**PREVALENCE OF CORONARY CALCIFICATION ON CT IN PATIENTS WITH ATRIAL FIBRILLATION**

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**Background**: Coronary atherosclerosis is a risk factor for atrial fibrillation (AF) and it may be detected by evidence of coronary artery calcification (CAC) on chest computed tomography (CT). The present study investigates the prevalence of CAC, as seen on chest CT, in patients with AF undergoing radiofrequency ablation and patients without pre-existing AF.

**Methods**: The study group consisted of 140 consecutive patients referred for AF ablation between January 2014 and June 2017 who received a pre-ablation CT for left atrial mapping and thrombus identification. The control group consisted of 100 age and sex-matched patients without AF and who had chest CT between January 2017 and June 2017. Demographics and clinical characteristics were collected in a retrospective fashion. Chest CT scans were reviewed in a blinded fashion for presence of coronary calcification.

**Results**: The study group included 28% females. The groups did not differ with regard to hypertension (p=0.07). Controls had more hyperlipidemia (62% vs 41%, p= 0.001) while AF patients had more diabetes (87% vs 65%, p<0.001). With regard to any CAC, there was no significant difference between the patients with AF (74.3%) and controls (75%) (p=0.02). Further, no difference was observed between AF patients and controls when it came to prior diagnosis of coronary artery disease (75% and 79% respectively, p>0.05). There was no difference in CAC within the left main (p=0.06), left anterior descending (p=0.96), and circumflex (p=0.07) arteries between AF patients and controls. However, the right coronary artery (RCA) was less commonly affected in patients with AF (p=0.02) such that 32% of patients with AF and 48% of controls showed evidence of RCA CAC.

**Conclusions**: CAC is highly prevalent in AF patients and can be readily detected on routine chest CT. Patients with AF did not differ from controls with regards to total CAC or known history of coronary artery disease. The similarity between diagnosed coronary artery disease and CAC detected by CT for both AF and controls indicates a level of subclinical coronary disease in both populations. Clinical significance and proper management of these at-risk patients should be investigated further.