To clip, or not to clip? Prophylactic left atrial appendage ligation should be performed in patients with, or at risk for, atrial fibrillation

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Central Message

The meta-analysis by Ando and colleagues¹ is a powerful argument for prophylactic left atrial appendage ligation, especially in patients with or at high risk for atrial fibrillation.

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We applaud Ando and colleagues¹ for their article in this issue of the *Journal*, “Concomitant Surgical Closure of Left Atrial Appendage: A Systematic Review and Meta-analysis.” Their work aims to address the following clinical question: Is left atrial appendage closure (LAAC) a potential alternative to lifelong anticoagulation? Although the statistical results limit their ability to assertively say that LAAC can be used as an alternative to lifelong anticoagulation, they have compiled the strongest body of evidence for LAAC in elective cardiac surgical cases.

Atrial fibrillation is an onerous disease to live with, and 20% to 25% of people will have atrial fibrillation in their lifetimes.²⁻⁴ Patients often have symptoms, with difficulty breathing, palpitations, limitations in stamina, and syncope. In addition, patients are instructed to take medications with high risks of inadvertent bleeding and other side effects. Reversal of warfarin coagulopathy in elderly patients with trauma is an actively researched area.⁵ Treatment of these patients is difficult and often results in poor outcomes. With novel anticoagulants coming to market, the treatment of patients being seen after trauma or for emergency surgery is growing in volume and complexity. As cardiac surgeons, we see patients for a short period along their cardiac health history. We, as surgeons, are in a powerful position to be able to address the burden of atrial fibrillation for patients who undergo cardiac surgery and potentially ease the burden of this disease as these patients age.

This meta-analysis by Ando and colleagues¹ shows a statistically significant “better early survival and lower cerebral vascular accidents, especially in preoperatively AF [atrial fibrillation] cohorts.” The combined follow-up period is relatively short; despite this brevity, the analysis shows a significant reduction in the clinical burden of atrial fibrillation for these patients. The difficult next step is determining which patients should be offered LAAC. There are

predictive models available.⁶ We propose consideration of the following attributes to help in this decision-making process:

- Age—patients older than 80 years will have higher risk of atrial fibrillation.
- History of atrial fibrillation—we believe that this group should undergo LAAC.
- Left atrial size—patients with enlarged atria (>4 cm) have a high risk of atrial fibrillation.
- Stroke—patients with previous strokes are at risk.
- History of falls—patients at high risk of injury should not take anticoagulation and would benefit from LAAC.
- History of bleeding—patients with intolerance to anticoagulation should undergo LAAC.

The article by Ando and colleagues¹ is provocative when thinking about our everyday practice. Nearly 50% of our patients will have perioperative atrial fibrillation. These patients are arguably the ones at risk for further episodes of atrial fibrillation as they age. We should not neglect the opportunity during cardiac surgery to address the long-term stroke risk posed by atrial fibrillation. Conversely, we should not subject patients to undue risk (and expense) of LAAC. Ligation of the left atrial appendage can be performed easily with the traditional cut and sew method with relative ease and safety. Commercially available

devices (AtriClip; AtriCure, Minneapolis, Minn) are easy to apply, fast, safe, and effective at left atrial appendage obliteration. There are new devices soon to be available with an easier application and a lower profile than those of the previous generation.

Again, we commend Ando and colleagues¹ for their article, “Concomitant Surgical Closure of Left Atrial Appendage: A Systematic Review and Meta-Analysis.” This article provides an excellent springboard for future study of the clinical utility of LAAC in routine cardiac surgery. Should we perform LAAC in all cardiac surgical cases? Probably not, but we should definitely do this for patients with history of atrial fibrillation, and probably for a select group of patients at high risk for atrial fibrillation in their lifetimes.

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