

GW26-e4463**Clinical study of Circumferential pulmonary vein and 2C3L ablation strategy for atrial fibrillation**

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OBJECTIVES To investigate the effectiveness of circumferential pulmonary vein (PV) ablation for paroxysmal atrial fibrillation (PAF), circumferential PV, linear lesions on roof of left atrium, mitral isthmus and tricuspid isthmus ablation (2C3L) for permanent AF were created under guidance of Carto system.

METHODS 351 patients in our hospital during the period from June 2010 to Oct 2012 with AF (282 paroxysmal AF and 69 permanent AF) underwent circumferential pulmonary vein ablation under guidance of the Carto system. Left atrial maps were reconstructed with Carto system. Radiofrequency ablation was performed to create circumferential lines around each PV, complete PVs electric isolation was confirmed by lasso catheter. If AF persisted, linear lesions on roof of left atrium, mitral isthmus and tricuspid isthmus were created. Finally direct current cardioversion were given if sinus rhythm did not return, and pulmonary vein isolation ablation verify and three linear ablation lines bidirectional conduction block in sinus rhythm.

RESULTS All 351 patients were successfully performed with circumferential pulmonary vein ablation. Among them 221 patients were performed circumferential pulmonary vein ablation. Another 130 patients were also performed linear lesions on roof of left atrium, mitral isthmus and tricuspid isthmus. During 3~24months' follow up, 28patients recurred with AF, another 15 patients recurred with atrial tachycardia. The success rate was 87.5% in the study.

CONCLUSIONS Carto system under the guidance of circumferential PV ablation treatment of paroxysmal atrial fibrillation, 2C3L strategy exact effect of treatment of persistent atrial fibrillation, the success rate is high.

GW26-e5416**Radiofrequency ablation of left-sided accessory pathways in patients with mechanical mitral and aortic valve prosthesis**

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OBJECTIVES Radiofrequency (RF) catheter ablation of left-sided accessory pathways is really a great challenge in patients with prosthetic heart valves so that it is in general delayed or even avoided in such patients due to concerns of the higher perceived risks of mechanical complications and difficulty of catheter manipulation in the presence of mechanical valves. We sought to evaluate the safety and feasibility of radiofrequency ablation of left-sided accessory pathways in patients with mechanical mitral and aortic valve prosthesis.

METHODS Nine patients with confirmed left side manifest accessory pathway and mechanical mitral and aortic valve prosthesis, were included in this single-center, retrospective, cohort study. The clinical, procedural, and outcome data were analyzed.

RESULTS All nine patients received 14 times (1.6 ± 0.7 , 95% CI 0.99-2.11) of atrial septal puncture (ASP) with mean procedure duration of 19.3 ± 6.6 min. Three patients had successful ASP in the foramen ovale (FO), and six in unconventional site (three in posterior FO and three in posterior-inferior FO). The mean duration of total procedure and total fluoroscopy is 90.7 ± 24.9 and 15.6 ± 3.0 min respectively. Most of APs are located in left lateral, and only one in the left posterior septal. One patient receiving two ASP procedures was found pericardial tamponade ten minutes after successful radiofrequency ablation. No other complications were found during two years follow-up. A follow-up ECG showed no recurrence in all patients.

CONCLUSIONS Catheter radiofrequency ablation is safe and feasible for left-sided accessory pathways in patients with mechanical mitral and aortic valve prosthesis. Skilled atrial septal puncture and intra-left-atrial catheter manipulation may alleviate the challenges during ablation of APs in patients with prosthetic heart valves.

GW26-e3595**Methods for steadily right phrenic nerve pacing in patients with cryoballoon ablation for atrial fibrillation**

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OBJECTIVES Cryoballoon ablation to achieve pulmonary vein isolation is effective for patients with atrial fibrillation. Right phrenic nerve palsy (PNP) is a common complication during the procedure. Continuous monitoring the right phrenic nerve activity can reduced incidence of PNP. We try to explore an effective method for sustained right phrenic nerve pacing.

METHODS Between December 2014 to March 2015, 32 patients underwent cryoballoon ablation of atrial fibrillation are enrolled in the study. The deflectable pacing catheter were placed in the supra vena cava-right atrium (SVC-RA) region in a reversed letter U fashion. In the right anterior oblique position, the SVC-RA region was longitudinally divided in to upper, medium, and lower region according to the subclavian intervertebral space, and was horizontally separated into posterior, free, and anterior wall. The modified Lead I was used to record the diaphragmatic compound motor action potential (CMAP) when pacing with 5mA output.

RESULTS The phrenic nerve can be steadily captured by the pacing catheter in the SVC-RA region with the reversed letter U fashion. No persistent PNP was observed in any of the 32 patients. A total of 285 sites were tested. The phrenic nerve can be captured in 175 sites (61.4%). Pacing at the posterior (84.2%) and the free wall (80%) of the SVC-RA region is more easily to capture the phrenic nerve than the anterior wall (20%) with the stable pacing output of 5mA, the CMAP was more easily recorded when pacing at the posterior and free wall ($p < 0.001$). The CMAP amplitude was negatively correlated with the pacing threshold (correlation coefficient = -0.267, $p = 0.005$).

CONCLUSIONS The phrenic nerve can be steadily captured with pacing catheter placed at the posterior and free wall of the SVC-RA region with reversed letter U fashion. And pacing at site with lowest threshold can present clear CMAP in modified lead I that can be helpful to predict PNP during cryoablation.

GW26-e4554**The Clinical Study of Under the Guidance of The New Three - Dimensional Mapping for Radiofrequency Ablation of Arrhythmias**

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OBJECTIVES Explore the effective and safety of quickness arrhythmia radiofrequency ablation guide by the new three-dimensional electro-anatomical mapping system

METHODS 238 cases of hospitalized patients with arrhythmia in the second cardiovascular department were selected from March 2013 to February 2015, Grouped into the three - dimensional mapping group (138 cases), two- dimensional X-ray group (100 cases). Wherein three-dimensional mapping group, paroxysmal supraventricular tachycardia 108 cases, 9 cases of atrial flutter, frequent ventricular tachycardia (vt) or ventricular premature beat 24 cases. Guidance of radiofrequency ablation surgery under the CARTO 3 system; The Two-dimensional X-ray group, paroxysmal supraventricular tachycardia of 86 cases, 9 cases of atrial flutter, frequent ventricular tachycardia (vt) or ventricular premature beat 24 cases. Observing and comparing patients with operation time, X-ray exposure time, success rate of surgery, complications and the ratio of tachycardia recurrence after six months.

RESULTS Operation time: There is no difference in operation time of this two groups, paroxysmal supraventricular tachycardia (58 ± 16) min VS (54 ± 20) min ($P = 0.061$); Ventricular tachycardia or ventricular premature group (58 ± 16) min VS (54 ± 20) min ($P = 0.055$); X-ray exposure time: 3d group significantly reduced (0.51 ± 0.07) min VS (7.8 ± 3.6) min, $P < 0.0001$, Shorten the right side next to the road where the group X-ray exposure time of the most significant [(0.4 ± 0.02) min VS (20.2 ± 7.1) min, $P < 0.0001$, Dual atrioventricular node group also significantly reduced (1.1 ± 0.3) min VS (5.5 ± 1.7) min, $P < 0.0001$. Success rate: the 3d group all ablation successfully, Two-dimensional group has 4 cases (2 cases on the right side of the bypass, 2 cases on the left side of the bypass) ablation is not successful, Replacing three-dimensional electro-anatomical mapping system to guide downward radio frequency ablation. Surgical ablation-related