Modified mask for aesthetic procedures on face during COVID-19 era: Chiseling our armamentarium

Dear Editor,

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is a highly contagious enveloped RNA virus, which has infected more than 4.9 million across the globe. As the world has been captivated by the spread of corona virus, aesthetics and procedural dermatology has taken a seat back. The dropout in consultations is between 80% and 90% in both public and private practices. The halt to procedures is not only due to rational fear in minds of both patients and doctors but also due to lack of guidelines and methods to overcome the hurdles faced while conducting the procedures.

SARS-CoV-2 spreads via respiratory droplet transmission or contact transmission. The viral particles present inside the droplet nuclei can survive for longer periods over inanimate surfaces and can travel longer distances to transmit the infection. The existence of corona virus will become an integral part of all our decisions in future in our dermatology practice. Dermatologic surgeon/aesthetician must be prepared to learn and adapt to the changing paradigm of the dermatology practice.

The risk involved in viral transmission during procedures depends on the following factors:

**FIGURE 1** Method of making modified mask: A. Points are marked over the mask; B. join the points and cut keeping a gap of 1 cm from the points; C. double-sided tape is applied on the edges; D. mask after modification providing enough area to carry out procedure.
Level of protection of the patient
Level of protection of the treating dermatologist
Type of procedure—aerosol-generating procedures are considered to be of high risk
Duration of procedures
Use of smoke evacuator for aerosol-generating procedures
Ventilation of the room

One plausible issue we faced in our practice amidst SARS-CoV-2 was procedures over face, as it poses a higher chance of transmission due to close proximity to the upper respiratory tract. Hence, it is mandatory for the patient as well as doctor to wear a mask. But the current masks (N95/surgical mask) available reduces the accessible area for the procedures. So, we modified the mask to cover only the nose, upper lip, and lips without compromising the protection/barrier as well as provide a significant area to perform procedures.

The methodology is as follows:
First, the patient was asked to wear the mask and to look straight with eyes at the same level.

- First point corresponds to upper edge of the mask in line with medial pupillary line symmetrical on both the sides.
- Second point was marked on the outer edge of nasolabial fold at level of lower border of nasal alae.
- Third point—1 cm lateral to angle of mouth on both the sides
- Fourth point—1 cm below mentolabial sulcus

After ensuring that points on both sides are symmetrically placed, points were joined using a ruler and cut at least leaving a margin of...
1 cm from the marked lines. Next, a double-edged sticking tape (3 M) was used to seal the edges for all sides except for upper edge where nose clip provides adequate support and seal (Figure 1).

We experimented using both surgical (3-ply face mask) and N95 mask (Figure 2) and used it for procedures including chemical peel, microdermabrasion, and laser. Figure 3 shows image of the patient wearing the modified mask for laser procedure over face. In Table 1, pros and cons of using surgical mask, N95, and modified mask are listed.

Based on the World Health Organization (WHO) modeling, to meet rising global demand, WHO estimates that industry must increase manufacturing by 40%. N95 masks are recommended for suspected/confirmed cases of COVID-19 and for healthcare workers who are being exposed to such patients. In view of worldwide scarcity of Personal protective equipment resources, we urge people to use surgical mask as compared to N95 for this purpose. Limitation of this method is procedures over upper lip cannot be performed.

In future, patient’s preprocedural photographs can be taken and analyzed on the computer to mark exact points of measurements. If facility available, 3D printer can be used to print individualized, well-fitting mask for each patient.

In conclusion, the modified mask might serve as a useful tool in future to reinitiate aesthetic procedures over face during/after COVID-19 pandemic if used along with essential protective measures required as per the procedure being performed.

Malcom Noronha
Anuradha Jindal
Venkataram Mysore

Venkat Center for Skin and Plastic Surgery, Bengaluru, Karnataka, India

Correspondence
Anuradha Jindal, Venkat Center for Skin, #3437, 1st G Cross Rd, Subbanna Garden, Vijayanagar, Bengaluru, Karnataka, 560040, India.
Email: dr.anu17@gmail.com

ORCID
Anuradha Jindal https://orcid.org/0000-0003-2009-3593

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FIGURE 3  Laser procedure being carried out for the face using the modified mask. Protective measures worn by doctor include double gloves, gown, N-95 mask with surgical 3-ply mask with face shield and eye protection. Smoke evacuator nozzle was kept within 30 cm of area being treated with good ventilation in the room.

TABLE 1  Advantages and disadvantages of modified surgical mask compared to N95 mask

| Type of mask       | Pros                                                                 | Cons                                                                 |
|--------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| Surgical/3-ply mask| • Easier availability as compared to N95                           | • Few studies have shown that N95 mask is more effective in preventing influenza infections than surgical mask. But again it is a controversial subject with many studies reporting almost equal efficacy of both surgical and N95 mask.7,8,9 |
|                    | • Lesser logistics and expenditure hence more suitable for routine procedures |                                                                      |
|                    | • Suitable for longer duration procedure as it is reported to cause lesser subjective discomfort, lower perception of humidity and heat and less breathe resistance than N-95.7 |                                                                      |
| N95 mask           | Provides better particulate filtration as compared to other masks (few studies have shown better efficacy than surgical masks) | Expensive Difficult to acquire due to worldwide crisis               |
| Modified mask      | Provides better exposed area on face to perform procedure If sealed properly can be used for longer procedures as well Easy to modify, can be done in clinic within 3 to 5 minutes (not time consuming) | Procedures on upper lip cannot be performed                          |
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