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# Left Atrial Appendage Occlusion Device Societal Overview

## The Surgeon's Comment

With great interest we read the American College of Cardiology/Heart Rhythm Society/Society for Cardiovascular Angiography and Interventions (ACC/HRS/SCAI) left atrial appendage (LAA)–occlusion device societal overview by Masoudi et al. (1) summarizing the latest data, but also highlighting the some critical issues of current LAA-occlusion strategies.

In this context, and as mentioned by the expert panel, the adoption of surgical epicardial LAA-occlusion strategies appears to be a valid therapy-option in selected patients. However, unfortunately, the expert panel just provides very brief and incomplete information in this regard.

In the era of the heart-team approach, we would recommend to further highlight substantial data on surgical epicardial LAA devices as their clinical evidence is rapidly increasing. First, the experience with the AtriClip (AtriCure, West Chester, Ohio) which is currently being utilized in the LAAOS-III (Left Atrial Appendage Occlusion Study III) trial is already extensive as it has been applied clinically since 2007 and has been sold more than 50,000 times since regulatory approval. Second, data from two prospective but nonrandomized trials suggest an excellent safety and efficacy profile (2,3) and in particular, just recently, computed tomography –imaging controlled 3-year follow-up data became available underlining its efficacy with regards to complete, but also durable LAA-occlusion (3). These results are of high importance considering the well-established problem of substantial leaks or rest-perfusion associated with the currently available interventional, endocardial LAA-occlusion devices such as the WATCHMAN which has been utilized in the PROTECT-AF (WATCHMAN Left Atrial Appendage System for Embolic PROTECTion in Patients With Atrial Fibrillation) and PREVAIL (Evaluation of the WATCHMAN LAA Closure Device in Patients With Atrial Fibrillation Versus Long Term Warfarin Therapy) trials (NCT00129545/NCT01182441) (4). Next, long-term data for the AtriClip are awaited shortly and most importantly, next-generation devices for minimally invasive thoracoscopic (i.e., stand-alone) approaches are underway. Safety and feasibility of minimally invasive, thoracoscopic surgical ablation (5) as well as LAA amputation have been demonstrated and are currently being evaluated in a phase-II trial (The Stroke Feasibility Study; NCT01997905). In regard to effective stroke reduction, more data and ideally a prospective randomized trial are required.

Current indication for LAA closure is based on a contraindication to oral anticoagulation. Therefore, before any type of procedure, patient-specific anatomical and morphological considerations are necessary to determine the ideal strategy and also to identify potential sub-optimal candidates for transcatheter LAA closure. In these cases, we strongly believe that thinking out of the box is mandatory and such patients should be evaluated for a minimally invasive surgical LAA occlusion procedure. As known from other programs such as TAVI (transcatheter aortic valve implantation) or Mitral-Clip (Abbott Vascular, Santa Clara, California), we are convinced that only a close collaboration between cardiologists and surgeons (heart-team approach) focusing on a patient-specific approach and device selection will assure a safe, complete, and durable LAA occlusion in all-comers.

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