PLANNED INITIAL TRANSAPICAL APPROACH VERSUS ANTEGRADE TRANSSEPTAL OR RETROGRADE TRANSAORTIC APPROACHES FOR SEPTAL AND POSTERIORLY-LOCATED MITRAL PARAVALVULAR LEAK CLOSURE

I2 Poster Contributions
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Authors: Chad Kliger, Bryce Einhorn, Yuriy Dudiy, Vladimir Jelnin, Carmen Medina-Palomo, Gila Perk, Howard Cohen, Itzhak Kronzon, Carlos Ruiz, Lenox Hill Heart and Vascular Institute, New York, NY, USA

Background: Paravalvular leak (PVL) is a complication following surgical valve replacement, most frequently originating around implanted mitral valves in over 80% of cases. Multiple approaches to percutaneous mitral PVL closure are currently used including antegrade transseptal (TS), retrograde transaortic (TAo), and transapical (TA). Posteroseptal and laterally-located mitral PVLs (1 to 6 o’clock position), as opposed to anterior and anterolaterally-located mitral PVLs (6 to 1 o’clock position), are technically more challenging. TS approach to posteroseptal defects requires precise puncture and a high-degree of device flexion whereas the TAo approach necessitates negotiation of the acute angle between the aortic valve and the PVL. Evaluation of approaches to mitral PVL closure based on location has not been previously performed.

Methods: We reviewed patients presenting to our center with mitral PVLs to assess an initial approach strategy for treatment of these patients. In a series of 51 patients with 65 percutaneous mitral PVL closures, posteroseptal closure was attempted in 28 cases and anterolateral closure in 37 cases.

Results: Posteroseptal mitral PVL closure using a TA approach was technically successful in 84.2% of cases compared to 66.6% in TS and TAo approaches (p=.15). Fluoroscopy times were significantly different between approaches (TA mean 33.2 ± 22min vs. TS/TAo mean 58.7 ± 32min, p=.03). Successful closure of anterolateral mitral PVLs using a TA approach was 88.8% compared to the TS/TAo approach of 63% (p=.07). Mean fluoroscopy times for closure of anterolateral leaks were similar between the approaches (TA 37.8 ± 24min, TS/TAo 44.4 ± 26min, p=.45).

Conclusions: For both posteroseptal and anterolateral mitral PVL locations, a planned initial TA approach has a trend to higher technical success when compared with the TS and TAo approaches. However for posteroseptal mitral PVLs, a planned initial TA approach significantly reduces fluoroscopic times compared to TS and TAo approaches. Further study in the percutaneous treatment of PVL patients is necessary.