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Keynote

Cardiac Electrophysiology on the Road from Electro-Anatomical to Anatomico-Electrical Ablation Strategies

Christian Sohns

Abstract

Despite the very promising results of clinical studies, catheter ablation of cardiac arrhythmias remains a challenge in modern electrophysiology. On the basis of the hypothesized pathophysiological mechanisms, a variety of ablation strategies have been developed over the course of time. Currently, ultra high-resolution electro-anatomical and activation mapping leads to a high level of confidence and ablation procedures guided by electro-anatomical mapping systems were highly effective and save as compared to other mapping approaches. Despite these facts we see the potential to identify and to visualize additional targets for catheter ablation and to integrate this crucial information in real-time into clinical practice. Furthermore, high-resolution visualization of the complex and individual relationship between electrical signals and anatomical conditions might be helpful to discriminate areas of scarred tissue in the atria and ventricle corresponding to high density low-voltage regions. This might have a significant benefit focusing the ablation of complex cardiac arrhythmias. One may speculate that further improvements focusing on visualization and integration of anatomical pre-conditions including fibrosis, scar as well as structural variants allow to predict anatomical regions for successful ablation. This interesting perspective implies a change in paradigm for catheter ablation of cardiac arrhythmias towards anatomico-electrical ablation approaches.