The Contrast between the Area of the Ganglionated Plexi and Complex Fractionated Atrial Electrograms

Yuichiro Sakamoto, Kohei Yamashiro, Mitsuru Takami, Koyo Satoh, Takahiko Suzuki
Cardiovascular Medicine, Toyohashi Heart Center, Toyohashi, Aichi, Japan

The Ganglionated Plexi (GP) and complex fractionated atrial electrograms (CFAE) play the important role as the perpetuator of atrial fibrillation (AF). GP ablation is known as an alternative procedure for AF. The aim of this study was to evaluate the contrast between the area of the GP and CFAE.

Method: Ten consecutive patients with AF were studied. For patients with sinus rhythm, AF was induced by rapid atrial pacing. The geometry of the left atrium (LA) was reconstructed with electroanatomical mapping system (CARTO XP). Bipolar electrograms recorded during 2.5 seconds were analyzed using CFAE software module. The algorithm was customized to demonstrate the classification as follows in interval confidence level (ICL) map. Sites with continuous or transient fractionated atrial potentials were colored red. Sites with irregular amplitude, polarity, cycle length but not rapid were colored green. Sites with slow organized atrial potential were purple. The sites where vagal response was evoked by high-frequency stimulation were identified as GP sites and marked on the geometry.

Result: A total of 1,107 points were taken in LA. Among a total of 197 GP points, 139 (77.2%) points were in colored red and categorized as in CFAE area. GP points in colored purple categorized as in slow organized area were only 4 points (2.3%). Conclusion: The Ganglionated Plexi is strongly related to CFAE.

Keywords: ganglionated plexi (GP), CFAE