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Aesthetic dermatology procedures in coronavirus days

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Abstract

Background: Severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2; COVID-19), which causes coronavirus disease 2019, is highly contagious and a particularly popular problem in all around the world and also in all departments of every hospital.

Aims: Protecting the well-being of the aesthetic dermatologists while providing a sufficient workforce is vital for pandemic planning.

Results and Conclusions: In this article, we will discuss this problem from an aesthetic dermatology aspect and we will review whether these procedures are safe or not.

KEYWORDS

aesthetic, COVID-19, dermatology, procedures, skin

1 | INTRODUCTION

COVID-19 infection has spread rapidly across the world since its identification at the end of 2019.[1] Aesthetic dermatologists and also patients are at risk due to the close contact with the skin and the mucosa.[2] We summarized this coronavirus-related aesthetic dermatology condition in 3 phases; Aesthetic Dermatology Education and Congress, Skin Care to Prevent transmission of COVID-19 during aesthetic dermatologic procedures, and safer or more dangerous aesthetic dermatology procedures in routine dermatology office and departments.

2 | AESTHETIC DERMATOLOGY EDUCATION, WORKSHOPS, AND CONGRESS

After March 2020, all national and international aesthetic dermatology congress, symposiums, workshops, and hands-on training events have been cancelled or postponed due to COVID-19 pandemia. Almost all cosmetic companies, associations, universities, and aesthetic dermatology groups created e-learning programs such as webinar, online lectures with powerpoint slides, and also online conversations. While the healthcare industry continues to run its function; the other businesses can function on a work-from-home basis, and aesthetic dermatology education is almost closed and is just waiting for COVID-19 to be under control and to get out of the unknown. These online courses and training programs will improve our skills and knowledge in aesthetic dermatology practice.[2]

3 | SKIN CARE TO PREVENT COVID-19 BEFORE AESTHETIC PROCEDURES

COVID-19 virus may pass through the mucous membranes including nasal, ocular, and larynx mucosa and then enters the lungs through the respiratory tract.[3] There are no still available therapies, and the only way to prevent the virus spread is regularly and thoroughly cleaning hands with an alcohol-based hand gel or washing them with soap and water for at least 20 seconds. Apart from alcohol and soap, antibacterial agents in those products do not affect the virus structure much.[4] In coronavirus days, we have to prefer alcohol-based skin cleanser before these procedures. Also, we can advise to take shower before aesthetic procedures for the patients. Alcohol-based cleanser products contain a high share of alcohol solution, typically 60%-80% ethanol, sometimes with a bit of isopropanol, water, and a bit of soap. Ethanol and other types of alcohol do not only form hydrogen bonds with the virus material but also, as a solvent, are more lipophilic than water. Hence, alcohol does dissolve the lipid membrane and disrupt the other supramolecular interactions of the virus.[2,4] We should prefer alcohol-based cleansers, not antiseptics such as octenidine, chlorhexidine, and iodine. We should also use

personal protective equipments such as medical masks; protective eyewear, and medical gloves during the procedures.[2]

4 | AESTHETIC PROCEDURES DURING COVID-19-DAYS

4.1 | General recommendation

During this COVID-19 pandemic, a pragmatic guide underlying the risk stratification and an appropriate aesthetic dermatological care is needed. Older patients and people of any age who have serious underlying diseases including chronic lung, kidney, liver and heart diseases, immunocompromised conditions, obesity, and diabetes mellitus might have a higher risk for severe illness from COVID-19.[5] We must postpone all of the aesthetic dermatology procedures of these risky patients until this pandemic is completely over.

We know that almost all upper tract virus infections are mostly seen during winter and this pandemic condition can relapse or might continue for a long time.[6] COVID-19 pandemic is having a serious effect on patients' mental health.[7] These aesthetic dermatologic procedures like botulinum toxin injection can also help in minimizing of the psychological problems.[8,9]

SARS-CoV-2 can survive in the air for up to three hours.[10] So by opening the window, we can remove and disperse the droplets and reduce the amount of virus in the air—which will reduce the risk of infection for others in the room. If we have more rooms, we can change operation room and use another room after each procedure. We have to open all windows during this time in the empty room. We also must minimize this outpatient appointments for aesthetic dermatology procedures with minimal staff. Negative pressure operation room for aesthetic procedure would be ideal to minimize the infection risk. But, generally, these rooms are designed to have positive pressure air circulation and high air exchange cycle rate like >25 cycles/h can help to decrease the viral load effectively in the operation room.[11,12] Aesthetic dermatology devices kept in the room must be minimized. We can recommend regularly changing of the gloves especially of latex-free type after each procedure. Frequent washing of the hands with soap and also using antiseptics may induce allergic and irritant contact dermatitis of the aesthetic dermatologists. We can advise moisturizer and barrier creams after cleaning and also bar soaps with moisturizers after each procedure.[13]

4.2 | Botulinum toxin injections

We know that the botulinum toxin-A-treated patients show significantly less negative mood.[8] In these days, lots of people suffer from acute botulinum toxin deficiency syndrome especially those who regularly have this procedure. Bacterial toxins like botulinum toxin could be a potential weapon against the viral infections like herpes viruses, HPV, and HIV.[14] With the recommended preventive approaches, botulinum toxins can be safely administered to patients, assuming standard safe injection techniques. Botulinum toxin treatments may give positive mood to our patients during these coronavirus days.

4.2.1 | Fillers

There are a plenty of reports about the improvements of patient satisfaction with the treatment of the fillers.[15] It was demonstrated that calcium hydroxyapatite, methacrylate, acrylamides, and silicone could produce notable chronic activation of the immune system. By contrast, hyaluronic acid can elicite a little immune response.[16] COVID-19 can induce the uncontrolled cytokine and chemokine response known as a "cytokine storm," and this condition leads to the over-activation of the effector T cells and production of the pro-inflammatory cytokines.[2,3] To prevent this scenario, we can prefer hyaluronic acid filler and also empiric antibiotic treatment beginning with macrolide or tetracycline, which may have some anti-inflammatory and immunomodulatory effects. Using smaller gauge needles, avoiding risky regions, such as glabellar folds and periorbital region, and adding prophylactic antibiotics with a lighter filler product are recommended to reduce the incidence of side effects.[16]

4.2.2 | Lasers

Covid-19 virus can survive for longest on both stainless steel and plastic—for up to nine days. The shortest survival time is one day on paper and cardboard.[1] Almost all types of laser devices have stainless steel or plastic handpieces. This condition brings viral dissemination between the patients. Key laser safety principles consist of flammability, ocular safety, electric hazards, laser plume, and infections.[17,18] During dermatological laser treatments, alcohol-based skin preparations should be strictly prohibited. Laser therapies generally create aerosolized particles and fumes during the treatment sessions. These aerosolized fragments have been reported to contain some viruses such as HPV, HIV antigens, the other viruses, and also cellular materials.[18] Laser light may be reflected as %7 with cellular materials when applied to the skin. The main side effects of lasers include pain, erythema, blister formation, ulcers, bacterial, and viral infections.[17] For these reasons, we must not use laser therapies during coronavirus days in dermatology departments and offices.

4.2.3 | Chemical peeling

These methods have been used for nonaggressive skin regeneration and face lifting without any serious side effects from ancient times. Novel smart peeling systems contain combination of lesser concentrated acids such as %35 TCA, %10 kojic acid, %5 mandelic acid, urea, peroxide, and coenzyme Q10, and we can use this aesthetic dermatology procedure at any time of the year, even in summer.[19,20] We know that acidic compounds, including caffeic acid, rosmarinic acid,

and chicoric acid, have antiviral properties toward some viruses such as herpes simplex virus, influenza virus, and HIV viruses.[21] These peeling systems may reduce viral load from the skin. We can use these peeling methods in coronavirus days, but we should not use deep chemical peels such as phenol chemical peels, phenol-croton oil, highly concentrated TCA, lactic acid, and glycolic acids because of the serious epidermal damage and viral contamination risks.

4.2.4 | Cabin-type dermatologic devices

We should not use these procedures such as dermatologic phototherapies, cabin-type cryotherapy, and cabin-type ozone therapy till coronavirus problem is completely gone. We know that frequent phototherapy treatments can also lead to immunosuppression. Basically, UV therapies can suppress immune system, leaving body open to some infections like COVID-19. Cabin-type cryotherapy and UV therapy also often cause epidermal damage, and this complication may carry contamination risk. In these devices, we cannot remove and disperse the infectious droplets and we cannot reduce the amount of virus in the cabin's air easily.[22]

4.2.5 | Platelet-rich plasma

We use this aesthetic dermatology procedure for skin rejuvenation, skin pigmentation disorders, and alopecia.

It was observed that PRP can induce antimicrobial effects. Some authors propose that it might be used to treat some infections.[23,24] They found that the major volume of thrombin as an activator could increase the strength of the antimicrobial effect of PRP.[24] PRP can also induce endothelial cell proliferations, migration, and tube formation.[24] These conditions may help in skin defense against COVID-19, and we can easily do PRP procedures for different dermatological problems such as alopecia, skin aging, and pigmentation disorders. But we have to provide maximum personal protective approach during all procedures.

4.2.6 | Mesotherapy

We use mesotherapy for skin rejuvenation, lifting, fat removal, skin pigmentation disorders, and alopecia.[25] Mesotherapy is sometimes responsible for dermal and subcutaneous infections caused by different infectious agents such as Mycobacterium chelonae, M. abscessus, and M. Fortuitum after cellulitis therapy.[26] We should be careful about the deep subcutaneous injections of phosphatidylcholine or deoxycholate for fat and cellulite removal during these coronavirus days.[27]

But generally excellent responses to adjunctive minoxidil, finasteride, dudasteride, biotin, or D-panthenol mesotherapies in male androgenetic alopecia have been reported 25. Some authors believe that the hyperandrogenic phenotype might correlate with COVID19 increased viral load, increased viral dissemination, and severity of lung involvement. They propose that anti-androgens such as finasteride and dudasteride are potential treatment options for COVID-19.[28,29] We can use these anti-androgen mesotherapy procedures for alopecia during coronavirus days.

4.2.7 | Thread lifting

This procedure is used to improve the appearance of aging in the lower face, jaw line, malar fat pad, and mid-face. Generally associated procedures in parallel, including fat grafts, botulinum toxin, or filler injections, and laser treatments are added. This procedure has also some serious side effects including infections, skin dimpling, chronic inflammatory reaction, and thread extrusion as high as 20% in some studies.[30-32] For these reasons; we should not use thread lift for facial rejuvenation in this coronavirus days. When compared to the other aesthetic dermatology procedures, it still stays as a minimally invasive method.

4.2.8 | Other procedures

Almost all types of high intensity focused ultrasound, fractional radiofrequency, and cryolipolysis devices have stainless steel, gold, or plastic handpieces and probes. This condition brings viral contamination risks, and then, we have to cancel all these contact-based device treatments. We should also postpone all nonurgent dermatologic surgery procedures such as biopsy, electrocauterization, cryotherapy, and nail matricectomy during coronavirus days.[2] But we can continue excisional biopsy for skin neoplasms and also chemical matricectomies for serious ingrown nails.

5 | DISCUSSION

After COVID-19 pandemic, we minimized all nonessential outpatient appointments and we accept serious and emergent cases now. We are trying to use telemedicine, whatsapp, e mail, or phone for simple skin issues during coronavirus days. We can propose that chemical peeling, botulinum toxin injections, lighter fillers, PRP, mesotherapy for alopecia with lower viral infection risks during coronavirus days. During the coronavirus-19 pandemic, our patients may experience stress, anxiety, fear, sadness, and loneliness. Mental health disorders such as anxiety and depression can worsen. As a dermatologist, we can use safer aesthetic dermatology procedures to prevent these mental disorders in coronavirus days after strict preventive approaches.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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