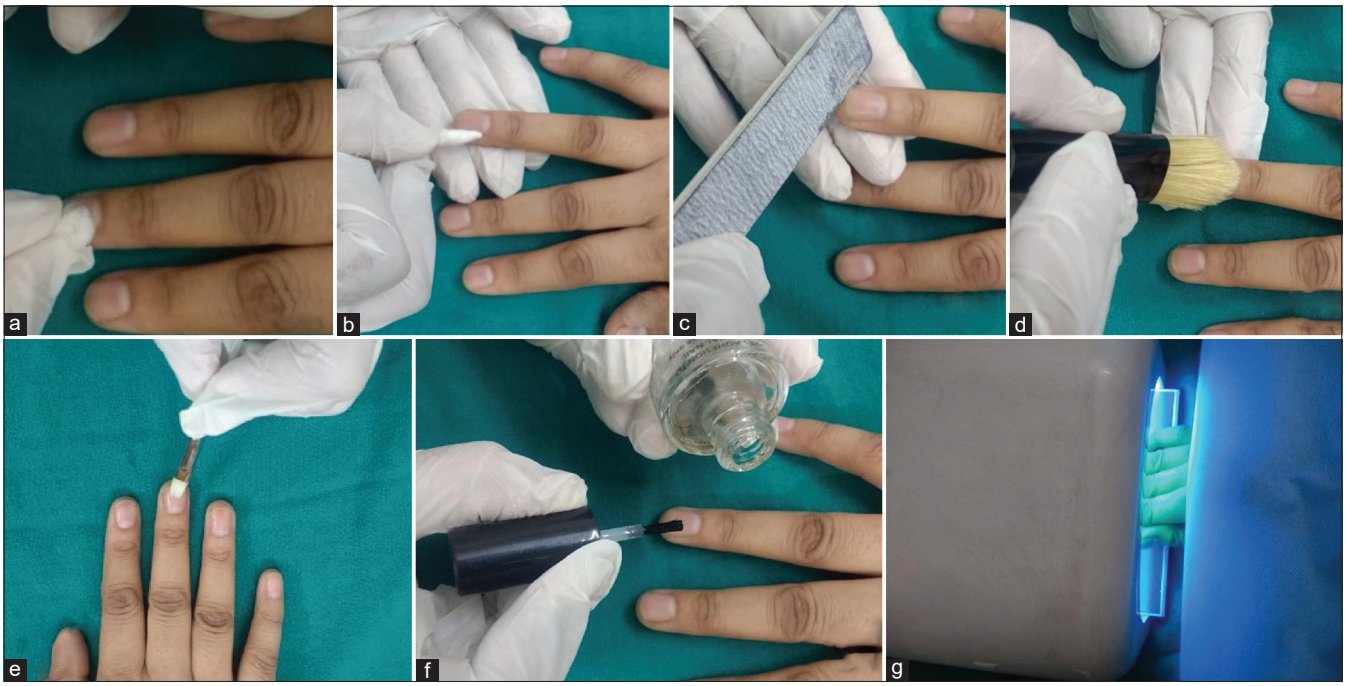

Figure 5a-g: Procedure for application of gel nails. a: leaning and degreasing of nail plate. b: Application of Vaseline ointment on cuticle. c: Buffing of nail plate. d: Dusting away of buffed nail plate with brush. e: Application of primer solution. f: Apply thin coat of gel over nail plate. g: Cure the nail with lamp, prior application of sunscreen to be done and covering of hand with cloth/glove to protect

should be wearing a mask at all times to prevent inhalation of fumes from agents being used. Box 2 shows important points with regard to gel nail procedure [Figure 5a-g]. A minimum gap of 1 week is recommended between two gel nail applications.

Treatment outcomes

The use of gel nails cosmetically improved the appearance of nails whether normal or those showing surface abnormalities like mild pitting, longitudinal ridging, brittleness, etc., The psychological impact of nail disease is profound and gel nails improve the quality of life (QOL) by improving the aesthetic appearance of nails.

Complications

Gel nail usage is on the rise, hence, a proper understanding of the side effects and their prevention is a must.

Gel nails can lead to contact allergic dermatitis due to the presence of acrylates in the preparation. Contact allergy to acrylates with varied reactions, including nail fold, fingertip, hand, and face and neck dermatitis, has been reported in the literature.[19]

In a case series, all patients found positive on patch testing for HEMA (2-Hydroxy-Ethyl Methacrylate), experienced resolution of dermatitis after removal of their acrylic nails or upon discontinuing work with acrylic gel nails.[20]

Rare complications of gel nails include paronychia, nail dystrophy, and onycholysis.[20]

Photo-bonded nails can also present with a rare side effect in the form of psoriasiform onychodystrophy,[21] presenting with nail changes suggestive of psoriasis including onycholysis, splinter hemorrhage, hyperkeratosis, and nail plate thinning.[22]

As the nail grows, they need infillings, especially in acrylic nails. Peripheral neuropathy is a rare complication of gel nails. It can be due to local neuropathy induced by methyl-methacrylate.[23]

Usage of ultraviolet light has been associated with cutaneous malignancy and ocular toxicity. UVA lamps are utilized for curing gel nails. Diffey concluded that although the risk of inducing squamous cell carcinoma from exposure to UVA nail lamps is very low, it should be reduced further by wearing fingerless gloves on lamp exposure.[16] The scatter of light from the UV light unit onto the eyes has also raised concern regarding ocular toxicity. It may be prudent to use UV filter glasses to protect the eyes.

Limitations

The major limitations of gel nails include their non-utility in anonychia. A nail plate base is needed for the application of gel nails.

Conclusion regarding gel nails

The gel nails technique is simple; it can be learned by dermatologists and can be used to benefit patients with superficial nail plate abnormalities to improve their QOL and confidence. If used by trained hands, they are a very safe entity. Proper attention and a few modifications while application and removal are all that is needed to prevent side effects.

Lasers and nail aesthetics

The treatment of nail disorders requires long-term duration. The challenge is treatment adherence; patients tend to lose patience due to slow cosmetic improvement. The introduction of lasers in nail disorders can increase the possibility of shorter treatment regimens along with deeper penetration and a more targeted approach. Lasers that have been used in nail aesthetics include fractional CO_2 and Q-switched lasers.[24]

Mechanism of action of laser

Fractional CO_2 laser has been used in twenty nail dystrophy. The laser creates a column of destruction down to the dermis that aids penetration of topical medication and can stimulate the nail bed rejuvenation as well.[25]

Picosecond laser has a wavelength of 1064 nm. It has been used successfully for the management of pigmentary disorders. It has a selective photochemical effect that leads to mechanical breakdown of pigment into smaller fragments. It thereby leads to minimal thermal irritation in the surrounding area; hence, it can be used as a treatment option for pigmentary disorders of nails.[26]

Indications

The usage of lasers for various dermatological disorders has been proven beyond doubt. As far as nail disorders are concerned, onychomycosis and nail psoriasis are the most evaluated disorders.[21] The usage of laser systems in nail aesthetics is still in a very nascent stage. There are only a few case reports citing their utility in trachyonychia and melanonychia.

Fractional CO_2 laser for trachyonychia-[25]

Trachyonychia is a benign nail condition. In this case report, the patient did not have significant improvement with oral or topical conventional therapies. Fractional CO_2 laser was done with a pulse energy of 160 mJ, pulse duration of 8.0 ms, density level of 17, and depth level of 2. Two sessions of treatment were done within five-week intervals. There was clinical improvement evident as a refinement of the nail's texture.

Pico laser for melanonychia[26]

Longitudinal melanonychia is a confusing problem as it can be caused by a variety of factors, including trauma,

infections, drug-induced, systemic disease-related, nevus, ethnicity, or melanomas. The usual approach for such bands is to wait and watch or nail matrix biopsy to find the cause.

Tsai *et al*.[27] treated pigmented nail with picosecond laser using the picosecond laser system with a pulse width of 750 picoseconds, wavelength at 1064 nm, spot size of 3–4 mm, and two passes with fluence from 4.8 to 5.0 J/cm^2.

After 3 months of follow-up, there was a complete disappearance of hyperpigmentation of the nail. The authors concluded that the use of a picosecond laser for drug-induced melanonychia can be a useful option.

Liu *et al*.[26] treated two such males with a picosecond laser, 1064 nm, pulse width of 450 picoseconds, spot size of 5 mm, and fluence of 1.6 J/cm2 was applied for two sessions at one-month intervals.

Both patient's nail lesions resolved completely and did not recur after 6 months. The authors concluded that picosecond laser can be a promising non-invasive option for patients seeking aesthetic improvement for melanonychia.

Complications

The lasers were considered to be a safe modality while using them for aesthetic indications. A mild stinging sensation was observed in some cases in the local area.[23]

Limitations

The utility of lasers in the management of nail disorders is still evolving. There is a lack of universally accepted protocol. There is sufficient proof that lasers are effective in the management of nail disorders, however, there is a lack of clarity regarding the usage of the type of laser for a particular disease, treatment parameters, and follow-up protocol. Studies involving larger sample sizes with a control group and longer follow-ups are needed to make a conclusive statement regarding the utility of lasers in nail disorders, particularly nail aesthetics.

Conclusion regarding laser

The use of fractional CO_2 laser as a penetration enhancer can be considered a therapeutic option for the management of twenty nail dystrophies. The laser can be combined with topical medications as long-term therapy.

Picosecond laser has good effectiveness in pigment clearance with fewer adverse effects. It can be used for the treatment of drug-induced melanonychia and longitudinal melanonychia due to melanocyte activation.

Conclusion

Nail peels can be safely recommended in cases where conventional therapies cannot be used or the patient needs only aesthetic improvement of dry/rough nails.

Gel nail technique is simple and when done by a trained person can be used to benefit patients with superficial nail plate abnormalities to improve their QOL.

The usage of lasers in the aesthetic improvement of nails is still in a nascent stage. Further studies need to be done to establish the role and efficacy.

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Conflicts of interest

There are no conflicts of interest.

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