

SPECIAL COMMUNICATION: COVID-19

Recovery of Elective Facial Plastic Surgery in the Post-Coronavirus Disease 2019 Era: Recommendations from the European Academy of Facial Plastic Surgery Task Force

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Abstract

The impact of the COVID-19 pandemic has resulted in widespread disruption to routine surgical services across the globe. As the peak of the initial pandemic passes, surgeons will increasingly resume elective work to address the backlog. Whilst urgent cases such as cancer work will be prioritized, the safe resumption of facial plastic surgery will remain an ongoing challenge; particularly if there are secondary waves of infection. Rhinoplasty and nasal reconstructive surgery in particular poses a unique challenge to address due to the potential for aerosolizing the virus. A task force of facial plastic surgeons from the European Academy of Facial Plastic Surgery has collaborated to create this document detailing recommendations for resuming a safe facial plastic surgery practice. These include the need to embrace telemedicine, advice on surgical prioritization, planning of clinical area flow plans, advice on pre-/peri- and postoperative care as well as recommendations on training for residents and well-being for surgeons. The recommendations have been made in line with the best available evidence in the literature and are applicable to facial plastic surgery colleagues from around the world in order to resume a safe practice.

Background

The World Health Organization (WHO) has clearly defined the stages of a pandemic. At present, we are in phases 5 and 6 of coronavirus disease 2019 (COVID-19) where there is widespread human transmission and a global pandemic is underway. When considering the needs of the patient population during the COVID-19 pandemic, facial plastic surgery—perhaps correctly—will not feature heavily as an area for financial and human resource support. With much of our work centered on rhinoplasty and nasal reconstruction, our specialty is at a particular occupational hazard due to the risk of aerosol-generating procedures. Strict measures are in place across much of Europe to focus on emergency work. Nevertheless, as we progress through the peak of the pandemic, ongoing

and fluid considerations will need to be made on how best to recover our already under-represented specialty on a Europe-wide basis.

Aims of the Document

A European task force of leading facial plastic reconstructive surgeons has been convened to make recommendations for resuming elective work, particularly for rhinoplasty surgery. Various factors have been considered in order to resume a safe elective service, with input from multiple surgeons in a variety of public and private health systems. Clearly, recommencement of any activity will depend on individual country recommendations, but this document hopes to provide facial plastic colleagues with some guidance during the initial recovery phase.

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Strategic Considerations

Telemedicine

This has been almost universally rolled out across the world following recommendations on social distancing and is feasible with the availability of high-speed Internet and smart phones to much of Europe. Virus droplets from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are transmitted primarily via large droplets spread within a range of approximately 2 m. Telemedicine eliminates risk, and whilst it may not provide the same rapport-building opportunity that human face-to-face interaction permits or an ability to examine the patient comprehensively, there are some advantages, from patient convenience, particularly during a period of convalescence post surgery, to an ability to transfer images seamlessly between surgeon and patient. Even in the post-COVID-19 era, we envisage that telemedicine will have an invaluable role in the facial plastic surgeon's practice.

Surgical prioritization

A significant backlog of facial plastic surgical work has been created from the effects of the pandemic. Various different world bodies have outlined their plans for surgical prioritization, including the Royal Colleges of England, Edinburgh, Glasgow and Ireland, the Royal Australasian College of Surgeons, and the American College of Surgeons. Broadly speaking, much facial plastic work, excluding advanced, aggressive, or skin cancers in anatomically sensitive areas, is deemed to be of low priority. The onus is on individual surgeons to risk stratify their own waiting list and triage the most urgent cases. Other factors to assess when stratifying patients will be individual patient comorbidities. Until there is effective herd immunity, a vaccine, and/or definitive antibody testing, patients with multiple comorbidities or those at high risk of intraoperative complications will need to be judiciously listed for surgery. If there is no harm to the patient by delaying surgery even further, we strongly recommend taking a conservative approach and considering all nonsurgical alternatives instead. Where possible, patients should limit their hospital encounters for the foreseeable future, and day-case procedures should be favored over inpatient stays, particularly in resource-limited departments. Where infrastructure exists already, for example through dedicated procedure rooms, we strongly recommend the use of local-anesthetic surgery in appropriate cases. This will offset inpatient hospital capacity and enable patients to be treated sooner, but the same level of personal and protective equipment (PPE) should still be worn as in a general anesthetic setting.

Prior to listing patients for surgery, it is worth emphasizing that the body of evidence for surgery in the

COVID-19 area is still evolving, and patients must be counselled on the risks of undergoing surgery in hospital versus any potential benefits, particularly for any purely aesthetic interventions.

Waiting areas

When considering resuming face-to-face consultations, should the current rules on social distancing remain in place, we recommend reviewing patient flow plans for your clinic. Patients should fill in a questionnaire about COVID-19 symptoms before being seen (Fig. 1). A minimum of 2 m must be in place between patients in the waiting area, with strict limits on the number of people waiting. In the initial phase, we do not advocate having family members or partners present during a face-to-face consultation, and we suggest a secondary video consultation. Hand sanitizers and hand-washing facilities should be readily available to all patients and clinic staff, and all patients must undergo temperature testing as a minimum before gaining access to waiting areas. Recommendations on simple face masks will vary between countries and institutions but we do advocate the use of simple surgical face masks to reduce further the chances of droplet spread and contamination of surfaces.

Clinical examination

This will remain an area of concern for many of our surgeons due to the risk of aerosolization of the virus and the increased viral load in the nose. Where possible, we do not recommend any internal or endoscopic examination of the nose unless absolutely necessary. Should endoscopic examination be necessary, an endoscope connected to a video stack via a cable will increase the distance between the surgeon and patient, thereby limiting exposure. It should be carried out in a separate examination suite, and the surgeon should wear a surgical gown, FFP3/N95 mask, and visor, and be double gloved as a minimum. Where available, our preference is for cone beam computed tomography (CT) or conventional non-contrast CT scanning of the paranasal sinuses to assess the septum and sinuses. Objective outcome measures such as with peak nasal inspiratory flow, acoustic rhinometry, or rhinomanometry are not recommended.

Preoperative care

The safety of the surgeon, the patient, and all personnel in the operating room is of paramount importance. There have been very well-documented cases of widespread infection of operating-room personnel from nasal surgery. Prior to embarking on surgical intervention, we recommend at least two COVID-19-negative swabs, one of which must be carried out 48 hours prior to the procedure. Patients should be advised to self-isolate for 7 days before the procedure. At the time of writing, both the Royal

EUROPEAN ACADEMY OF FACIAL PLASTIC SURGERY (EAFPS) MODIFIED COVID-19 ASSESSMENT TOOL PRELIMINARY INFORMATION			
SURNAME		FIRST NAME	
DOB		HOSPITAL NUMBER	
PATIENT RECORD Have you experienced the following symptoms in the last 14 days?			
MAIN SYMPTOMS			
• Temp >37.5°C	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Cough	Y <input type="checkbox"/>	N <input type="checkbox"/>	
OTHER SYMPTOMS			
• Fatigue	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Throat pain	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Headache	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Muscle pain	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Nasal congestion	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Nausea	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Vomit	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Loss of taste or smell	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Eye symptoms	Y <input type="checkbox"/>	N <input type="checkbox"/>	
• Diarrhoea	Y <input type="checkbox"/>	N <input type="checkbox"/>	
EPIDEMIOLOGICAL FEATURES			
EXPOSURE TO PATIENTS WITH CONFIRMED COVID 19 (positive swab)	Y <input type="checkbox"/>	N <input type="checkbox"/>	
EXPOSURE TO PATIENTS WITH SUSPECTED COVID 19	Y <input type="checkbox"/>	N <input type="checkbox"/>	
COHABITANTS WITH TEMPERATURE OR FLU (no swab)	Y <input type="checkbox"/>	N <input type="checkbox"/>	
OTHER CONTACTS WITH TEMPERATURE OR FLU (no swab)	Y <input type="checkbox"/>	N <input type="checkbox"/>	
CONTACTS WITH HEALTHCARE PROFESSIONALS	Y <input type="checkbox"/>	N <input type="checkbox"/>	
ACTIVE WORK	Y <input type="checkbox"/>	N <input type="checkbox"/>	
If yes <input type="checkbox"/> REMOTE WORKING <input type="checkbox"/> WITH OTHER PEOPLE <div style="margin-left: 150px;"> <input type="checkbox"/> WITH PPE <input type="checkbox"/> WITHOUT PPE </div>			
What type of work? Please specify.....			
Any foreign or local travel in the last 40 days?			
	Y <input type="checkbox"/>	N <input type="checkbox"/>	
Please specify.....			
<input type="checkbox"/> I hereby declare under that the information provided above are true and correct to the best of my knowledge and belief <input type="checkbox"/> I hereby give my consent for my data to be held in my medical records in line with GDPR 2018			
Signature.....		Date.....	

Modified from the Italian societies of medical esthetics

Fig. 1. The European Academy of Facial Plastic Surgery (EAFPS) modified coronavirus disease 2019 assessment tool.

College of Radiologists¹ and the American College of Radiology² do not recommend routine preoperative CT chest imaging, due to the low pickup rate and 20% false-negative rate. In high-risk patients, particularly those with underlying pulmonary comorbidities, we recommend close collaboration with the anesthesiologist to consider further chest imaging.

Intraoperative care

This remains an area for controversy and will depend on the resources available to individuals. Surgery should be conducted in as sterile a fashion as possible, with a limit to the number of personnel in the operating room. At a minimum, all staff in the operating room should wear a fluid-resistant surgical gown, FFP3/N95 mask, visor, and two sets of surgical gloves. However, surgical procedures involving the nose and oral cavity are deemed to be high risk due to the high virus concentration in these areas.³ Procedures that potentially aerosolize the virus may cause the virus to remain in the air for 3 hours or longer.⁴ There is evidence from northern Italy and Wuhan to show that N95 or FFP3 masks may not be sufficient to protect operating-room personnel, with data suggesting the benefits of powered air-purifying respirators (PAPR). The assigned protection factor range is 25–1,000 for PAPR and 10 for N95 masks.⁵ Where available we do recommend PAPR for all rhinoplasty and nasal surgery. The Piezotome and other powered instruments that may aerosolize the virus are not recommended. If decongestion of the nose is necessary, we advocate using pledgets rather than atomizer sprays. An experienced anesthesiologist is needed to consider paralysis and to ensure deep extubation to prevent coughing.

A note should also be made on the use of povidone-iodine (PVP-I). According to several studies,^{6,7} PVP-I disinfectant has better antiviral activity than other antiseptics and has been effective against severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses in *in vitro* studies.⁶ A protocol has been recommended to apply PVP-I to the nasal and oral mucosal surfaces to both patients and health-care workers coming into contact with patients with likely COVID-19. The recommended regime is as follows:

- 0.28–0.3 mL of 0.5% PVP-I solution applied to each nostril with an atomizer to all patients and health-care workers;
- 9 mL of 0.5% PVP-I introduced into the oral cavity and used as a mouthwash in all patients and health-care workers;
- 2 mL of 0.5% PVP-I applied topically to the patient's oral cavity and oropharynx with the patient anesthetized.

Ramezanzpur et al. (2020) recently demonstrated its safety *in vitro* on primary human nasal epithelial cells with no demonstrable toxicity or adverse effects on ciliary beat function.⁸ Although its effects *in vivo* have not been adequately demonstrated in this cohort of patients, as the side-effect profile is low and potential benefits are favorable, we recommend PVP-I as a reasonable adjunct to the PPE measures outlined above in all patients undergoing rhinoplasty surgery.

A Phase II clinical trial is also underway to look at the efficacy of tranexamic acid on COVID-19.⁹ Early data from the United States have suggested that endogenous protease plasmin acts on COVID-19 virus by cleaving a newly inserted furin site in the S protein portion of the virus, resulting in increased infectivity and virulence.¹⁰ Intravenous tranexamic acid, commonly used as a hemostatic agent in rhinoplasty surgery, may suppress this conversion and could be repurposed for the treatment of COVID-19.⁹

Postoperative care

Limiting face-to-face interaction with patients will remain a challenge in the immediate postoperative period. Where possible, the use of intranasal splints should be avoided. External plaster of Paris casts (or similar) for rhinoplasty should be carefully considered. We would suggest a bespoke approach for individual patients in order to weigh up the risks of nasal bony pyramidal malposition versus further potential virus exposure by attending the outpatient clinic or hospital. Ideally, the simplest type of external splinting available should be used (such as plaster of Paris or thermoplastic material) and patients taught how to remove external splints themselves. For all surgery to the head, neck, and face, consider using absorbable suture materials and unsutured superficial dressings, for example to the ear in pinna-plasty surgery. Our recommendation is to reduce the frequency of unnecessary hospital encounters. All routine postoperative care ought to be completed via video consultation.

Residents and fellows

One of the privileges of facial plastic surgery is to train the next generation of enthusiastic residents and fellows. The European Academy of Facial Plastic Surgery (EAFPS) has a long track record of high-level fellowship training, but during the height of the pandemic, unless a surgical assistant is essential to the procedure, it is not advisable to expose observers to potential risks. Additionally, we need to be mindful as a responsible body to conserve PPE resources, particularly in the event of secondary waves of infection. In these times, we suggest embracing technology as a teaching tool. Great strides have already been made in facial plastic surgery

simulation, and adjuncts could include viewing surgery via video link, subject to appropriate patient and departmental consent. Greater use of webinars in the future will prove to be invaluable, and the EAFPS has been leading the way in this regard already during the pandemic.

Well-being

The effects of the pandemic on emotional well-being will be ongoing. It is an area that is often overlooked among surgeons. Across Europe, there has been significant redeployment of staff into unfamiliar roles in intensive care and internal medicine, many of whom include facial plastic surgeons. The impact of dealing with this unfamiliarity will have an impact on their autonomy, belonging, and competence—key to the well-being of any doctor.¹¹ Many surgeons will have directly encountered exceptionally unwell patients with adverse outcomes either personally or professionally, and the effects on their mental health will require support.

Conclusions

The present document illustrates some of the potential challenges in resuming a facial plastic and rhinoplasty practice. Much of the information is still evolving, but based on the available evidence in the literature, we propose a set of principles that will hopefully arm surgeons to resume a safe elective practice.

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