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**Early and Late Leaflet Thrombosis after
Transcatheter Aortic Valve Replacement**

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Abstract

Background:

The occurrence and clinical impact of untreated subclinical leaflet thrombosis beyond 1 year after transcatheter aortic valve replacement still remain unclear.

Methods and results:

In a multicenter transcatheter aortic valve replacement registry, we analyzed data from 485 patients who underwent 4-dimensional multidetector computed tomography post-transcatheter aortic valve replacement performed to survey hypoattenuated leaflet thickening with reduced leaflet motion compatible with thrombus at a median of 3 days, 6 months, 1 year, 2 years, and 3 years. Incidence, predictors, and clinical outcomes of early (median 3 days) and late (>30 days) leaflet thrombosis were assessed. Additional anticoagulation was not administered because of subclinical findings at the time of computed tomography in all patients. Early leaflet thrombosis occurred in 45 (9.3%) of 485 patients. Mean pressure gradient at discharge was higher in patients with early leaflet thrombosis than in those without. Independent predictors of early leaflet thrombosis in balloon-

expandable prostheses were low-flow, low-gradient aortic stenosis, severe prosthesis-patient mismatch, and 29-mm prostheses. No predictors could be identified for self-expanding prosthesis. Cumulative event rates of death, stroke, or rehospitalization for heart failure over 2 years were 10.7% and 16.9% in patients with and without early leaflet thrombosis, respectively ($P=0.63$). Late leaflet thrombosis occurred late up to 3 years, and male sex and paravalvular leak less than mild were independent predictors.

Conclusions:

Untreated early leaflet thrombosis did not affect the cumulative event rates of death, stroke, and rehospitalization for heart failure. Late leaflet thrombosis was newly detected during 3-year follow-up. Visual Overview: A visual overview is available for this article.

Keywords:

Aortic valve stenosis; heart failure; multidetector computed tomography; thrombosis; transcatheter aortic valve replacement.

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Observational Study

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