oxygenation had been provided, reinforcing the idea that early referral and treatment of complications is advantageous for patients. In our opinion, this is the real key point of the article: as the authors show, thoracic surgery is feasible for patients with COVID-19 and selected complications, but correct timing is mandatory. These patients are usually in poor general condition because of a prolonged COVID-19 course; therefore, at the onset of any complications potentially requiring surgery, this should be promptly considered without further delay owing to the potential infective risk, especially given the authors' demonstration

of very limited risk with correct use of protective personal equipment.

References

1. Scarci M, Raveglia F. Commentary: the double responsibility of the thoracic surgeon at the time of the pandemic: a perspective from the North of Italy. *J Thorac Cardiovasc Surg.* 2020;160:595-6.
2. Peng S, Huang L, Zhao B, Zhou S, Braithwaite I, Zhang N, et al. Clinical course of coronavirus disease 2019 in 11 patients after thoracic surgery and challenges in diagnosis. *J Thorac Cardiovasc Surg.* 2020;160:585-92.e2.
3. Chang SH, Chen D, Paone D, Geraci TC, Scheinerman J, Bizakis C, et al. Thoracic surgery outcomes for patients with Coronavirus Disease 2019. *J Thorac Cardiovasc Surg.* 2021;162:1654-64.

See Article page 1654.

Check for updates

Commentary: Coronavirus disease 2019 (COVID-19) and the thoracic surgeon: Choose wisely and preserve good judgment

Richard Lazzaro, MD, FACS, Byron Patton, MD, and Matthew L. Inra, MD

Richard Lazzaro, MD, FACS, Byron Patton, MD, and Matthew L. Inra, MD

CENTRAL MESSAGE

Sound surgical judgment, patient selection, and operative technique are imperative to operate safely on patients with COVID-19.

Since January 20, 2020, when the first patient in the United States was diagnosed with coronavirus disease 2019 (COVID-19), the United States and health care providers have treated, protected themselves from, adapted to, and learned from the virus that has caused the most significant pandemic of our generation. The pathophysiology of COVID-19 infection and its sequelae has not only required the expertise of internal medicine specialists, but all specialists.

The experience presented by Chang and colleagues¹ describes surgical outcomes of a selected group of patients who had developed complications requiring thoracic surgery. The authors are to be lauded for their work operating,

healing, and protecting the team. The authors have made an important contribution to the literature, having demonstrated that thoracic surgery can be performed safely on patients positive for COVID-19. We must also remember to stringently assess the risks and benefits of surgery. Some "patients were in progressive respiratory distress that would have resulted in death without surgical intervention,"¹ but did surgical intervention hasten this inevitable outcome? Not all "Hail Mary" passes travel 48 yards with 6 seconds left and result in victory. Predetermining futility is difficult; the decision to proceed with surgery is associated with high stakes, strong emotions, and sometimes opposing opinions² that can influence the decision-making process.

As COVID-19 continues to surge, along with viral mutations compounded by limitations in vaccine supply, and while vaccine distribution has been associated with inefficiencies, real or perceived, in the absence of a specific

From the Department of Cardiothoracic Surgery, Lenox Hill Hospital, New York, NY. Disclosures: The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication Jan 25, 2021; revisions received Jan 25, 2021; accepted for publication Jan 26, 2021; available ahead of print Feb 2, 2021.

Address for reprints: Richard Lazzaro, MD, FACS, Department of Cardiothoracic Surgery, Lenox Hill Hospital, 130 E 77th St, New York, NY 10075 (E-mail: rlazzaro@northwell.edu).

J Thorac Cardiovasc Surg 2021;162:1666-7

0022-5223/\$36.00

Copyright © 2021 by The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2021.01.109>

treatment for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, thoracic surgeons must anticipate that they will be called upon more frequently to evaluate and manage complications of disease and/or disease management, which will ultimately lead to an objective indication for surgery, which can be performed safely. The surgeon must evaluate each patient and assess indications for surgery, the risks and benefits of such intervention, while balanced against alternative treatment strategies.

As Shakespeare said in *Hamlet*; “there is nothing either good or bad but thinking makes it so.”³ Additional caveats exist regarding management of these patients and include viral load, aerosol-generating procedures, as well as optimization of personal protective equipment for the entire team to mitigate further transmission of SARS-CoV-2 to health care providers as well as patients with whom we interact who have not been exposed to SARS-CoV-2 and to our families and community.

We wish to share a quote from John Whitehorn, who was describing the residency program developed by Dr Edward Churchill, “Frightened and over-anxious awareness of

uncertainty is of little use, for it hinders the operation of good judgement.”⁴ Extrapolating from this, we recognize that the uncertainties of SARS-CoV-2 virus, and evolution of the disease can be addressed with the following principles to preserve good judgment:

- (1) As the Grail Knight once said to Indiana Jones, “Choose (your patients) wisely.”⁵
- (2) Personal protective equipment *works*.
- (3) Take all precautions to contain the virus while doing what is best for the patient.
- (4) Stay safe and protect yourself and your staff.

References

1. Chang SH, Chen D, Paone D, Geraci TC, Scheinerman J, Bizakis C, et al. Thoracic surgery outcomes for patients with Coronavirus Disease 2019. *J Thorac Cardiovasc Surg*. 2021;162:1654-64.
2. Patterson K. *Crucial Conversations: Tools for Talking When Stakes Are High*. New York: McGraw-Hill; 2012.
3. Shakespeare W. *The Tragedy of Hamlet, Prince of Denmark*. New Folger's ed. New York: Washington Square Press/Pocket Books; 1992.
4. Urschel HC Jr. Life is short and the art long, the occasion instant, the experiment perilous, the decision difficult. *Ann Thorac Surg*. 1984;38:1-14.
5. Spielberg S. *Indiana Jones and the Last Crusade*. Los Angeles: Paramount Pictures; 1989.