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Antonio Manenti, MD

Department of Surgery University of Modena Polyclinic-Hospital v. Pozzo 41124, Modena, Italy email: antonio.manenti@unimore.it

Luca Roncati, MD

Department of Pathology University of Modena Modena, Italy

Gianrocco Manco, MD

Department of Surgery University of Modena Modena, Italy

REFERENCES

1. Fukuhara S, Rosati CM, El-Dalati S. Acute type A aortic dissection during the COVID-19 outbreak. *Ann Thorac Surg.* 2020;110:e405-e407.

 Giacinto O, Satriano U, Nenna A, et al. Inflammatory response and endothelial dysfunction following cardiopulmonary bypass: pathophysiology and pharmacological targets. *Recent Pat Inflamm Allergy Drug Discov*. 2019;13:158-173.

3. Varga Z, Flammer AJ, Steiger P, et al. Endothelial cell infection and endotheliitis in COVID-19. *Lancet*. 2020;395:1417-1418.

4. Roncati L, Ligabue G, Fabbiani L, et al. Type 3 hypersensitivity in COVID-19 vasculitis. *Clin Immunol.* 2020;217:108487.

5. Roncati L, Ligabue G, Nasillo V, et al. A proof of evidence supporting abnormal immunothrombosis in severe COVID-19: naked megakaryocyte nuclei increase in the bone marrow and lungs of critically ill patients. *Platelets.* 2020;31:1085-1089.

COVID-19 and Aortic Dissections: Collaboration (Among Disciplines and Centers) Is Key

REPLY TO THE EDITOR: We thank Manenti and colleagues¹ for their insightful comments concerning the pathophysiology, in particular, the immune dysregulation and vascular inflammation, of coronavirus disease 2019 (COVID-19) and its implications for the management of patients with concomitant cardiac surgical emergencies, such as an acute type A aortic dissection (ATAAD).

Our understanding of COVID-19, a complex and multiform disease process, is still incomplete but rapidly evolving. Since our report² in April of a patient with both ATAAD and COVID-19 and an unfortunate dismal outcome, we know that cardiac surgery centers worldwide have faced the similar challenge of choosing and delivering the "best" treatment strategy for patients with a combination of these two deadly diseases.

In examining our experience at the University of Michigan and the experiences of those of Wuhan and Changsha (China), we found that some patients with both ATAAD and COVID-19 can still survive and recover with operative management.³ Similarly, our colleagues from Yale⁴ and Ghent (Belgium)⁵ showed that operative management of ATAAD in COVID-19 patients can be successful. These collective outcomes have made us hopeful that our persistent efforts to learn about and adapt to the current pandemic will help ensure the well-being of our patients.

It is important to recognize that strategies addressing the notable increased risk of proinflammatory features associated with cardiopulmonary bypass in COVID-19 patients undergoing cardiac surgery, as described by Dr Manenti, have been proposed, primarily attempting to mitigate the adverse effects of hypercoagulability and hyperinflammation. As a result of the current limited clinical data regarding the optimization of such strategies, collective sharing of information will be more crucial than ever. There is no doubt that this pandemic has imposed a heavy toll around the world. We hope that with continued scientific investigations and sound public health policies, it will be under control soon. We strongly believe that collaboration among centers and different specialties is key to achieving this goal.

Carlo Maria Rosati, MD Chan Tran N. Nguyen, BA Shinichi Fukuhara, MD

Department of Cardiac Surgery University of Michigan 1500 E Medical Center Dr Ann Arbor, MI 48109 email: fukuhara@med.umich.edu

REFERENCES

- 1. Manenti A, Roncati L, Manco G. COVID-19 disease and cardiac surgery: reciprocal interrelations (letter). *Ann Thorac Surg.* 2021;112:682-683.
- 2. Fukuhara S, Rosati CM, El-Dalati S. Acute type A aortic dissection during the COVID-19 outbreak. *Ann Thorac Surg.* 2020;110:e405-e407.
- **3.** Fukuhara S, Tang H, Kim KM, et al. Type A aortic dissection during COVID-19 pandemic: report from tertiary aortic centers in the United States and China. *Semin Thorac Cardiovasc Surg.* 2021;33:303-312.
- 4. Mori M, Geirsson A, Vallabhajosyula P, Assi R. Surgical management of thoracic aortic emergency with pre-and postoperative COVID-19 disease. *J Card Surg.* 2020;35:2832-2834.
- 5. Martens T, Vande Weygaerde Y, et al. Acute type A aortic dissection complicated by COVID-19 infection. *Ann Thorac Surg.* 2020;110:e421-e423.

The Risk of Reintervention of the Trifecta Bioprosthesis



TO THE EDITOR: We read with great interest the article by Lam and colleagues¹ addressing the rate of reintervention especially due to structural valve degeneration (SVD) of 3 different bioprostheses, the Carpentier-Edwards Magna Ease (Edwards Lifesciences, Irvine, CA), Trifecta (St Jude Medical, St Paul, MN), and Mitroflow (LivaNova, London, United Kingdom),