The Effects of a Novel Global Pandemic (COVID-19) on a Plastic Surgery Department

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We are in the midst of a World Health Organization (WHO) declared global viral pandemic, with Europe currently at its center, and the numbers of infected individuals rising each day.¹ As of April 1, 2020, there are over 823,626 confirmed cases worldwide, with over 409,598 deaths attributed to the COVID-19 virus.¹² The implications of this on a global stage are significant, with governments taking strict and even draconian steps to minimize spread at a national level, and hospital departments redistributing resources at a local level. The long-term implications of this for patients and the economy are uncertain; here we discuss our thoughts on the likely impact on our tertiary plastic surgery department in the UK.

COVID-19 is a severe acute respiratory syndrome coronavirus (SARS-CoV-2).³ Originally identified in the city of Wuhan, in the Hubei province of central China, in December 2019, the virus has since spread rapidly across the world, followed by a snowballing amount of media attention. There now appear to be 2 strains of COVID-19: the original S-type and the newer L-type, the latter believed to be more prevalent and therefore more aggressive in its spread.⁴ With an R₀ (reproductive rate; ie, the number of humans likely to be infected as a result of 1 person being infected) of 2 to 2.5,⁵ the virus will continue to spread until social distancing measures are implemented and immunity develops. Routes of transmission are likely to be via droplet and fomites during close, unprotected contact between individuals,⁶ with entry predominantly gained via the nose, mouth, and eyes. This means that without strict protective gear and stringent attention to hand hygiene, doctors and patients are putting each other at great risk of infection, potentially contributing to transmission to the most elderly and infirm patients among whom mortality rates will be higher. Steps must therefore be taken to minimize infection of the most at-risk groups.

On the international stage, we have seen cancellations of large gatherings such as the Geneva Motor Show, the opening races of the Formula 1 Grand Prix season, and US National Basketball Association matches, in the hope of enforcing viral containment and minimizing spread. Countries such as Italy, India, and the United States have enforced sudden and total travel bans. In the United Kingdom, national guidance involves self-isolation for 7 to 14 days if presenting with pyrexia or respiratory symptoms, with advice to not seek medical advice from healthcare professionals unless required.⁶ As of March 14, 2020, 798 cases were confirmed positive in the UK from 32,771 tested, and 21 patients who tested positive have died as a result of COVID-19.⁶ According to the Department of Health coronavirus action plan,⁷ the 4 steps in the overall response are “containment” (prevent spread), “delay” (slow spread), “research,” and “mitigation” (treat infected patients), but a separate statement to “minimise the potential impact on society … including key public services” is also present: what does this mean for plastic surgery departments?
Plastic surgery departments are tertiary centers managing acute infections, trauma, and burns, as well as elective reconstructive procedures and research. It is imperative that the seemingly all-encompassing attention on COVID-19 does not adversely affect the acute response needed to deal with plastic surgery emergencies. Where limb- or life-threatening injuries are present, additional precautions should be taken to minimize COVID-19 propagation in keeping with national guidance on hygiene, but not to the detriment of swift patient assessment and treatment. In our department at the Royal Free Hospital (London, UK), daily trauma lists are ongoing and fully staffed. However, in order to minimize contact between patients and doctors in hospitals, elective clinic patients’ notes are currently reviewed beforehand and telephone consultations made, rather than in person, and elective theater lists are being cancelled. Furthermore, it is possible that doctors and other healthcare professionals may be redistributed to acute medicine, emergency rooms, and intensive care units should these become overrun with patients or suffer severe staff shortages with healthcare professionals self-isolating in keeping with national guidance.

What this inevitably means is that many patients will be having their procedures cancelled. Although this will initially affect those undergoing elective reconstructive procedures, it is possible that those planned for skin cancer procedures will also have them delayed. As health services are put under increasing workforce strain, it is likely that the definition of “elective” will become more blurred. According to the National Audit Office, £16 billion is spent on elective NHS care per year, with waiting lists for elective plastic surgery procedures up to 12 months long. According to the American Society of Plastic Surgeons, almost 6 million reconstructive procedures and almost 2 million cosmetic procedures are carried out each year, and the American Society for Aesthetic Plastic Surgery reported that nearly 3.5 million nonsurgical cosmetic procedures were performed in 2018. Along with the financial cost of cancellations comes a significant psychological burden on patients who have their procedures cancelled, many of which will be reconstructions following cancer or trauma.

The real cause for concern with COVID-19 is the uncertainty that inevitably accompanies a novel disease. We are faced with new information each day, with decisions being made based on models of seasonal flu and the Chinese response. In this dynamic environment, it is imperative to pay attention to the latest evidence-based decisions and be sensible with our decision-making. Although COVID-19 must be given the respect it deserves, this should not be at the expense of long-term patient welfare. Wherever possible, transmission risk should be mitigated, particularly to high-risk groups, but blanket bans on all elective procedures must only be considered with the utmost trepidation. We need clarity on the hierarchy of procedures that can be delayed, and such patients should be counseled by appropriate professionals to minimize the psychological outcomes of these cancellations.

We do not currently have the data to predict whether or not COVID-19 is likely to remain at a baseline level in our communities, or what impact this is likely to have on high-risk patients who require procedures. With information on the virus only available for the past 4 months, it is impossible to predict how it will behave in different seasons, or even the long-term outcomes on those who have been infected. We also have little evidence on the additional risks for patients who undergo general anesthesia and intubation, with its affiliated barotrauma, or how the COVID-19 virus settles in ventilatory machinery and if there is risk to subsequent patients. Sensible decisions must therefore be made on a local level depending on resource availability to minimize overall patient harm. Departments such as plastic surgery will have to prioritize emergency work over elective work, and be prepared to continue with a reduced workforce as members of the team are forced to self-isolate or be redistributed for the benefit of the national population.

The strategies adopted by various countries appears to differ; it seems the majority are focusing on containment and mitigation, whereas the UK government seems content to facilitate a “controlled” rate of infection, thereby leading to earlier herd immunity. However, this is a strategy based on scientific assumption, which is the only real guidance we have at present. It may be prudent to consider stricter measures on social distancing in the hope that delaying spread will protect higher-risk groups until the warmer weather helps lower transmission rates and coinfection with winter pathogens, and of course, until there is an available vaccine. The eventual correct course of action will, however, only be revealed in retrospect.

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