Surgical atrial fibrillation ablation and follow-up strategies: minimally invasive or maximally effective?

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Stand-alone surgical ablation for symptomatic atrial fibrillation (AF) is a well-recognized alternative to catheter ablation in patients who desire this technique or in whom interventional approaches are contraindicated [1]. Both approaches, surgical or interventional, ought to be performed with the highest possible success and lowest possible complication rates.

In this issue of the Journal, Beukema et al. [2] show clearly that minimally invasive epicardial pulmonary vein isolation (PVI) results in a high failure rate, with 68% of their patients having some kind of AF recurrence (symptomatic as well as asymptomatic). One or more additional postoperative catheter procedures were required in order to restore and maintain a stable sinus rhythm, with a final 87% of patients being AF free. Pursuing restoration of sinus rhythm via subsequent catheter interventions in patients with significant recurrence of AF after ablation procedures as reported by Beukema et al. [2] is another good example of a successful heart-team approach in AF patients.

As physicians, surgeons and scientists, we ought to continuously evaluate our results, and draw conclusions from our successes and failures. A reduction of AF burden to a mean of 6.4 ± 23.5% might be classified as a success [1] and a secondary/tertiary success rate of 87% sinus rhythm restoration is likely to be acceptable. However, our main goal in AF therapy should be the primary high-grade efficiency of surgical ablation. Such reports are not rare in the literature: The groups of Weimar et al. [3] and Ad et al. [4] have presented high and long-lasting success rates of sinus rhythm stabilization with up to 90% of patients in sinus rhythm after surgical stand-alone ablation procedures. These much convincing results were achieved with an extended surgical endocardial approach, the biatrial Cox Maze IV procedure, with the use of extracorporeal circulation and cardiopulmonary arrest. Although this treatment modality incorporates more invasive surgery, the complication rates were low and the patients' commitment to this more invasive surgical approach was high. In case the use of extracorporeal circulation is not warranted, at least a first-line extended epicardial left atrium only approach as described by Weimar et al. [5] ought to be considered. This approach also results in high rates of procedural mid-term success, and additionally includes the possibility to treat the left atrial appendage.

Another important issue, albeit not the primary focus of the work by Beukema, was the use of an implantable event recorder for continuous rhythm monitoring of their patients. These devices allowed the doctors to examine the real success rate of their ablation strategy. Furthermore, these devices allow physicians to detect AF recurrence even in asymptomatic patients [6] and this technology has improved and will further improve with time [7] offering now very low false-positive or -negative rates (AF versus sinus rhythm) for better postoperative catheter procedures with the use of extracorporeal circulation and cardiopulmonary arrest. Although this treatment modality incorporates more invasive surgery, the complication rates were low and the patients' commitment to this more invasive surgical approach was high. In case the use of extracorporeal circulation is not warranted, at least a first-line extended epicardial left atrium only approach as described by Weimar et al. [5] ought to be considered. This approach also results in high rates of procedural mid-term success, and additionally includes the possibility to treat the left atrial appendage.

How often should we monitor for reliable detection of atrial fibrillation and evaluation of therapeutic interventions as well as for intensifying and individualizing post-therapeutic patient management.

Poor outcomes, less than meticulous patient follow-up and suboptimal study designs are poorly received among the scientific community. In that context, surgical ablation techniques with poor success outcome and outdated follow-up methods in surgical AF-ablated patients will lead to a loss of interest in this field. Our primary aim should be to provide stable and convincing surgical ablation results as first-line therapy and to evaluate our therapeutic success by ruling out chance findings utilizing the novel, continuous heart rhythm monitoring technologies that are already available. It is only with high success rates after surgical AF ablation—especially in stand-alone procedures—that our therapies will reach an acceptance among AF patients as well as among the electrophysiological society, which still considers surgical ablation far too invasive. Only thus we will be able to create a new and necessary level of trust and confidence among patients and our cardiology colleagues. With this respect, Beukema et al. [2] are to be congratulated for reporting on the poor results of minimally invasive epicardial PVI—an undeniably valuable lesson—for describing a successful heart-team approach in AF patients and for their commitment to the AF patients.

REFERENCES