

Atrial Function Assessed by Speckle Tracking Echocardiography Is a Good Predictor of Postoperative Atrial Fibrillation in Elderly Patients

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Abstract

Objective Advanced age is an independent predictor of postoperative atrial fibrillation (POAF) in patients undergoing coronary artery bypass surgery. We evaluated whether left atrial (LA) dysfunction assessed by strain contributes to identifying elderly patients prone to POAF. **Methods** Case-control study of 70 subjects undergoing coronary artery bypass surgery. Clinical and laboratory characteristics were recorded at baseline and 72 hours after surgery. Echocardiography was performed during the preoperative period; LA dimensions and deformation by strain (systolic wave [LASs]) as well as strain rate (systolic wave [LASRs] and atrial contraction wave [LASRa]) were assessed. **Results** Postoperative atrial fibrillation occurred in 38.5% of patients within the first 72 hours after surgery (28.5% of the younger vs. 48.6% of the older group). Baseline and postoperative inflammatory markers as well as total surgical and aortic clamp time were similar between groups. LA function was markedly impaired in subjects with POAF. Age correlated with LASs, LASRs, and LASRa. These associations remained consistent when subjects 75 years or older were considered separately. Both LASs and LASRa for patients with or without POAF, respectively, were significantly impaired in elderly subjects with POAF. Multivariate analysis provided further evidence that both LASs and age are independent predictors for POAF. **Conclusion** Age-related changes in atrial function preceding atrial dilation are evident only upon LA strain analysis. LA strain impairment is an independent predictor of POAF irrespective of age and may serve as a surrogate marker for biological processes involved in establishing the substrate for POAF..