ARRHYTHMIAS

AF PACING IN SICK
SINUS SYNDROME

“In patients with sick sinus syndrome (SSS), the occurrence of atrial fibrillation (AF) after pacemaker implantation is very common and associated with increased risk of stroke, systemic embolism, heart failure, and mortality,” says Hung-Fat Tse from the Queen Mary Hospital in Hong Kong. A study undertaken by Tse and colleagues, and published in *Circulation*, has shown that neither the use of an alternative atrial pacing site in the right atrial septum, nor continuous atrial overdrive pacing, prevents the development of persistent AF in patients with SSS.

Conventionally, in patients with SSS, pacemakers act at the right atrial appendage; however, whether pacing at other positions in the atrium provides more-beneficial effects has been unclear. The Septal Pacing for AF Suppression Evaluation (SAFE) study investigators, therefore, compared different rates and sites of pacing in a single-blind, randomized study of 385 patients with SSS and a history of paroxysmal AF.

The SAFE study participants, none of whom had a pacemaker prior to the trial, received atrial pacing at either the right atrial appendage or septum, with or without continuous pacing. The 350 patients who completed the study were assessed every 6 months over a median follow-up period of 3.1 years. The primary outcome of the study was persistent AF requiring cardioversion or episodes documented 7 days apart.

Compared with conventional pacing in the right atrial appendage, pacing at the right atrial septum did not reduce the risk of patients developing persistent AF (HR 1.18, 95% CI 0.79–1.75, $P=0.65$). Furthermore, continuous overdrive pacing also failed to confer any advantage over regular pacing, regardless of the application site (HR 1.17, 95% CI 0.79–1.74, $P=0.61$).

“A significant proportion of patients with SSS developed persistent AF, despite the use of modern pacemaker technologies”, highlights Tse. “Other treatment strategies should, therefore, be further investigated for the secondary prevention of AF in patients with SSS.”

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Original article Lau, C.-P. *et al.* Prospective randomized study to assess the efficacy of site and rate of atrial pacing on long-term progression of atrial fibrillation in sick sinus syndrome: Septal pacing for atrial fibrillation suppression evaluation (SAFE) study. *Circulation* doi:10.1161/circulationaha.113.001644