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level (68.4% vs. 90.0%, $P = 0.018$) in Group 23- mm. All targeted veins were isolated using either CBC alone or plus conventional radiofrequency ablation. The AF-free survival had no significant difference between 23- and 28- mm groups (84.2% vs. 76.5%, $P = 0.726$) during a mean follow-up of 7.9 ± 3.2 months. The complication rate was not significantly different between the two groups (2.5%vs.10.5%, P = 0.195). One case of phrenic nerve palsy was detected when froze with a 28- mm balloon.

**CONCLUSIONS** CBC ablations using 23- mm balloons can simplify the procedure, and achieve a higher acute efficacy without at the cost of safety in selected patients when compared with 28- mm ones for catheter ablation of AF in China.

## GW26-e3887

### Early Clinical Study of the Efficacy and Safety of Domestic Devices for Left Atrial Appendage Closure

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**OBJECTIVES** Thromboembolic stroke is the most devastating complication of atrial fibrillation. Occlusion of the left atrial appendage (LAA) is believed to decrease the risk of stroke in the patients with nonvalvular atrial fibrillation. LAA closure with WACTHMAN device was authorized to prevent stroke in the patients with atrial fibrillation, replacing the traditional warfarin anticoagulants. LAmbre, a domestic new-design double-disc LAA closure device and Lefort, a new-design WATCHMAN-like device both entered into clinical trials, however, the feasibility and safety should be further measured. The purpose of this early clinical study was to determine the safety and efficacy of LAA closure using domestic LAA closure devices, the LAmbre and Lefort.

**METHODS** From April of 2014 to March of 2015, the patients with atrial fibrillation were enrolled to undergo percutaneous LAA closure using the LAmbre or Lefort device. LAA closure was confirmed by transesophageal echocardiography (TEE), then TEE or transthoracic transesophageal echocardiography (TTE) in the follow-up duration within 7 days, at 1 month, 3 months, 6 months and 1 year post-LAA closure. The success of sealing was defined as there was no or mild peri-device leak (jet <5mm) detected by TEE.

**RESULTS** Sixty-two patients were screened out to be conducted the procedure of LAA closure using LAmbre (54 cases) and Lefore (8 cases) respectively. Among all patients, 48 (77.4%) had permanent or persistent atrial fibrillation. The average CHADS2 score was 2.9±1.1 and the HAS-BLED was 3.3±1.0. The average time-cost of the procedure was about 68 minutes. The success of LAA closure was 100%. There were no major safety endpoint events during the peri-operative period. The average follow-up duration was 8.6 months, of which The LAmbre was 9.6 months, while the Lefort was 2 months. No cases lost to follow up. The closure of LAA measured by TEE in the 3-month was 97.9%. No stroke event or device-associated severe adverse event happened. The major SAEs were all-cause readmission (60%) and approach-associated complications (33.3%).

**CONCLUSIONS** This single-center early clinical study showed the safety and effectiveness to prevent stroke in the patients with atrial fibrillation for the procedure of LAA closure using using domestic devices, the LAmbre or Lefort. However, further large cases and longer follow-up visiting was still request.

## GW26-e4499

### Long-term Outcome and the Mechanisms of Pulmonary Antrum Radial-linear Ablation in Patients with Paroxysmal Atrial Fibrillation

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**OBJECTIVES** The aim of this study was to determine the mechanisms and effectiveness of pulmonary antrum radial-linear (PAR) ablation in comparison with pulmonary vein isolation (PVI) in patients with paroxysmal atrial fibrillation (AF) after a long-term follow-up.

**METHODS** The enrollment occurred between March, 2011, and August, 2011, with the last follow-up in May, 2014A total of 133 patients with documented paroxysmal AF were enrolled from 5 centers and randomized to PAR group or PVI group. Event ECG recorder and Holter monitoring were conducted during the follow-up for all patients.

**RESULTS** The average procedure time was 151±23 min in PAR group and 178±43 min in PVI group ($P$ <0.001). The average fluoroscopy time was 21±7 min in PAR group and 27±11 min in PVI group ($P$ = 0.002). AF triggering foci were eliminated in 59 patients (89.4%) in PAR group, whereas, only 4 patients (6.0%) in PVI group (P <0.001). At median 36 (37-35) months of follow-up after single ablation procedure, 43 of 66 patients in PAR group (65%) and 28 of 67 patients in PVI group (42%) had no recurrence of AF off antiarrhythmic drug (AAD) (P =0.007); and 47 of 66 patients in PAR group (71%) and 32 of 67 patients in PVI group (48%) had no recurrence of AF with AAD (P =0.006). At the last follow-up, the burden of AF was significantly lower in PAR group than in PVI group (0.9% ± 2.3% vs 4.9% ± 9.9%; 90th percentile, 5.5% vs 19.6%; P =0.008).

**CONCLUSIONS** PAR ablation is a simple, safe, and effective strategy for the treatment of paroxysmal AF with better long-term outcome than PVI. PAR ablation might exhibit the beneficial effect on AF management through multiple mechanisms.

## GW26-e0725

### Feasibility and Clinical Application of MSCT Three-dimensional Imaging In Percutaneous Left Atrial Appendage Closure

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**OBJECTIVES** The three-dimensional(3D) structures of left atrial appendage (LAA) in atrial fibrillation patients were reconstructed by Multi-slice computed tomography (MSCT) imaging system, aiming at exploring the feasibility and clinical applied value in percutaneous left atrial appendage closure.

**METHODS** Inclusion criteria were: voluntary patients with both atrial fibrillation and indication for LAA closure aging from 40 to 85 years old with contraindication for oral anticoagulants or unwillingness to take long-term oral anticoagulation therapy. With the three-dimensional structures of LAA which are reconstructed from the imaging of MSCT by post-processing workstation, the measurement of diameter and depth of LAA is compared between the way of preoperatively spatial vector and postoperatively both transesophageal echocardiography(TEE) and radiography, aiming at selecting suitable size and location of LAA closure device. The devices were planted at the ostium of the LAA. The TEE and (or) CT three-dimensional reconstruction were rechecked, and follow-up of major cardiovascular events within 3 months after implantation was recorded.

**RESULTS** 17 atrial fibrillation patients were enrolled (average age:69.0±8.83 years old). 15 of them were non-valvular atrial fibrillation patients [CHADS2-VAS score (3.7±1.78) and HAS-BLED score (2.6±1.33)]. Ten of these 17 patients were successfully implanted with the WATCHMAN LAA closure devices. Nine of the ten were with non-valvular atrial fibrillation with average CHADS2-VAS score (3.2±1.69) and HAS-BLED score (2.7±1.63). The rest one was a valvular atrial fibrillation patient with the history of the percutaneous balloon mitral valvuloplasty (PBMV) resulting in the lack of surgical indications of mitral valve replacement (MVR). No blood leakage was found around the device by regular postoperative TEE and LAA radiography examinations among 10 patients. Two methods under AW4.4 system showed high repeatability and no obvious difference with the final device size. There existed difference with statistical significance compared to TEE (All $P$<0.05). Thus, MSCT imaging may be superior to the TEE. There were no complications of bleeding, embolism, or stroke during both peri-operative period and three-month follow-up time. Also, recheck by TEE and(or) CT 3D reconstruction three months after procedure showed no blood leakage among 10 atrial fibrillation patients.

**CONCLUSIONS** Preoperative MSCT three-dimensional reconstruction of LAA among atrial fibrillation patients shows the three dimensional structure and provides essential information guiding the successful LAA closures. Reconstruction after the procedure provides reliable reference for follow-up.