The left atrial appendage: A surgical target

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In their comprehensive review in this issue of the Journal, Bedeir and colleagues' present a compelling case in support of the assertion that left atrial appendage (LAA) management represents a valid alternative to anticoagulation for selected patients with atrial fibrillation (AF). Stroke is the most feared complication of AF, but anticoagulation to reduce stroke risk is an imperfect therapy that presents multiple challenges. These include increased risk of bleeding, frequent noncompliance, and reduced quality of life. In both randomized, controlled clinical trials and a meta-analysis, LAA occlusion has proved to be an acceptable alternative to oral anticoagulation in patients with AF at increased stroke risk (CHADS2 score ≥1).1–3 Compared with warfarin, percutaneous LAA occlusion reduces long-term mortality and improves quality of life while providing equivalent overall protection from stroke. Interestingly, percutaneous LAA occlusion reduces the incidence of hemorrhagic stroke but slightly increases the incidence of ischemic stroke, resulting in a net stroke risk similar to that observed with oral anticoagulation. Nevertheless, the message is clear: LAA occlusion represents an alternative to anticoagulation in selected patients with AF. This statement informs surgical LAA management.

LAA MANAGEMENT: CONCOMITANT CARDIAC SURGERY

Nearly all patients with preexisting AF should undergo LAA management at the time of concomitant surgery. Although some patients may not be ideal candidates for surgical ablation (eg, giant left atrium in the setting of complex, high-risk surgery), nearly all can undergo LAA management. Currently, there are no data to support LAA occlusion or excision in surgical patients with no history of AF. Although endovascular LAA management strategies have proved effective, they are not universally applicable. Patients receiving a transcatheter, endocardial device require a period of anticoagulation or antithrombotic therapy, and many patients cannot tolerate such medications. In addition, LAA morphology may exclude percutaneous occlusion. With device-based, epicardial LAA occlusion through a minimally invasive approach, surgeons now have an option to treat these patients.

LAA MANAGEMENT: STAND-ALONE SURGICAL THERAPY

Bedeir and colleagues¹ suggest an important role for stand-alone surgical management of the LAA, and this represents an area of potential growth in cardiac surgical practice. Lifelong anticoagulation is problematic for large numbers of patients with AF, and these individuals should be considered for LAA management. Although endovascular LAA management strategies have proved effective, they are not universally applicable. Patients receiving a transcatheter, endocardial device require a period of anticoagulation or antithrombotic therapy, and many patients cannot tolerate such medications. In addition, LAA morphology may exclude percutaneous occlusion. With device-based, epicardial LAA occlusion through a minimally invasive approach, surgeons now have an option to treat these patients.

LAA MANAGEMENT: SURGICAL TECHNIQUE

Endocardial, suture-based LAA closure is simple, quick, and unreliable. A 2-layered suture closure of the LAA fails more than half the time, and the patient with incomplete LAA closure is left at increased risk for thromboembolism.4,5 The 2 most successful surgical techniques are excision with suture closure, which requires cardiopulmonary bypass, and device-based epicardial occlusion, which can be performed as an off-pump procedure. Although LAA management often seems to be a simple “add-on” to the primary surgical mission, the procedure requires the same meticulous attention accorded other parts of the operation. As with all surgical procedures, proper surgical technique is necessary to achieve optimal outcomes.
References


