duration in left atrium (LA), right atrium (RA), left superior pulmonary vein (LSPV) and left inferior pulmonary vein (LIPV) sites were measured.

Results (1) We successfully established canine models of acute AF induced by increased sympathetic nerve activity. The methods were relatively simple and repeatable. The AF duration was relatively long. (2) The effect on AF inducibility: In RSG group, the induction rate of AF was significantly increased in RA sites (73.30% vs 25.00%, p<0.05), compared with baseline. However, there was no significant changes in LA, LSPV and LIPV sites. In LSG group, the induction rate of AF was significantly increased (63.0% vs 27.10%, p< 0.05; 70.8% vs 33.30%, p<0.05; 47.9% vs 18.80%, p<0.05), compared with baseline in LA, LSPV and LIPV respectively. However, there was no significant changes in RA sites. Compared with RSG stimulation, right stellate ganglionectomy can markly decrease AF induction rate of RA (31.3% vs 73.3%, p<0.05), but it didn't decrease the induction rate of LA, LSPV and LIPV. Compared with LSG stimulation, left stellate ganglionectomy can markly decreased AF induction rate of LA, LSPV and LIPV (35.4% vs 63.0%, p<0.05; 39.6% vs 70.8%, p<0.05;25.0% vs 47.9%, p<0.05), but it didn't decrease the induction rate of RA. (3) The effect on AF duration: In RSG group, the duration of AF was significantly prolonged in RA sites ((76.47±2.23)s vs (20.64±1.76)s, p<0.05), compared with baseline. However, there was no significant changes in LA, LSPV and LIPV sites. In LSG group, the duration of AF was significantly prolonged (respectively, (92.44±1.91)s vs (23.75±1.88)s, p<0.05; (81.72±3.03)s vs (20.80±3.60)s, p<0.05; (66.39±4.76)s vs (25.31±1.52)s, p<0.05), compared with baseline in LA, LSPV and LIPV respectively. However, there was no significant changes in RA sites. Compared with RSG stimulation, right stellate ganglionectomy can markly shorten AF duration of RA ((76.47±2.23)s vs (25.12±4.67)s, p<0.05), but it didn't shorten AF duration of LA, LSPV and LIPV. Compared with LSG stimulation, left stellate ganglionectomy can markly shorten AF duration of LA, LSPV and LIPV((92.44±1.91)s vs (30.47±5.25)s, p<0.05;(81.72 ±3.03)s vs (38.32±4.12)s, p<0.05;(66.39±4.76)s vs (33.45±3.11)s, p<0.05), but it didn't shorten AF duration of RA.

Conclusions Unilateral stellate ganglion electrical stimulation plus rapid atrial pacing for 6 h can successfully establish canine model of acute AF mediated by sympathetic nerve. Stellate ganglion stimulation promote AF induction and prolong AF maintenance in atrial and pulmonary sites. The inhibition sympathetic nerve activation by unilateral stellate ganglionectomy can reduce the AF initiating and sustaining. RSG is mainly associated with AF originating from RA, LSG is mainly associated with AF originating from LA and PV.

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STELLATE GANGLION ELECTRICAL STIMULATION FOR ESTABLISHING A CANINE MODEL OF ACUTE ATRIAL FIBRILLATION MEDIATED BY SYMPATHETIC NERVE

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Objectives To build the methodology of acute animal model of atrial fibrillation (AF) induced by increased sympathetic nerve activity.

Methods Sixteen adult mongrel dogs weighing 18 to 25 kg were randomly divided into 3 groups. Control group (n=4) underwent 6-h rapid atrial pacing only. RSG group (n=6) underwent 6-h right stellate ganglion (RSG) stimulation plus rapid atrial pacing. LSG group (n=6) underwent 6-h left stellate ganglion (LSG) electrical stimulation plus rapid atrial pacing. AF induction rate, and AF