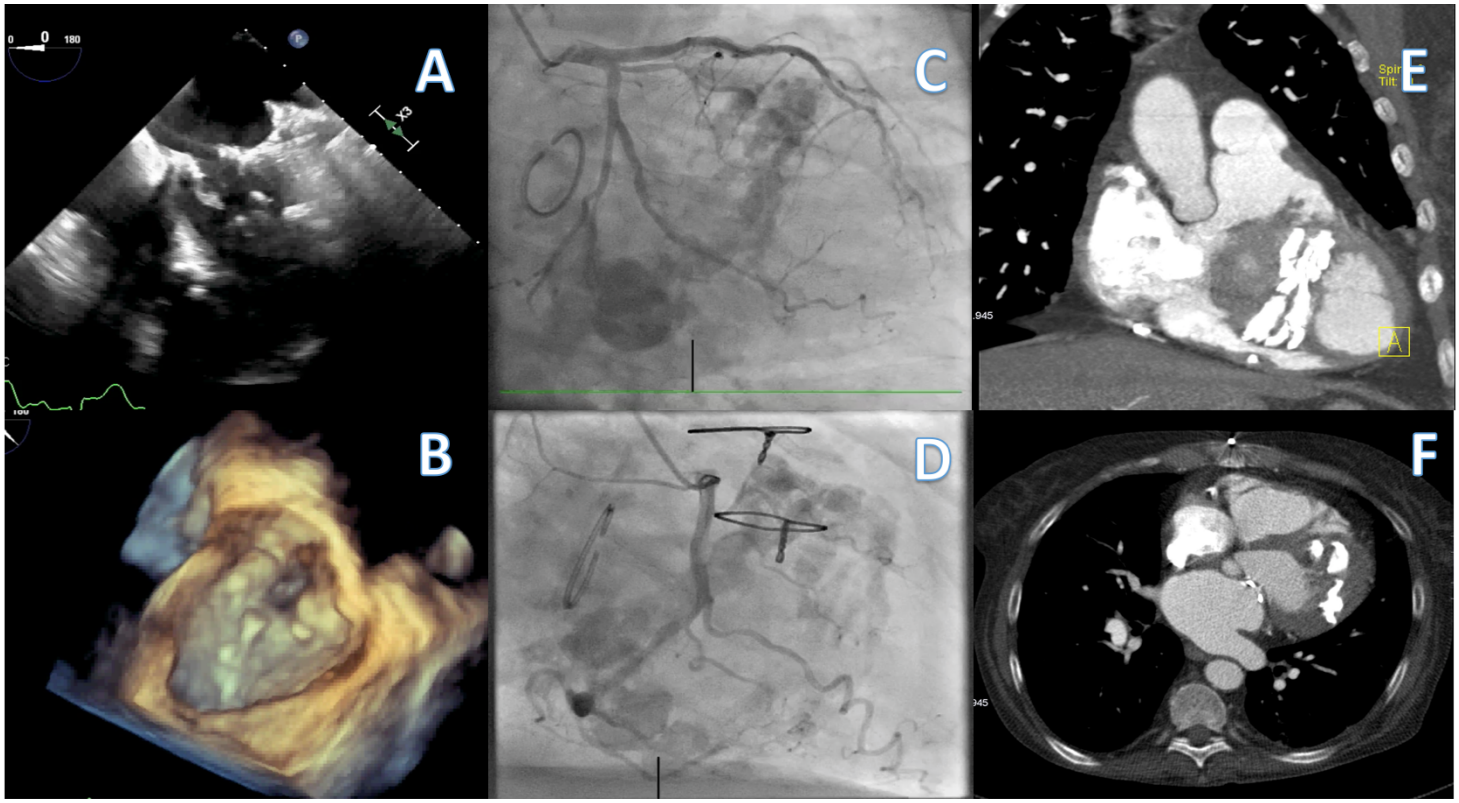
Severe Intramyocardial Calcification: More Than Just Mitral Annular Calcification

Background: Intramyocardial calcification extending outside mitral annulus is an uncommon phenomenon. It is associated with complications of arrhythmia, heart failure and sudden cardiac death.[1]

Case: A 57-year-old female with history of Renal Failure (RF) s/p bilateral renal transplant, Coronary Artery Disease, primary degenerative mitral valve (MV) insufficiency s/p repair was referred to our valve clinic for assessment of MV stenosis. She had several heart failure admissions. Echocardiogram showed severe mitral stenosis and grade III diastolic dysfunction. Cardiac catheterization showed severe two-vessel disease and severe mitral annular calcification extending into the mid myocardium. 3D transesophageal echocardiogram showed MV area of 0.9 cm2 by planimetry. CT chest showed extensive myocardial calcification. Viral and rheumatologic testing was negative. Unfortunately, prior to planned percutaneous MV replacement she was admitted to an outside hospital for heart failure exacerbation where she passed away.

Discussion: Three different mechanisms have been described for intramyocardial calcification.[1] Dystrophic, in previously diseased myocardium creating a calcium-philic surface.[2] Metastatic, from abnormal calcium-phosphate metabolism due to RF and hyperparathyroidism.[3] Pericarditic, pericarditis related calcification extending into myocardium seen in tuberculosis, connective tissue disorders or viral etiology.[4]

Conclusion: Our patient appears to have a combined picture of dystrophic from her previous surgery and Coronary artery disease and metastatic calcification from Renal failure. This probably led to severe diastolic dysfunction and mitral valve stenosis, contributing to her morbidity and mortality.



Severe Mitral stenosis noted on 3D TEE image (B). Severe MAC and Intramyocardial Calcification extending into mid Left ventricle as seen on TEE (A), Cardiac Catheterization (C,D) and CT chest (E,F).

References:

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