Kantonsspital St.Gallen

Mitral annular disjunction in patients with severe aortic stenosis: Extent and reproducibility of measurements with computed tomography

T Tsianaka,I Matziris,A Kobe,A Euler,N Kuzo,L Erhart,Sebastian Leschka,R Manka,A M Kasel,F C Tanner,H Alkadhi & M Eberhard

Objectives
To determine with CT the prevalence and extent of mitral annular disjunction (MAD) in patients undergoing transcatheter aortic valve replacement (TAVR) and its association with mitral valve disease and arrhythmia.

Methods
We retrospectively evaluated 408 patients (median age, 82 years; 186 females) with severe aortic stenosis undergoing ECG-gated cardiac CT with end-systolic data acquisition. Baseline and follow-up data were collected in the context of a national registry. Two blinded, independent observers evaluated the presence of MAD on multi-planar reformations. Maximum MAD distance (left atrial wall-mitral leaflet junction to left ventricular myocardium) and circumferential extent of MAD were assessed on CT using dedicated post-processing software. Associated mitral valve disease was determined with echocardiography.

Results
7.8 % (32/408) of patients with severe aortic stenosis had MAD. The maximum MAD was 3.5 mm (interquartile range: 3.0-4.0 mm). The circumferential extent of MAD comprised 34 ± 15 % of the posterior and 26 ± 12 % of the entire mitral annulus. Intra- and interobserver agreement for the detection of MAD on CT were excellent (kappa: 0.90 ± 0.02 and 0.92 ± 0.02). Mitral regurgitation ($p = 1.00$) and severe mitral annular calcification ($p = 0.29$) were similarly prevalent in MAD and non-MAD patients. Significantly more patients with MAD (6/32; 19 %) had mitral valve prolapse compared to those without (6/376; 2 %; $p < 0.001$). MAD was not associated with arrhythmia before and after TAVR ($p > 0.05$).

Conclusions
Using CT, MAD was found in 7.8 % of patients with severe aortic stenosis, with a higher prevalence in patients with mitral valve prolapse. We found no association of MAD with arrhythmia before or after TAVR.

Kantonsspital St.Gallen

type	journal paper/review (English)
date of publishing	09-03-2021
journal title	Eur J Radiol Open (8)
ISSN print	2352-0477
pages	100335