The Editor welcomes submissions for possible publication in the Letters to the Editor section that consist of commentary on an article published in the Journal or other relevant issues. Authors should: • Include no more than 500 words of text, three authors, and five references. • Type with double-spacing. • See http://jtcvs.ctsnetjournals.org/misc/fora.shtml for detailed submission instructions. • Submit the letter electronically via jtcvs.editorialmanager.com. Letters commenting on an article published in the JTCVS will be considered if they are received within 6 weeks of the time the article was published. Authors of the article being commented on will be given an opportunity of offering a timely response (2 weeks) to the letter. Authors of letters will be notified that the letter has been received. Unpublished letters cannot be returned.

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THE LIMITATIONS OF OBSERVATIONAL DATA IN ASSESSING SURGICAL LEFT ATRIAL APPENDAGE LIGATION

To the Editor:

We read with interest the study by Juo and colleagues, which examined outcomes in a cohort of patients with atrial fibrillation who underwent surgical left atrial appendage (LAA) ligation concomitantly with coronary artery bypass grafting. The authors evaluated the short-term efficacy and safety of LAA ligation in 20,664 patients among a sample of 234,642 patients from the Nationwide Inpatient Sample, and reported no significant differences in postoperative stroke, mortality, bleeding, and pericardial complications.1

We have some concerns regarding their study. First, Juo and colleagues report a C-statistic of 0.62 for their propensity score model, but do not report its confidence interval. According to Hosmer and Lemeshow, when the confidence interval includes 0.5, a model is not a significant predictor.2 Second, the authors do not disclose how many patients in the LAA ligation group were matched in their model, and if power was sufficient to show a difference in their outcomes. The authors also conducted a weighted logistic regression using the Congestive Heart Failure, Hypertension, Age (≥75 years), Diabetes, Stroke/Transient Ischemic Attack, Vascular Disease, Age (65-74 years), Sex (Female) score to estimate the association between LAA ligation and stroke. Although the Congestive Heart Failure, Hypertension, Age (≥75 years), Diabetes, Stroke/Transient Ischemic Attack, Vascular Disease, Age (65-74 years), Sex (Female) is a validated score for long-term stroke risk in the outpatient setting, it has not been validated in the inpatient postoperative stroke setting. It would perhaps be more appropriate to use a validated perioperative prognostic score for permanent stroke, like the Society of Thoracic Surgeons score.3 Furthermore, despite not reaching statistical significance, the authors discuss a “marginal” increase in mortality and bleeding-related complications among the LAA ligation cohort. Biases are inherent in observational designs; discussing marginal results and causality on the basis of these analyses is not appropriate. Because of these concerns, we advise caution when interpreting this study, especially because its conclusions and recommendations differ from what the current body of literature suggests.3

Juo and colleagues raised concerns regarding LAA ligation as a surgical procedure.1 First, they cite the LAA Occlusion Study (LAOOS) pilot trial, noting that complete occlusion was attained in only 43% of patients using sutures. Whitlock and colleagues rectified this in LAOOS II with mandatory use of a stapler to amputate the LAA, along with intraoperative transesophageal echocardiography to confirm appropriate occlusion.6 In their model, the authors do not account for the technique of LAA ligation. Second, J o and colleagues1 discuss a prolonged surgical time, but on the basis of LAOOS II, LAA amputation adds approximately of 10 minutes of surgical time.

A large randomized controlled trial will provide definitive answers regarding the efficacy and safety of LAA occlusion. LAOOS III is an ongoing randomized controlled trial of concomitant surgical LAA occlusion in patients with a history of atrial fibrillation who undergo cardiac surgery.7 LAOOS III, with more than 4500 patients enrolled as of April 2018, will provide unbiased estimates of the efficacy and safety of concomitant LAA occlusion during cardiac surgery.

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