Authors have nothing to disclose with regard to commercial support.

N.A.M. is a consultant and investigator for Abbott, Medtronic, and SynCardia. K.J.K. has nothing to disclose with regard to commercial support.

References

1. Gupta S, Belley-Côté EP, Whitlock RP. The limitations of observational data in assessing surgical left atrial appendage ligation. *J Thorac Cardiovasc Surg.* 2018;156:1085.
2. Juo YY, Lee Bailey K, Seo YJ, Aguayo E, Benharash P. Does left atrial appendage ligation during coronary bypass surgery decrease the incidence of postoperative stroke? *J Thorac Cardiovasc Surg.* March 12, 2018 [Epub ahead of print].
3. Fenlon C, O'Grady L, Doherty ML, Dunnion J. A discussion of calibration techniques for evaluating binary and categorical predictive models. *Prev Vet Med.* 2018;149:107-14.
4. Allison P. Why I don't trust the Hosmer-Lemeshow test for logistic regression. Available at: <https://statisticalhorizons.com/hosmer-lemeshow>. Accessed May 15, 2018.
5. Khera R, Angraal S, Couch T, Welsh JW, Nallamothu BK, Girotra S, et al. Adherence to methodological standards in research using the national inpatient sample. *JAMA.* 2017;318:2011-8.
6. Whitlock R, Healey J, Vincent J, Brady K, Teoh K, Royse A, et al. Rationale and design of the left atrial appendage occlusion study (LAAOS) III. *Ann Cardiothorac Surg.* 2014;3:45-54.

<https://doi.org/10.1016/j.jtcvs.2018.05.025>

WE MUST AMPUTATE!?

Reply to the Editor:

Controversy remains regarding the fate of the left atrial appendage (LAA). Multiple forms of open and closed ligation exist, apparently with low morbidity and mortality.

Unfortunately, the jury is still out. Proponents of a “no-touch technique” cite high failure rates and equivalent outcomes. Surgical studies, on the other hand, have generally been underpowered and nonprospective.

In their recent article in the *Journal*, Juo and colleagues¹ made a valiant effort to resolve the LAA dilemma. In 2 separate responses, one by us and the other by Gupta and colleagues,² several design flaws and statistical limitations were highlighted. Nevertheless, their message resonated with us. The Left Atrial Appendage Occlusion Study II (LAAOS II), a randomized, controlled trial, evaluated LAA occlusion in patients undergoing cardiac surgery.³ No difference in stroke rate was seen. Similarly, the PREVAIL (Watchman LAA Closure Device in Patients With Atrial Fibrillation Versus Long Term Warfarin Therapy) trial also failed to demonstrate superiority of mechanical closure of the LAA for stroke prevention.⁴ Furthermore, surveillance echocardiograms have found unexpectedly high failure rates (40%-60%) for surgical occlusion of the LAA.^{5,6} On the other hand, a well-designed retrospective study by Caliskan and colleagues⁷ looking at a surgical closure device in patients undergoing cardiac surgery showed a significant neurologic benefit in patients who discontinued oral anticoagulation.

Unfortunately, the LAA literature is akin to the maze data, with incredible heterogeneity making data analysis extremely challenging. Although signals exist that surgical treatment may benefit select populations, this remains speculative. Naturally, a prospective, randomized trial that uses a standard technique may ultimately answer the question. Until then, and for the time being, debates will continue online, at meetings, and in the literature.

Kevin J. Koomalsingh, MD

Nahush A. Mokadam, MD

Division of Cardiothoracic Surgery

University of Washington

Seattle, Wash

References

1. Juo YY, Bailey KL, Seo YJ, Aguayo E, Benharash P. Does left atrial appendage ligation during coronary bypass surgery decrease the incidence of postoperative stroke? *J Thorac Cardiovasc Surg.* 2018;156:578-85.
2. Gupta S, Belley-Cote EP, Whitlock RP. The limitations of observational data in assessing surgical left atrial appendage ligation. *J Thorac Cardiovasc Surg.* 2018;156:1085.
3. Whitlock RP, Vincent J, Blackhall MH, Hirsh J, Fremes S, Novick R, et al. Left Atrial Appendage Occlusion Study II (LAAOS II). *Can J Cardiol.* 2013;29:1443-7.
4. Reddy VY, Doshi SK, Kar S, Gibson DN, Price MJ, Huber K, et al; PREVAIL and PROTECT AF Investigators. 5-year outcomes after left atrial appendage closure: from the PREVAIL and PROTECT AF trials. *J Am Coll Cardiol.* 2017;70:2964-75.
5. Kanderian AS, Gillinov AM, Petterson GB, Blackstone E, Klein AL. Success of surgical left atrial appendage closure: assessment by transesophageal echocardiography. *J Am Coll Cardiol.* 2008;52:924-9.
6. Lee R, Vassallo P, Kruse J, Malaisrie SC, Rigolin V, Andrei AC, et al. A randomized, prospective pilot comparison of 3 atrial appendage elimination techniques: Internal ligation, stapled excision and surgical excision. *J Thorac Cardiovasc Surg.* 2016;152:1075-80.
7. Caliskan E, Cox JL, Falk V, Salzberg SP, Emmert MY. Surgical device-enabled epicardial LAA closure to achieve safe, complete, and durable LAA occlusion. *Nat Rev Cardiol.* 2018;15:191.

<https://doi.org/10.1016/j.jtcvs.2018.05.064>

“APPENDING” ONTO LEFT-SIDED THORACOSCOPIC OPERATIONS: AN OBVIOUS TWO-FOR-ONE BARGAIN?

Reply to the Editor:

Since the left atrial appendage (LAA) was identified as the thromboembolic source in at least 90% of nonvalvular atrial fibrillation-related strokes,¹ excluding this appendage has been the subject of a seemingly endless number of clinical trials, surgical techniques, and occlusive devices.