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Commentary: Head-to-head or head-to-toe

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In this edition of the *Journal*, Huang and colleagues¹ present a meta-analysis of randomized trials comparing catheter ablation (CA) with surgical ablation (SA) for the treatment of atrial fibrillation (AF). The key finding was a moderate advantage of SA in achieving success at 1 year, in accordance with the 2017 multisociety consensus statement definition of success as freedom from AF without the use of antiarrhythmic drugs.² Findings persisted in subgroup analysis. The secondary end point of safety outcomes was similar for the procedures, except for vascular injury being higher with CA (odds ratio, 5.81) and pneumothorax being lower with CA (odds ratio, 0.09). In both their

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CENTRAL MESSAGE

Head-to-head comparisons of CA and SA for AF traditionally have not been considered in the guidelines. A meta-analysis of randomized trials adds to the evidence.

In Introduction and Discussion, the authors discuss the several multisociety guidelines and consensus statements, focusing on the relative class of recommendations (COR) for SA and CA. Specifically, they “infer that a lower class of recommendation for SA by the...guidelines may lead to the underuse of SA.” In light of their new meta-analysis findings, this may be a valid concern. However, a brief historical review of the evolution and evidence underlying ablation

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FIGURE 1. Left: Indications for CA for symptomatic AF. Right: Indications for stand-alone SA for AF. AF, Atrial fibrillation; AA, antiarrhythmic. Adapted from Calkins and colleagues.²

CORs is warranted to more deeply understand these differences.

For early catheter devices seeking AF-specific approval, the Federal Drug Administration (FDA) mandated valid scientific evidence to consist of randomized trials.^{3,4} The 2017 consensus statement noted that subsequent ablation devices seeking FDA approval may be conducted through randomized, noninferiority trials to approved ablation systems or to objective performance criteria or specified performance goals. In any case, the statement noted that there were at least 16 randomized trials comparing catheter devices as second-line with antiarrhythmic drugs, many of which were not specifically for FDA approval but rather to study subgroups including paroxysmal AF, persistent AF, or AF with heart failure. Randomized trials have also examined CA as first-line rhythm control.⁵ In contrast, the evolution of SA arose from the seminal work of Dr Cox and the Cox-Maze procedure. The shift toward application of catheter-based technology in surgical settings did not

require randomized trials, and much of the initial evidence for SA efficacy was from retrospective studies. More recently, the evidentiary basis is moving toward randomized trials, but for stand-alone SA this is lacking.

Thus, the consensus statements and guidelines have historically been structured to separately address the evidence and recommendations for SA and CA. This is seen in the separate flowcharts of indications for these 2 approaches (Figure 1). By the same token, the American Association for Thoracic Surgery and Society of Thoracic Surgeons guidelines only address aspects of SA, rather than whether SA or CA is the more efficacious approach.^{6,7} There is indeed the potential for a bias of cardiologists toward catheter-based procedures. The author group of the 2017 expert consensus statement was heavily weighted toward cardiologists, with only 3 surgeons among the 60 authors.² Although cardiologists may see things through their own lens, the same may be said of surgeons. Although the rates of many complications were not statistically different

between CA and SA, not all complications are clinically equal. For example, a bleeding complication of SA may have different consequences and clinical course than a bleeding complication of CA.

Huang and colleagues¹ achieve high-quality evidence with their meta-analysis, yet COR may not be swayed without significant quantity of evidence as well. The meta-analysis of these 7 studies comprised 583 patients, compared with approximately 5000 in the subset of randomized trials tabulated in the 2017 consensus statement. This highlights the need for ongoing SA studies and ongoing collaboration with our electrophysiology colleagues. The finding that SA is safe in experienced hands may facilitate this goal. Finally, the suggestion that a hybrid approach may be the ultimate solution is prudent, given the less-than-complete success rates of the individual approaches. It is time for AF ablation to move toward a true Heart Team approach, both in practice and research, with both sides looking through the same lens.

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