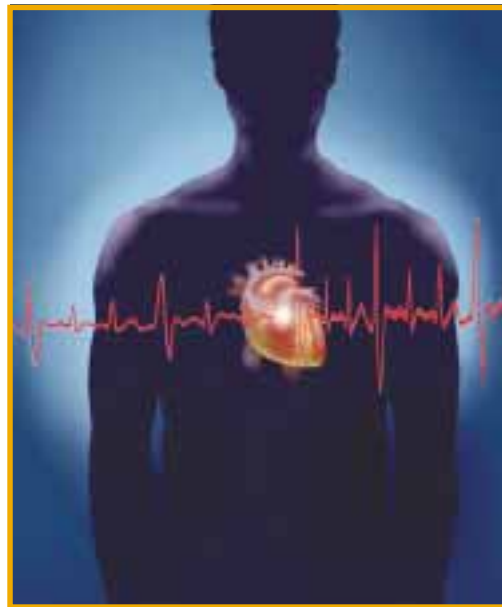


## Atrial Fibrillation Management: A Shifting Paradigm

### Curing AF: Ablation or Surgery— For Who and Why?



*Credit: Jim Dowdalls/Photo Researchers, Inc.*

Answering the question posed by his session (“Curing AF: Ablation or Surgery— Who and Why?”), professor Douglas A. Packer, MD, co-director of the Mayo Clinic, Rochester, MN, electrophysiology laboratory said, “Because the drugs don’t work all the time.”

Addressing success with ablative and surgical techniques, Packer reviewed the development of surgical procedures, stating that while the success rate for the surgical MAZE III procedure (Cox JL: *Ann Surg* 224:267,1996) in eliminating atrial fibrillation (AF) was 94%, other series have had rates ranging from 78-97%. Surgical outcomes, Packer said, may depend on the underlying AF cause. Patients with chronic AF, for example, haven’t done as well as those with paroxysmal or

intermittent AF. Also, larger trial size predicts worse outcome. Stroke rates over 10-15 years after Maze surgery do decline, he added.

New surgical techniques, including bipolar, cryo and ultrasound devices, have made procedures shorter, but harder from the point of view that they introduce procedural changes. The general trend has been a decline in invasive surgical procedures, with growth in both new, more costly techniques and ablative interventions overall. Surgeons moving towards minimally invasive routes lose one of the advantages that has been inherent to surgery: less invasive strategies tend to impair the surgeon’s ability to completely visualize the heart. Whether or not these new strategies represent less risk and higher success rates (and thus, lower cost) remains to be seen.

Complication rates (e.g., mortality of 1-15%), Packer said, are mostly a function of the underlying disease. “Adding a Maze procedure to a valve repair or bypass graft surgery doesn’t really change the morbidity and mortality.” On the catheter side, while early use of radiofrequency ablation with hand-held probes led to lethal esophageal perforations or other damage, the newer bipolar approach with clamps has nearly eliminated such

complications. Risk for the need for a pacemaker following either surgical Maze or catheter ablation (2.6%-19%) is also a function of underlying disease. The most recent look at ablation procedures success rates in clinical trial places them in the 75-85% range.

Patients with paroxysmal AF, which is more initiation substrate- and trigger-dependent, are good ablative candidates, Packer pointed out. Success rates for those with more permanent AF with more substrate-mediated arrhythmias are reduced to 60-70%. "It takes a lot bigger procedure," Packer said. Catheter ablation for heart failure patients successfully boosts ejection fraction and lowers heart failure class.

Treatment by either means is warranted when patients are highly symptomatic or when drugs simply don't work. Stroke prevention, he emphasized, however, is not a valid stimulus for surgical or ablative approaches because coumadin is effective. Does ablation make life longer? Hypothetically. Data are not there yet.

The balance tips in favor of surgery when patients need bypass grafting or valve repair or replacement. In overall terms of success rates and complications, ablation and surgery compare favorably. Cost favors ablation, preservation of left atrial function may be similar in both approaches, but a catheter- based procedure is substantially less invasive and the recovery period is significantly shorter than with surgery.

"I think there's going to be enough AF to keep both surgeons and ablation doctors busy for a long, long time. We will get more interventional and more aggressive and surgeons will become less invasive. We're going to meet someplace in the pericardial space," Packer concluded.

### Stroke Prevention in Atrial Fibrillation

To the question, "is the AF paradigm shifting away from warfarin anticoagulation for stroke prevention?" professor A. John Camm, St. George's Hospital Medical School, London, said: "Shifting, yes, but changed, not yet."

Trends include an increasing prevalence of difficult-to-treat "silent" AF, with greater stress on "upstream" therapies, rate control, non-pharmaceutical strategies, and reduced use of pharmaceutical rhythm control.

For stroke prevention, meta-analyses show that warfarin dose-adjusted to an INR between 2-3 is outstandingly effective compared with placebo or low-dose warfarin, and somewhat better than aspirin. Between compliance problems and extensive drug-drug interactions, INR control is considered "good" when 70% of tests fall within therapeutic range. Despite compelling evidence, many appropriate AF patients are not treated, especially younger (<55 years) and elderly patients (>85 years). Only 62.1% of "ideal" candidates are treated, Camm stated. Other groups typically undertreated include those with paroxysmal AF and asymptomatic AF, despite the fact that their stroke, TIA and death risks are at least as high as in those with chronic AF. Also, in those with pacemakers, AF may be masked and risks increased.

Will new agents such as direct thrombin inhibitors allow us to discard warfarin? Some, like ximelagatran showed promise with easier administration, but approval has been denied by the US FDA and the approval process has been severely slowed in Europe as well due to liver toxicity. Other new agents, including heparin analogues and direct factor Xa inhibitors are not yet adequately studied.

Will rhythm control obviate the need for warfarin? Will pulmonary vein isolation? Studies do not support that patients so-treated can safely skip warfarin anticoagulation, Camm said. What about stroke risk reductions with Maze procedures? "It is far too early to say that warfarin is not needed in these patients."

Are there no cases where warfarin anticoagulation can be discarded? Several devices, including some placed in the left atrial appendage, and carotid diverters placed in the external carotid bifurcation, show promise in early human trials. The same is true for strategies involving left atrial appendage occlusion and appendagectomy. "We have to wait for results," Camm stated. He concluded: "The paradigm may be about to shift, but it has not yet shifted."