Paroxysmal atrial fibrillation (AF) is often preceded by repetitive focal atrial activity. There is a general consensus that this trigger initiator is the prevailing arrhythmia feature in the genesis of paroxysmal AF, whereas the substrate maintaining AF seems to play only a secondary role in patients with paroxysmal AF. Pulmonary vein (PV) isolation is an effective treatment for paroxysmal AF. Our understandings of the mechanisms of initiation and perpetuation of AF have increased. However, the success of radiofrequency catheter ablation of paroxysmal AF is not yet comparable to that in the other atrial arrhythmias. In addition, catheter ablation of AF is time-consuming and technically challenging. Three-dimensional (3D) electroanatomical mapping system has been useful in identifying the critical area for the sustenance of tachycardias. 3D mapping system also is useful in reducing the procedure time and the radiation exposure time during AF ablation. Recently CARTO 3 system has been launched in Japan. This new system is characterized by a hybrid magnetic and current technology and enables exact localizations of Lasso catheter placed in the PV and ablation catheter. This new technology seems to be useful in not only the accomplishment of circumferential PV isolation but the reduction of the procedural and fluoroscopy times. In this morning seminar, I would describe our fundamental strategy of catheter ablation for paroxysmal AF using a new CARTO 3 system.

Keywords: paroxysmal atrial fibrillation, electroanatomical mapping, catheter ablation