

## Impact of left atrial appendage morphology on the silent cerebral infarction after cryoballoon ablation for atrial fibrillation

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**Aims:** Cryoballoon ablation (CBA) is effective for atrial fibrillation (AF), however acute silent cerebral infarction (SCI) is not uncommon after CBA. This study aimed to clarify the relationship between the morphology of LAA and SCI.

**Methods and results:** From 2015 to 2019, 207 consecutive patients (65.1±11.4 years, 26.6% of female, 31.4% of persistent AF) who underwent CBA for AF at our hospital were enrolled. All patients were evaluated with computed tomography for LAA before CBA and divided into two groups as chicken wing (CW) group and non-CW group. SCI was evaluated with magnetic resonance imaging at the following day after CBA. As a result, 18.4% of patients have occurred SCI after CBA. Although the patients'

background didn't differ between the two groups, the Hounsfield scale (LAA/Aorta ratio) was lower (non-CW vs. CW = 0.68±0.12 vs. 0.73±0.11, p=0.004), and LAA orifice size tended to be larger (16.9±4.6 vs. 15.8±4.1, p=0.053) in non-CW group. SCI significantly occurred in non-CW group (29.5% vs. 11.6%, p=0.003), especially in cauliflower shape of 45.0%. In multivariate analysis, non-CW (p=0.002, Odds ratio 3.2, 95% of CI 1.5–7.0), skipped DOAC before CBA (p=0.04, Odds ratio 6.1, 95% of CI 1.1–115.4), and touch-up ablation in left atrium (p=0.02, Odds ratio 2.8, 95% CI 1.2–6.5) were independent predictors of SCI.

**Conclusions:** SCI was not rare after CBA for AF. Morphology of LAA was strongly associated with SCI.