

Background

- Preliminary reports have suggested the role of aortic valve annular calcium in independently predicting pacemaker implantation after transcatheter aortic valve replacement (TAVR).
- Data regarding role of calcium in the aortic-valvular complex on pacemaker dependency is lacking.

Purpose

- To investigate the relationship between aortic valvular calcium and pacemaker dependency

Methods

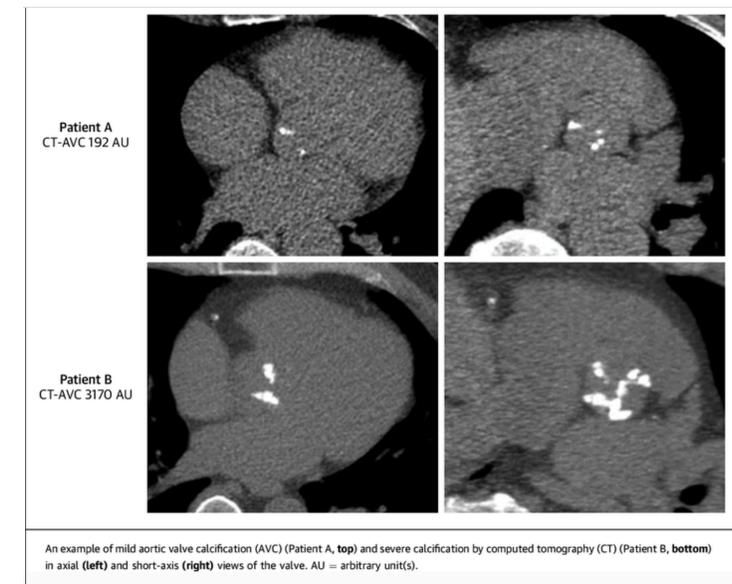
- We conducted a retrospective single center study at our tertiary care center including patients who had new pacemaker implantation after TAVR procedure (n=47).
 - Standard calcium scoring software was used to demarcate and quantify the calcium along the aortic cusps and subvalvular region and dichotomized into septal and non-septal based on proximity to the interventricular septum.
- Standard statistical tests were used for analysis with two-sided p value <0.05 considered significant.

Results

- Mean age was 78.6 ± 10.3 years and females were 42.6%
- Patients with progression to complete heart block (CHB) during index admission had significantly higher non-septal volume (650 mm³ vs 344 mm³, p=0.01) and score (892 vs 485, p=0.01)
- High burden of RV pacing (>40%) was associated with lower septal calcium score (989 vs 552, p= 0.03) and volume (717 mm³ vs 385 mm³, p=0.03) within 3 months of TAVR
- Septal calcium parameters were not predictive of RV pacing burden or progression to CHB.

Conclusion

- Quantitative calcium in the non-septal and septal regions were predictive of early progression to CHB and higher burden of RV pacing, respectively
 - Larger scale studies on calcium distribution and burden should be performed to validate our findings



Doris MK, Everett RJ, Shun-Shin M, Clavel MA, Dweck MR. The Role of Imaging in Measuring Disease Progression and Assessing Novel Therapies in Aortic Stenosis. JACC Cardiovasc Imaging. 2019 Jan;12(1):185-197. doi: 10.1016/j.jcmg.2018.10.023. PMID: 30621990; PMCID: PMC6323414.

