

isolated TAVI can acutely improve coronary flow and myocardial mechanics remains incompletely defined. **Methods:** We consecutively enrolled 22 high-risk patients with severe AS undergoing TAVI (12 men; age 60-85 years, mean 73.06±6.39). Intra-procedural transesophageal echocardiography (TEE) was used to acquire pulsed-wave Doppler spectra from the proximal left anterior descending artery (LAD) and proximal right coronary artery (RCA) before and immediately after valve deployment, with an identical probe position and insonation angle maintained. Peak velocity and velocity-time integral (VTI) were measured separately for diastolic and systolic phases. Two-dimensional speckle-tracking strain was analyzed offline (QLAB 13.0) from mid-esophageal apical views (4-, 2-, and 3-chamber) and a descending aortic short-axis view. The prespecified primary endpoint was the change in systolic coronary flow (peak velocity and VTI); strain measures were secondary/exploratory outcomes. Paired pre-post comparisons were performed. **Results:** 1. Diastolic coronary flow did not change significantly after TAVI. In contrast, systolic coronary flow increased: LAD systolic peak velocity 25.15±9.98 to 32.40±15.52 (p=0.039) with a trend toward higher LAD systolic VTI (5.45±3.11 to 6.99±3.67, p=0.0646); RCA systolic peak velocity increased from 23.80±10.37 to 26.93±9.38 (p=0.0456), and RCA systolic VTI increased from 4.59±2.37 to 6.00±2.63 (p=0.0097). 2. Global LV longitudinal strain (absolute value) improved (GLS-Avg: -13.00±4.41% to -15.39±5.77%, p=0.028), with significant improvements in GLS-4C (p=0.0448) and GLS-2C (p=0.0319) and a trend in GLS-3C (p=0.0594). Segmental strain increased in the LAD territory (GLS-LCA: -14.63±7.53% to -16.83±9.20%, p=0.0018) with a trend in the RCA territory (GLS-RCA: -11.60±3.45% to -13.39±4.65%, p=0.0591). 3. Descending aortic radial strain was unchanged (S-DAO: 4.60±2.19% to 4.34±2.31%, p=0.6521). **Conclusions:** In this intra-procedural TEE study, isolated TAVI was associated with an immediate increase in systolic coronary flow and improved LV longitudinal strain, while diastolic coronary flow remained unchanged. These findings support a rapid hemodynamic effect of valvular relief on coronary flow patterns and myocardial mechanics during TAVI.

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Echocardiographic Parameters and Aortic Valve Calcium Score in Patients with Normal Flow Low Gradient Aortic Stenosis Undergoing TAVI

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Background: Normal flow low gradient (NFLG) aortic stenosis (AS) is characterized by discordant findings on transthoracic echocardiography (TTE), making it challenging to determine the true degree of AS and timing of valve intervention. Prior studies suggest that progression of NFLG AS resembles that of moderate AS. This study aims to evaluate the relationship between invasive mean gradient and non-invasive markers including echocardiographic parameters and CT aortic valve calcium (AVC) scoring in patients with NFLG AS undergoing transcatheter aortic valve implantation (TAVI). **Methods:** All patients with NFLG AS (defined as max velocity <4 m/s, mean gradient <40 mmHg, aortic valve area <1 cm², and stroke volume index >35 ml/m²) who underwent TAVI at a tertiary care center in central Massachusetts between 2021 and 2025 were included. Invasive mean gradient obtained during TAVI was used to classify patients as high gradient or low gradient AS and was compared to pre-procedure TTE and CT parameters. **Results:** 70 patients were included. The average age was 80 and 61% were male. 20 (29%) patients had invasive mean gradient >40mmHg, classifying them as high gradient AS. Patients with high versus low gradient AS had similar echocardiographic parameters including dimensionless index (0.27 vs 0.28), aortic valve area (0.96 vs 0.96 cm²), aortic valve area index (0.50 vs 0.52 cm²/m²), mean gradient (36 vs 32 mmHg), and max velocity (3.77 vs 3.60 m/s). Average AVC score was significantly higher in patients with high compared to low gradient AS in both men (2967 vs 2253 AU, p=0.038) and women (2388 vs 1458 AU, p=0.041). The optimal AVC score cutoff for diagnosing high gradient AS was >2500 AU in men (sensitivity 0.86, specificity 0.70, PPV 0.43, NPV 0.95) and >1300 AU in women (sensitivity 0.91, specificity 0.40, PPV 0.45, NPV 0.89). **Conclusion:** In patients with NFLG AS undergoing TAVI, the majority demonstrate echocardiographic parameters consistent with moderate AS. However, 29% exhibit an invasive mean gradient in the severe range, underscoring limitations of echocardiographic assessment in this population. Higher CT-derived AVC scores were associated with severe AS based on invasive hemodynamics, supporting the role of AVC scoring as an adjunctive tool to reclassify select patients from moderate to severe AS. Incorporating AVC scoring into clinical evaluation for patients with NFLG AS may improve diagnostic accuracy and help optimize timing and selection for valve intervention.

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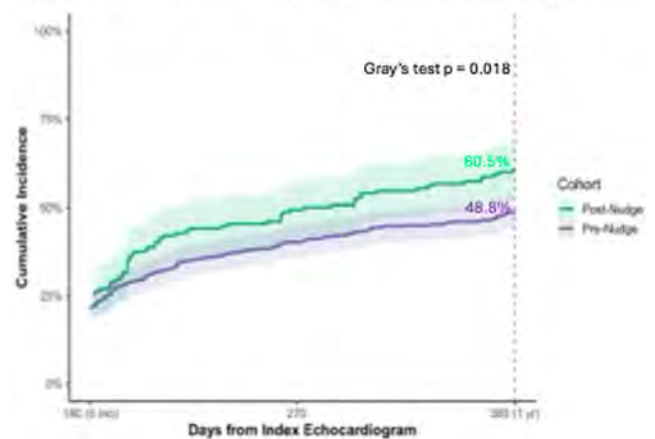
Effect of an Echocardiography Report-Embedded Nudge on Guideline-Recommended Surveillance Echocardiography in Asymptomatic Severe Aortic Stenosis

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Background: Guidelines recommend surveillance echocardiography within 6-12 months after diagnosis of severe aortic stenosis (sAS) in asymptomatic patients; however, adherence to recommended follow-up remains inconsistent. We evaluated whether an automated, non-interruptive nudge embedded within the first echocardiogram reports (index echo) diagnosing sAS was associated with improved rates of guideline-recommended follow-up echocardiography. **Methods:** We conducted a pre-post study of adults (2019-2024) with sAS identified on index echo at a large academic center. A non-interruptive automated nudge prompting guideline-recommended follow-up was im-

plemented within index echo reports. Symptomatic patients, patients who underwent aortic valve replacement (AVR) within 6 months, and patients who underwent AVR between 6-12 months prior to any follow-up echo were excluded. The primary outcome was documentation of follow-up echo between 6 and 12 months. Death was treated as a competing event, and cumulative incidence functions were estimated using the Fine-Gray method. Differences between cohorts were assessed using Gray's test. **Results:** Among 747 patients with asymptomatic AS at index echo, 619 patients (467 pre-nudge; 152 post-nudge; mean age 78 years; 56% male; 79% White, 13% Black) were included in the final analysis cohort after excluding of patients who received AVR. Baseline age, sex, race, and major comorbidities did not differ between the cohorts. Guideline-recommended surveillance echo within 6-12 months occurred more frequently in the post-nudge cohort than in the pre-nudge cohort (38.2% vs 30.8%; absolute difference 7.4%). In competing-risk analysis accounting for mortality, the 1-year cumulative incidence of follow-up echo was significantly higher after nudge implementation compared with before (60.5% vs 48.8%; Gray's test p = 0.018), with no difference in the cumulative incidence of death. **Conclusion:** An automated, non-interruptive echo report-embedded nudge was associated with improved adherence to guideline-recommended surveillance echocardiography among asymptomatic patients with sAS, after accounting for competing mortality. Reporting-based nudges may represent a scalable strategy to improve longitudinal surveillance in patients with aortic stenosis.

Cumulative incidence of guideline-recommended surveillance echocardiography before and after a report-embedded nudge, accounting for competing mortality.



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Strain Based Right Ventricular to Pulmonary Artery Coupling Improves Risk Stratification after Transcatheter Aortic Valve Replacement

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Background: The prognostic role of right ventricular-pulmonary artery (RV-PA) coupling after transcatheter aortic valve replacement (TAVR) is incompletely defined. We evaluated whether a strain-based coupling metric, right ventricular free-wall longitudinal strain to

