Atrial Fibrillation (AF) - Oral Anticoagulation

Is transesophageal echocardiogram mandatory for patients undergoing ablation for right atrial flutter with uninterrupted anticoagulants? A prospective single registry

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Background. Limited data exist regarding the prevalence of left atrial appendage (LAA) thrombi and spontaneous echocardiographic contrast (SEC) in patients with atrial flutter (AFL). Objectives. Our prospective single-center observational study sought to evaluate the prevalence of LAA thrombi in patients referred for AFL ablation, compared to those requiring atrial fibrillation (AFib) ablation during the same time period, as well as to determine the predictive factors of LAA thrombi in terms of arrhythmia etiology. Methods and Results. From July 2019 to August 2020, 321 consecutive patients who were referred for either AFib ablation (n = 229) or AFL ablation (n = 92) were included in the study, with a thrombus detected by transesophageal echocardiography (TEE) in 3.22% (12/321). Prior to ablation under anticoagulants, the percentage of thrombi was similar between patients referred for AFL ablation and those referred for AFib ablation (5.4% [n = 5/92] vs. 3.1% [n = 7/229]; p = 0.3). In the overall population, patients with LAA thrombi had a higher CHA^2DS^2-VASc score (3 ± 2 vs. 2 ± 1.5; p = 0.048) and a higher presence of valvular prothesis (25% vs. 4.9%; p = 0.003), with relevant left atrial remodeling more often observed, such as demonstrated by a higher left atrium (LA) volume (57 ± 19 vs. 46 ± 17 ml/m²; p = 0.04), a lower LAA velocity (0.41 ± 0.3 vs. 0.55 ± 0.2; p = 0.04) and a more severe LAA echo contrast (83.3% vs. 3.2%; p <0.0001). In the subset of patients with right AFL, patients with LAA thrombi had a higher CHA^2DS^2-VASc score (4.4 ± 1 vs. 2.5 ± 1.5; p = 0.008), had more often hypertension (100% vs. 53%; p = 0.04) and more often diabetes mellitus (60% vs. 18.4%; p = 0.03), and a more severe LAA echo contrast (80% vs. 5.7%; p <0.0001). Predictive factors of atrial thrombi evaluated by crude odds ratios were the presence of valvular prosthesis (OR = 6.53; [1.60, 26.65] ; p = 0.009), the CHA^2DS^2-VASc score (OR = 1.41 [0.99, 2.01] ; p = 0.05), the LAA velocity (cm/s) (OR = 0.03; [0.001, 0.79]; p = 0.04) and presence of severe LAA contrast (OR = 188 ; [35.32, 1002.02] ; <0.0001) rather than the atrial arrhythmia itself. Conclusions. Patients referred for ablation with right AFL have a similar risk of LAA thrombi, compared to those with AFib. The risk of LAA thrombi is better related to the presence of valvular prosthesis, CHA^2DS^2-VASc score and LA remodelling than the atrial arrhythmia itself. Accordingly, TEE should be recommended before right AFL ablation, especially in case of a valvular prosthesis, high CHA^2DS^2-VASc score or LA alteration.