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STROKE AFTER TYPE A AORTIC DISSECTION

REPAIR: CAN WE DO BETTER?

To the Editor:

We thank Hawkins and colleagues¹ for their commentary “Stroke After Type A Aortic Dissection Repair—A Web of Risk With No Single Answer” regarding our recently published article,² in which we sought to examine the incidence and factors associated with acute stroke after type A repair. Undoubtedly, stroke is a common and deadly complication after type A repair, and yet limited effort has been done to prevent this morbid complication. It is worth mentioning that Hawkins and colleagues³ have shown that the rate of stroke after type A repair has not changed in the last 2 decades (>10% since 2003).

In our analysis, we examined a robust cohort of patients with acute type A aortic dissection from the Society of Thoracic Surgeons Adult Cardiac Surgery Database and found that stroke is a common complication after type A repair (13%). Multivariable analyses found that overall axillary cannulation and retrograde cerebral perfusion were associated with a reduced risk for postoperative stroke. We also found that the degree of hypothermia did not matter and that total arch compared with hemi-arch was associated with higher postoperative stroke risk regardless of the tear location (tear in ascending or arch). We included all 5 of the primary variables of interest (cannulation technique, cerebral perfusion technique, hypothermic management, hemiarch vs total arch, and hospital type A annual volume) in one study to present a comprehensive article with all the necessary information for the reader in a single cohort.

We agree with Hawkins and colleagues¹ that the interconnected nature of the primary variables of interest is important to address. First, it was essential for us to understand the unique contribution of each variable of interest independent of the others, and the primary multivariable model accomplishes this aim. Second, when

evaluating interaction effects in the primary multivariable model, there were none that were notable, and it can be challenging to test and interpret higher-level interactions. However, it was important to undertake other methods that would highlight the interplay between factors. For this purpose, we developed Table E1 as a descriptive presentation of the stroke incidence by various combinations of factors. None of the relationships in Table E1 were examined with comparative analyses, but this information may be useful as a hypothesis-generating effort to reveal patterns in the data. In addition, secondary multivariable analyses were conducted separately for each cerebral perfusion group, which revealed some notable findings that were presented in the “Results” section of our article. It should be noted that statistical power is reduced when splitting the full cohort for these separate analyses, so it remains unclear if nonsignificant findings are accurate or the result of not achieving a large enough sample size to detect the effect. Therefore, the results presented in Table E2 require further investigation and validation.

Given the complex nature of decision making for type A repair techniques, we agree with Hawkins and colleagues¹ that repair strategy should be individualized to the patient on the basis of a number of factors. One point that is clear is that given the growing body of evidence,^{2,4} the axillary artery, whenever feasible, should be considered as the first choice for arterial cannulation site for stable patients undergoing acute type A repair.

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References

1. Hawkins RB, Mehaffey JH, Kern JA. Stroke after type A aortic dissection repair—a web of risk with no single answer. *J Thorac Cardiovasc Surg.* July 16, 2019 [Epub ahead of print].
2. Ghoreishi M, Sundt TM, Cameron DE, Holmes SD, Roselli EE, Pasirja C, et al. Factors associated with acute stroke after type A aortic dissection repair: an analysis of the Society of Thoracic Surgeons national adult cardiac surgery database. *J Thorac Cardiovasc Surg.* July 24, 2019 [Epub ahead of print].
3. Hawkins RB, Mehaffey JH, Downs EA, Johnston LE, Yarbboro LT, Fonner CE, et al. Regional practice patterns and outcomes of surgery for acute type A aortic dissection. *Ann Thorac Surg.* 2017;104:1275-81.
4. Rosinski BF, Idrees JJ, Roselli EE, Germano E, Pasadyn SR, Lowry AM, et al. Cannulation strategies in acute type A dissection repair: a systematic axillary artery approach. *J Thorac Cardiovasc Surg.* 2019;158:647-59.e5.

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