Mechanisms and Ablation of Mitral-Annular AT Occurring in Patients Post Full-Maze Surgery for Atrial Fibrillation

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Background: The mechanism of AT occurring post full-maze surgery for atrial fibrillation is unclear, and the method for successful ablation is not established. Methods and Results: Out of consecutive 32 patients who underwent radiofrequency ablation for atrial tachycardia / flutter (AT) occurring post full-maze surgery for atrial fibrillation, mitral annular AT was observed in 12 patients. In all patients, residual conduction across the surgical lesion from pulmonary veins to posterior mitral annulus was the part of the reentrant circuit. In 7 patients activation sequence of the coronary sinus was continuous and the post-pacing interval was identical to the tachycardia cycle length and successful ablation was achieved in the CS. In 2 patients, additional ablation to endocardial mitral annulus was necessary for making complete block. In the remaining 3 patients, completion of the linear lesion was unsuccessful, and we made alternative lesion such as lateral mitral isthmus line. Conclusions: CS musculature is the important substrate for residual conduction causing mitral annular AT post full-maze surgery, and RF ablation in the CS is successful in most of the patients. In some patients with wider breakthrough involving both the LA and CS, completion of linear lesion by supplemental RF ablation was often difficult.