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Commentary: Targeting the left atrial appendage

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CENTRAL MESSAGE

The robotic platform provides an elegant approach for left atrial appendage management in patients who are not candidates for anticoagulation.

Stroke prevention is a primary goal in the management of patients with atrial fibrillation (AF). First-line therapy in this regard consists of systemic anticoagulation with either warfarin or a direct oral anticoagulant. These medications are extremely effective, reducing the stroke risk by 60% or more in patients with AF.[1] However, this comes with the tradeoff of increased risk of bleeding. In addition, compliance with oral anticoagulants is variable. These well-recognized limitations have fueled the development of mechanical means to occlude the left atrial appendage (LAA) and thereby reduce stroke risk in patients with AF. Randomized controlled trials in both the surgical and interventional literature confirm that LAA management does, indeed, reduce the risk of stroke and other thromboembolic events in patients with AF.[2,3]

When cardiac surgeons encounter patients with AF, it is generally in the setting of concomitant structural heart disease (eg, mitral regurgitation, aortic stenosis, coronary artery disease). At the time of surgery, these patients are best served by a Cox-maze IV procedure, which includes management of the LAA. With current technologies, this addition to the operation takes less than 30 minutes and does not increase surgical risk.

In contrast to concomitant AF management, sole therapy for AF has not become a common surgical procedure. The relative successes of catheter ablation and the percutaneous Watchman device, combined with the perceived invasiveness of surgery, have combined to limit the surgeon's role in this arena. However, many patients are not candidates for percutaneous strategies to manage AF; to serve these patients, surgeons must offer a safe and minimally invasive surgical approach.

Antaki and colleagues[4] make an important contribution with their demonstration that robotically assisted LAA exclusion offers a safe, effective, and minimally invasive option for patients with AF. The majority of patients in their series could not tolerate oral anticoagulation and were therefore unsuitable candidates for percutaneous LAA closure (as Watchman implantation is generally followed by a period of oral anticoagulation). Among their 42 patients, they had 100% procedural success and no intraoperative complications.

With these results, robotic LAA management offers an attractive option for patients who cannot take oral anticoagulants. Excellent visualization with the surgical robot may provide an advantage over standard thoracoscopic techniques. However, as the authors note, robotic surgery entails a substantial learning curve. Surgeons with robotic experience can employ the technique described by Antaki and colleagues and achieve clinical success. In contrast, those who do not already use the surgical robot may wish to pursue a thoracoscopic approach to LAA management. With the high and increasing prevalence of AF, a surgical group that offers safe, effective, and minimally invasive LAA management will surely have patients to serve.

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