Commentary

Commentary on: Evaluating Postoperative Outcomes of Patients Undergoing Elective Procedures in an Ambulatory Surgery Center During the COVID-19 Pandemic

Aesthetic Surgery Journal
2020, 1–4
Published by Oxford University Press on behalf of The Aesthetic Society 2020. This work is written by (a) US Government employee(s) and is in the public domain in the US.
DOI: 10.1093/asj/sjaa243
www.aestheticsurgeryjournal.com
OXFORD UNIVERSITY PRESS

Brannon Claytor, MD, FACS

Editorial Decision date: August 11, 2020; online publish-ahead-of-print October 23, 2020.

The World Health Organization declared the COVID-19 outbreak a pandemic on March 11, 2020.[1] So began an era of paralyzing fear about how to proceed and interact with interpersonal relationships, business transactions, and, pertinent to this article, surgical treatment. Conflicting results have been published about how this virus has altered safety outcomes for patients.

The contribution by Adams et al[2] to the body of literature on patients undergoing surgery during the pandemic is significant. Outcomes data that demonstrate no adverse postoperative complications following surgery provide a reference point for physicians and politicians who are crafting policies for "best practices" as we forge forward in the face of surging numbers of COVD-19 cases. As our understanding of the virus improves, we will undoubtedly develop more protocols and preventative measures that will not just limit transmission but also improve treatment measures.

A recent *JAMA* article,[3] which studied patients in Italy who were operated on for urgent reasons during approximately the same period that Adams et al collected their data, demonstrated that 43% of patients with a positive polymerase chain reaction (PCR) test for COVID-19 had pulmonary complications postoperatively, whereas only 2.3% patients who tested negative demonstrated similar pulmonary complications. There also appeared to be a trend towards increased postoperative thrombotic complications in patients who had COVID-19 at the time of surgery.

When separating out patients who were COVID-19 free during this period, it appears that their incidence of postoperative complications is consistent with the pre-COVID era. This suggests that appropriate screening can allow elective surgery to be performed safely during this pandemic. For our community of cosmetic aesthetic plastic surgeons, safety has always been the primary concern. Our patients' well-being and health take priority over every other consideration. This is fundamental to the oath we took in medical school: "Primum non nocere"—"First, do no harm."

Prior to the outbreak of COVID-19, our risk assessment before surgery included considerations about our patients' known comorbidities. These included, but were not limited to, any history of smoking, a personal or family history of hypercoagulability, and even a history of diabetes with poorly controlled blood-sugar levels. A thorough history and physical by the operating surgeon to inquire about these possible predictors for increased morbidity or even mortality following surgery are integral to optimizing aesthetic results and even maximizing the patient experience. Inattention to detail by neglecting to inquire about and

Dr Claytor is the Chief of Plastic Surgery, Main Line Health, and a Clinical Associate Professor, Lankenau Institute for Medical Research, Philadelphia, PA.

Corresponding Author:
Dr Brannon Claytor, Claytor/Noone Plastic Surgery, 135 South Bryn Mawr Avenue, Bryn Mawr, PA 190101, USA.
E-mail: drclaytor@cnplasticsurgery.com

address these issues can lead to suboptimal or even disastrous outcomes of myocardial infarction, pneumonia, or venous thromboembolism events. Although unanticipated sequelae can occur due to either unforeseen events or inexplicable wound-healing variations, these are usually infrequent. Any one of these disastrous results causes us to re-examine the entire course of treatment from preoperative assessment to intraoperative surgical technique and postoperative care with the goal of minimizing or hopefully eliminating entirely any such untoward results in the future. However, what we are faced with today is unprecedented. Never before have we had to deal with such an insidious and contagious virus which threatens to undermine the mantle of safety that is the cornerstone of the surgeon-patient relationship.

Many of us trained in the time of the discovery of HIV and AIDS and became comfortable with universal precautions to ensure that we did not get infected and therefore protected subsequent patients. But HIV transmission occurred by contact with blood or saliva: a break in sterile technique was needed for exposure to occur. This new contagion is terrifying in its ability to spread through means that are less obvious, and has brought healthcare systems and economies to their knees. Although the information presented by the authors reflects the accepted practice when they were collecting their data, an evolution of access to testing and in our understanding of the transmission of the virus has shown the threat in a different light. Through personal communications with dozens of the busiest cosmetic aesthetic plastic surgeons across the United States, a silver lining in the data is starting to appear.

Nearly all board-certified plastic surgeons are following the recommendations of their respective societies and screening patients before surgery, as did the authors of the accompanying article. This makes good sense. A patient sick with fever or flu symptoms is not an acceptable risk for surgery. By extrapolation, any predictive indicator of subsequent illness that is available should be utilized before embarking on a surgical procedure.

The exact screening protocol remains a matter of debate: the best-practice "detection protocols" for COVID-19 are still developing in real time. The recommendations published by The Aesthetic Society COVID Task Force on May 5, 2020 strongly encouraged plastic surgeons to perform PCR tests to screen patients before surgery. This was not the standard of care when Adams et al were collecting their data. The authors clearly demonstrated optimal outcomes after screening for symptoms and should be congratulated for contributing these important data to the body of literature related to the COVID-19 pandemic.

Before I went to medical school I worked briefly as a commercial airline pilot. It was grilled into me during my flight training that a "zero incidence of accidents" was the pilot's dogma—no injury to passengers and crew could be tolerated. Everyone who boarded the plane should expect to reach their destination safely. Translate this to medicine and the expectations are the same. Optimally, no individual should suffer or perish from avoidable circumstances or incidents during or after surgery. The COVID-19 pandemic has thrust a new variable into our world of patient care. It is a swirling mix of changing recommendations and scientific understanding about the transmission of the virus and our ability to detect individuals who are contagious. Already we have seen a burst of enthusiasm for antibody tests which offered to confer immediate test results about possible lifetime immunity, only to find out that the Food and Drug Administration (FDA), in a rush to provide any type of information, had granted emergency use authorization to dozens of companies with flawed test capabilities which provided inaccurate and unreliable results. Currently, antibody tests are *not* the standard of care to detect a patient's infectious status for COVID-19. These antibody data are not helpful on an individual level, but do serve as constructive data on a regional or national level to help guide policy decisions.

When Adams et al were collecting their data there was no national consensus about testing preoperatively and furthermore there was limited access to testing. This begs the question: what are the negative implications of operating on a patient who is COVID-19 positive? In July 2020, an article in the *Lancet*[4] offered to shed light on the possible implications of operating on patients with active COVID-19 infections. The data indicated that if the patient was male, over the age of 70, and had an ASA classification of III or more, then there was a statistically significant higher likelihood of mortality with a high incidence of pulmonary complications.

The challenge in the current pandemic is that we have limited experience with how patients who have COVID-19 will fare following the physiologic stress of surgery and the pulmonary changes brought on by general anesthesia. This is why the analysis by Adams et al is so significant as we build a body of literature to help guide us clinically. What this translates to operationally is that screening measures are recommended before patients undergo elective procedures to identify those individuals who are actively contagious.

In my preparation for writing this commentary, I reached out to dozens of busy cosmetic aesthetic plastic surgeons to ascertain their current practices. My findings revealed that all board-certified plastic surgeons are currently screening patients for symptoms of illness. These include, but are not limited to, fever (>100.0°F), dyspnea, cough or other respiratory symptoms, shortness of breath, muscle aches/pain, gastrointestinal symptoms (nausea, vomiting, diarrhea), loss of taste or smell, chills/repeated shaking

with chills, extreme fatigue, blue discoloration/blisters of toes, confused, dizzy, falls, mental status changes.

In addition to this, a *hard stop* exists in many hospitals and surgery centers when a patient has a positive PCR test for COVID-19. Although this is not universal across the country, I found that most surgeons are utilizing these recommendations from The Aesthetic Society COVID Task Force. Of course, there is variability in access to the various types of tests. Some institutions have their own 1-hour turnaround results, but most send their samples to Quest or Lab Corp facilities, which have a 3- to 5-day turnaround time for results. The added burden to the healthcare system as more universal testing is being implemented for sporting events and areas of outbreaks is putting a strain on access to testing, in some places leading to prolonged delays before test results can be returned. This means that the patients need to agree to quarantine leading up to their tests and following sample collection for PCR testing.

Although the attractiveness of rapid-detection antibody tests is understandable, they are generally regarded as unreliable in their ability to identify and eliminate the risk of a potentially asymptomatic contagious patient. The reputation of antibody tests reached a low point when the FDA issued emergency use authorization for hundreds of antibody tests at the height of the pandemic. The FDA's intention was good, but the actual result was chaos. Many companies openly reported that they had cross-reactivity with common flu viruses (HKU1, 229E, NL63, OC43). Therefore, test results that came back as positive could not truly indicate whether patients had COVID-19 or a common flu virus. The implications are understandably injurious as individuals tried to assess their own levels of risk. Furthermore, it takes upwards of 2 weeks for antibodies to the virus to form and thus a negative test does not remove the possibility that a patient is infected and contagious, albeit asymptomatic.

Therefore, all of the noise about IgG and IgM, immunity passports, and lifetime immunity is just that—noise. At this time the main effectiveness of antibody testing is to help public health officials better understand the penetration of the virus into a community, but it has no real effectiveness as a screening tool for patients who are headed to the operating room. With the continued evolution of antibody testing selectivity and increased penetration of the virus into all communities, different standards may apply in the future. But not now.

The impending second wave of cases casts an uncertain future for elective surgical procedures in the face of potential shelter-in-place orders. Although these seemed effective during the first wave, other than Adams et al, there are no published data on the actual outcomes of implementing this public policy. Following the end of the surgical moratorium, data collected from personal communication with dozens of plastic surgeons across the country have demonstrated that *none* of these surgeons, or their staff members, became infected from exposure to a patient during this period. The cosmetic aesthetic plastic surgeons surveyed represent over 1000 surgical patients who successfully underwent surgery with no reported deaths, or unanticipated hospital admissions. Notably this includes the ICU facilities which are so necessary to care for COVID-19 patients. To further clarify, no resources were diverted from a COVID-19 patient to care for elective postsurgical patients.

Furthermore, most surgeons did *not* use N95 masks in surgery or in clinic. There were a few isolated surgeons who felt that their particular health profile put them at a higher risk and thus wore either PAPR or N95 masks during surgery. Again, although several surgeons did contract COVID-19 back in March before the pandemic led to the shutdown of conferences and travel, none had reported contracting the virus since the end of the moratorium in their respective states.

Kaye et al[5] offer a protocol for screening which includes a serology test and a PCR test. Although the PCR test has been universally endorsed by both the American Society of Plastic Surgeons and The Aesthetic Society, the efficacy of the serology tests is still being studied and at this time should be regarded as more beneficial to epidemiologists for assessing the penetration of the virus into a community. With access to testing continuing to be a challenge, it would be more prudent to consider the patient as "under investigation" during their preoperative evaluation by screening them for cough, fever, and shortness of breath, and the multitude of other classic symptoms, in place of the serology test, and then quarantine the patient leading up to the surgery with a PCR testing time period of 3 to 5 days prior to surgery to ensure that they are not contagious as they enter the operating room.

From my survey of a select group of cosmetic aesthetic plastic surgeons, I found that all surgeons screened their patients for symptoms. Of those patients who proceeded to PCR testing, a total of 7 tested positive. In other words, 7 asymptomatic patients were stopped before proceeding to the operating room; 7 out of 1,000 patients or a 0.7% incidence of asymptomatic COVID-positive patients. This indicates the benefits of testing asymptomatic patients before surgery. Had they not been tested and proceeded to the operating room, it is possible that the entire surgical team could have become infected and thus passed this along to subsequent patients. This would have been catastrophic. But it did not happen. Screening worked.

The timely recommendations from The Aesthetic Society COVID Task Force have provided strong guidance for surgeons, hospitals, and surgery centers. These

guidelines have helped to keep patients, medical support staff, and surgeons safe. As we collectively look for solutions to this pandemic, elective surgery may very well be contributing to the containment of COVID-19 through preoperative screening and quarantining of asymptomatic patients.

Acknowledgments

I thank the following surgeons who provide the details of their screening practices: Mark Albert, New York City, NY; Russell Babbitt, Fall River, MA; Louis Bucky, Philadelphia, PA; Steve Camp, Fort Worth, TX; Camille Cash, Houston, TX; Karan Chopra, Twin Cities, MN; Steve Dayan, Chicago, IL; Dino Elyassania, San Francisco, CA; Julius Few, Chicago, IL; Johnny Franco, Austin, TX; Jim Grotting, Birmingham, AL; Joe Gryskiewicz, Twin Cities, MN; John Kim, Chicago, IL; Richard Montilla, Worcester, MA; Otto Placik, Chicago, IL; Aviva Preminger, New York, NY; Jose Rodriguez, Miami, FL; Dave Sieber, San Francisco, CA; John Smoot, San Diego, CA; Kevin Tehrani, Long Island, NY; Marissa Tenenbaum, St Louis, MO, phone calls, 2020.

Disclosures

Dr Claytor is a stock owner in Allergan and received research funding from Alastin and Bellus Medical. He is also the owner of The AdipoAntibody Foundation Inc, a 501(c)(3) company, investigating the capacity of human adipose-derived stem cells to produce antibodies.

Funding

The author received no financial support for the research, authorship, and publication of this article.

REFERENCES

1. WHO. *WHO announces COVID-19 outbreak a pandemic*. March 12, 2020. http://www.euro.who.int/en/health-topics/healthemergencies/coronavirus-covid-19/news/news/2020/3/whoannounces-covid-19-outbreak-a-pandemic. Accessed April 19, 2020.
2. Couto RA, Wiener TC, Adams WP. Evaluating postoperative outcomes of patients undergoing elective procedures in an ambulatory surgery center during the COVID-19 pandemic. *Aesthet Surg J*. 2020;sjaa180. doi:10.1093/asj/sjaa180. [Epub ahead of print]
3. Doglietto F, Vezzoli M, Gheza F, et al. Factors associated with surgical mortality and complications among patients with and without coronavirus disease 2019 (COVID-19) in Italy. *JAMA Surg*. 2020;155(8):1-14.
4. COVIDSurg Collaborative. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. *Lancet*. 2020;396(10243):27-38.
5. Kaye K, Paprottka F, Escudero R, et al. Elective, non-urgent procedures and aesthetic surgery in the wake of SARS-COVID-19: considerations regarding safety, feasibility and impact on clinical management. *Aesthetic Plast Surg*. 2020;44(3):1014-1042.