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**LIMITED CARDIO-NEURAL ABLATION OF THE SUPERIOR VENA CAVA-AORTA AND RIGHT SUPERIOR GANGLIONATED PLEXI AS AN ADJUNCT TO PULMONARY VEIN ISOLATION FOR TACHY-BRADY SYNDROME**

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**Background:** Use of negative chronotropic agents in atrial fibrillation (AF) can cause symptomatic sinus bradycardia (tachy-brady syndrome), often leading to pacemaker implantation. Limited cardineural ablation (CNA) of ganglionated plexi (GPs) immediately following radiofrequency ablation (RFA) for AF can increase heart rate (HR) by modifying autonomic tone, which may help avoid device implantation.

**Objective:** To explore limited CNA for sinus HR augmentation as an adjunct to RFA for AF in patients with tachy-brady syndrome and to determine if increases in sinus HR are sustained.

**Methods:** We performed CNA of the right superior and superior vena cava (SVC)-aorta GPs in 11 patients following RFA for AF. All patients had resting sinus bradycardia (HR < 60 bpm). Ten patients were male, age 62 ± 11 years (all data mean ± SD), paroxysmal AF in 5 cases, repeat AF procedure in 3 cases, posterior wall isolation / additional lines in 9 cases. Procedures were performed under general anesthesia with jet ventilation. GPs were identified by fractionated electrograms in typical anatomic locations with HR increase during ablation. Intra-procedural HR was obtained following AF ablation immediately before and after CNA. Ambulatory sinus HR was collected from 12 lead ECGs before ablation and at 2 week and 2 month post-procedure visits.

**Results:** Intra-procedural HR increased immediately following CNA from 48 ± 10 bpm to 78 ± 15 bpm, p < 0.001, median increase 36 bpm. Compared to pre-procedure ambulatory HR (53 ± 7 bpm), post-procedure HR increased to 65 ± 9 bpm at 2 week and 73 ± 11 bpm at 2 month follow-up visits (p < 0.05). One patient developed post-procedure bradycardia due to suspected sinus node artery injury requiring temporary dopamine infusion but no permanent pacing. In 2 cases, antiarrhythmic drugs were stopped during follow-up, but beta blockers were continued unchanged in all patients.

**Conclusion:** Limited CNA of the SVC-aorta and right superior GPs as an adjunct to AF ablation resulted in an immediate HR increase that was sustained over 2 months of follow-up. This strategy may be useful in augmenting sinus rates in patients with tachy-brady syndrome.