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EFFECT OF NETWORK INTERACTION BETWEEN EPICARDIAL FAT PAD AND VAGAL NERVE TRUNK ON SINOATRIAL NODAL AND ATRIOVENTRICULAR NODAL FUNCTIONS

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Objective To explore effect of interaction between epicardial fat pad and vagal nerve trunk (VNT) on sinoatrial nodal (SAN) and atrioventricular nodal (AVN) functions.

Methods Eighteen dogs were divided into two groups: SAN fad pad (SAN-FP) pre-ablation group and AVN fad pad (AVN-FP) preablation group. Heart rate (HR) and A-H internal were detected during vagal stimulation before and after ablation.

Results The vagal effect induced by right VNT stimulation was larger than left VNT (HR decreased 75% VS41%). In SAN-FP pre-ablation group, reduction of HR was significantly decreased and A-H internal was prolonged by vagal stimulation after SAN-FP ablation. SAN-FP plus AVN-FP ablation didn't induce significant change in HR. There was significant prolongation in A-H internal, compared with baseline and SAN-FP ablation alone. In AVN-FP pre-ablation group, vagal stimulation after SAN-FP ablation didn't induced significant change in HR, but A-H internal was significantly prolonged. AVN-FP plus SAN-FP ablation did not induce significant change in HR and A-H internal compared with AVN-FP ablation alone.

Conclusion We concluded that vagal effect induced by right VNT stimulation was larger than left. VNT regulated SAN function mainly by AVN-FP. Epicardial fat pad was the important pathway of VNT in regulating SAN and AVN function. AVN-FP was main control region and SAN-FP was associated pathway.