AMSER Case of the Month December 2023

67yoF with history of suspected cardiac mass presenting with increasing dyspnea

Ashish Nicodemus, MS4
Pal Suranyi, MD, PhD
William Magin, MD
Medical University of South Carolina

Patient Presentation

- PMH
  - History of cardiac lesion, hypertrophic cardiomyopathy, TIA, and T2DM
- HPI
  - Previous scans suggested a calcified amorphous tumor on heart MRI
  - Taken to OR in 2021 for open cardiotomy and exploration
    - No exophytic mass identified or resectable pathology
  - Endorses mild dyspnea on exertion and fatigue which has been progressively getting worse

Patient Presentation

- Vitals
  - BP: 128/49
  - Pulse: 92 bpm
  - Respiratory rate: 16
  - SPO2: 100%
- Pertinent labs
  - Calcium: 10.7

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 1: **Dyspnea due to suspected valvular heart disease. Ischemia excluded. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
US echocardiography transthoracic resting	Usually Appropriate	O
Radiography chest	Usually Appropriate	☢
US echocardiography transesophageal	May Be Appropriate	O
US echocardiography transthoracic stress	May Be Appropriate	O
CT heart function and morphology with IV contrast	May Be Appropriate	☢☢☢☢
MRI heart function and morphology without and with IV contrast	May Be Appropriate	O
MRI heart function and morphology without IV contrast	May Be Appropriate	O
Arteriography coronary with ventriculography	Usually Not Appropriate	☢☢☢
CT coronary calcium	Usually Not Appropriate	☢☢☢

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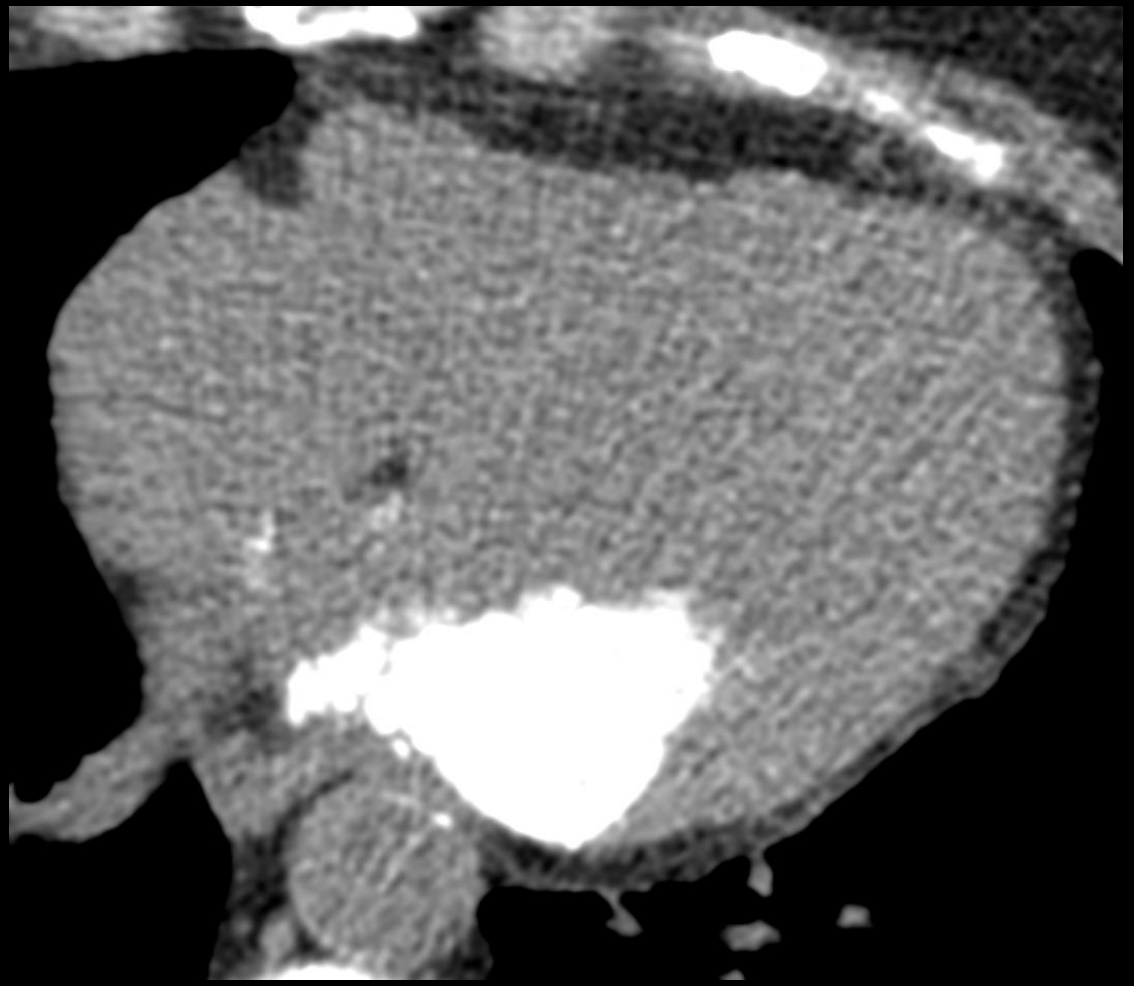
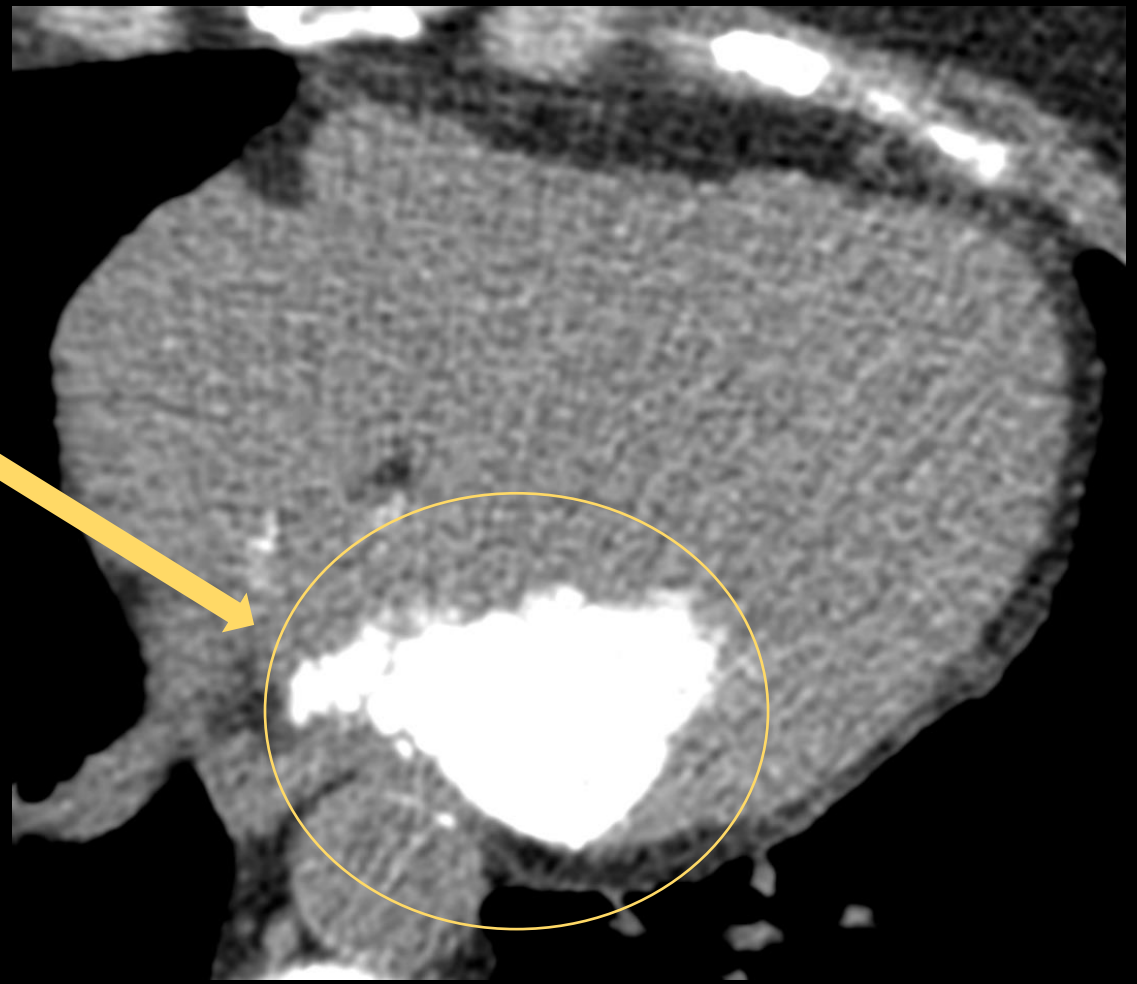
Findings (unlabeled)



Findings (labeled)

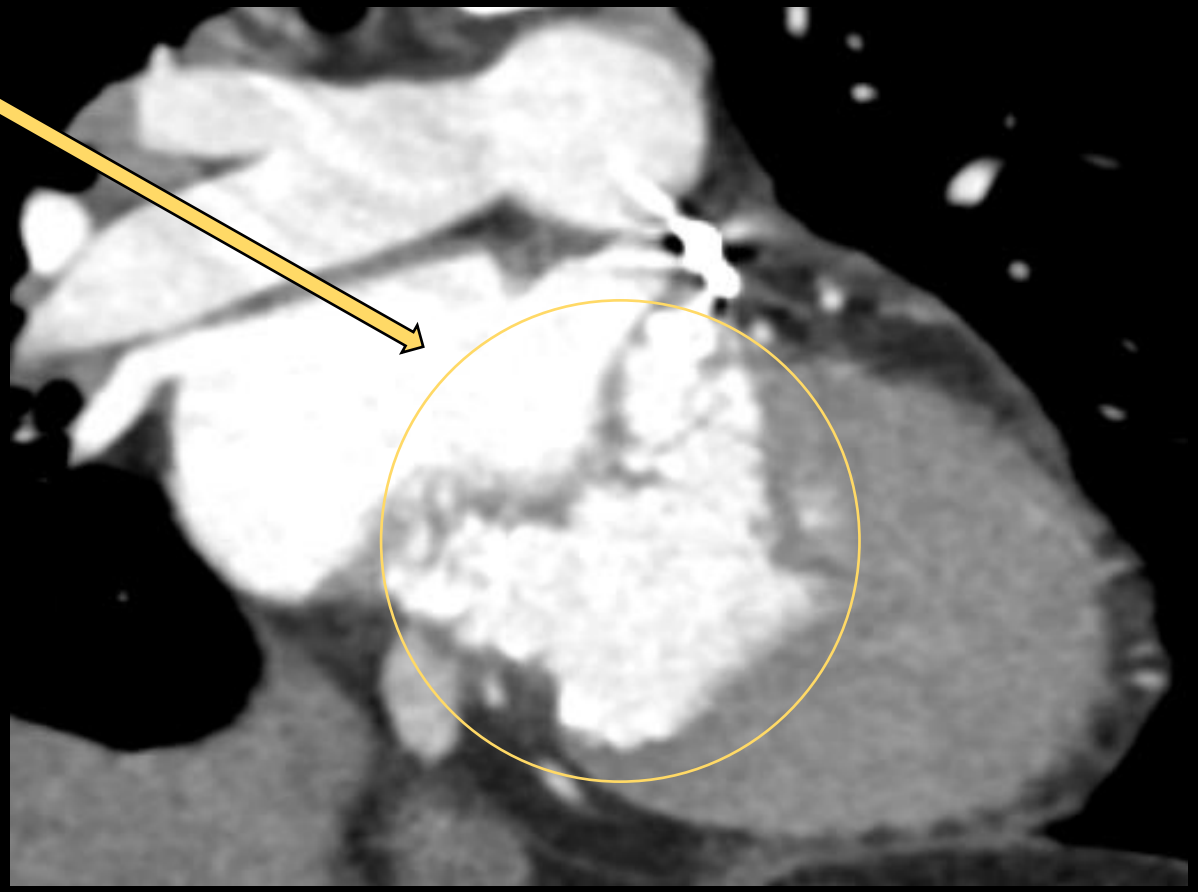
Dense calcification near mitral valve



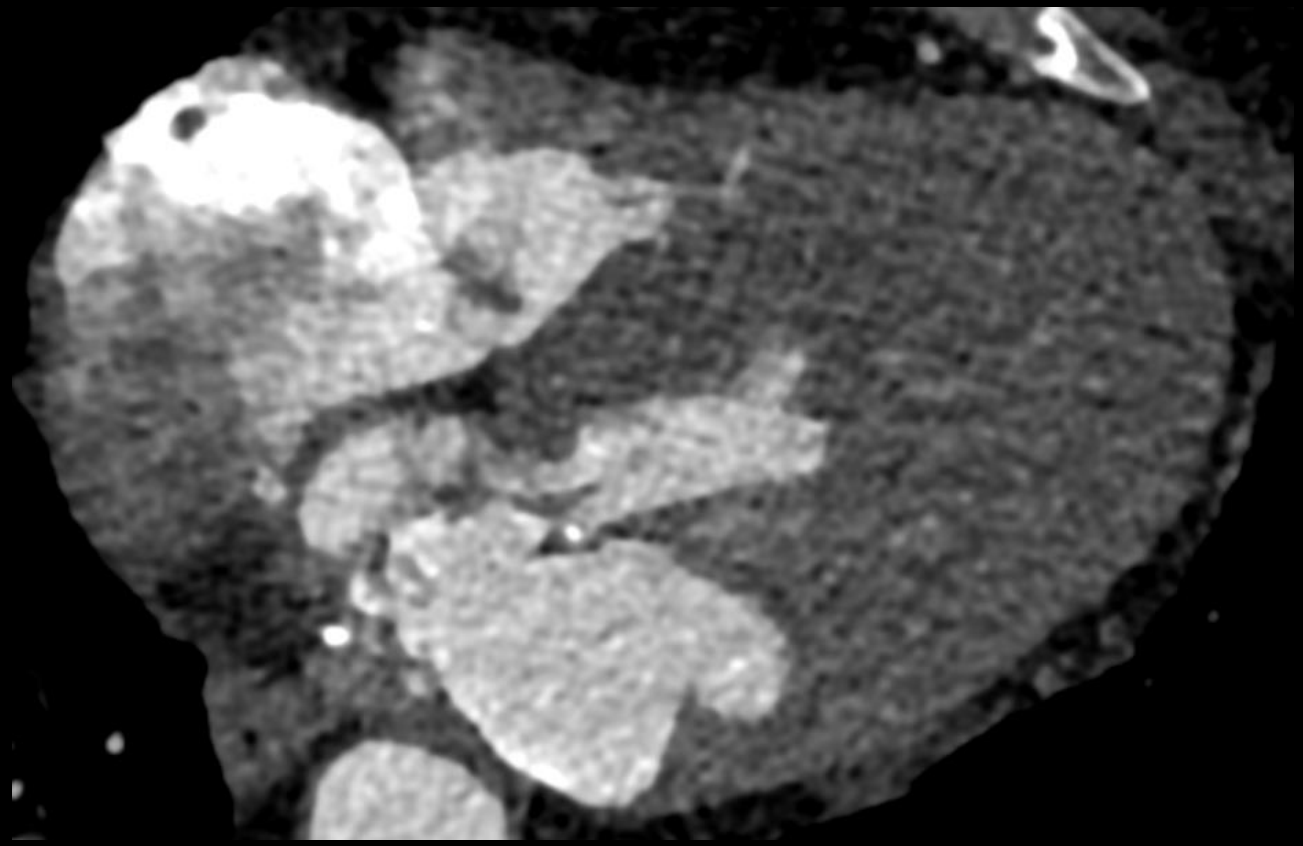
Findings (unlabeled)

Findings (labeled)

Dense calcification at base of LV posterior lateral wall

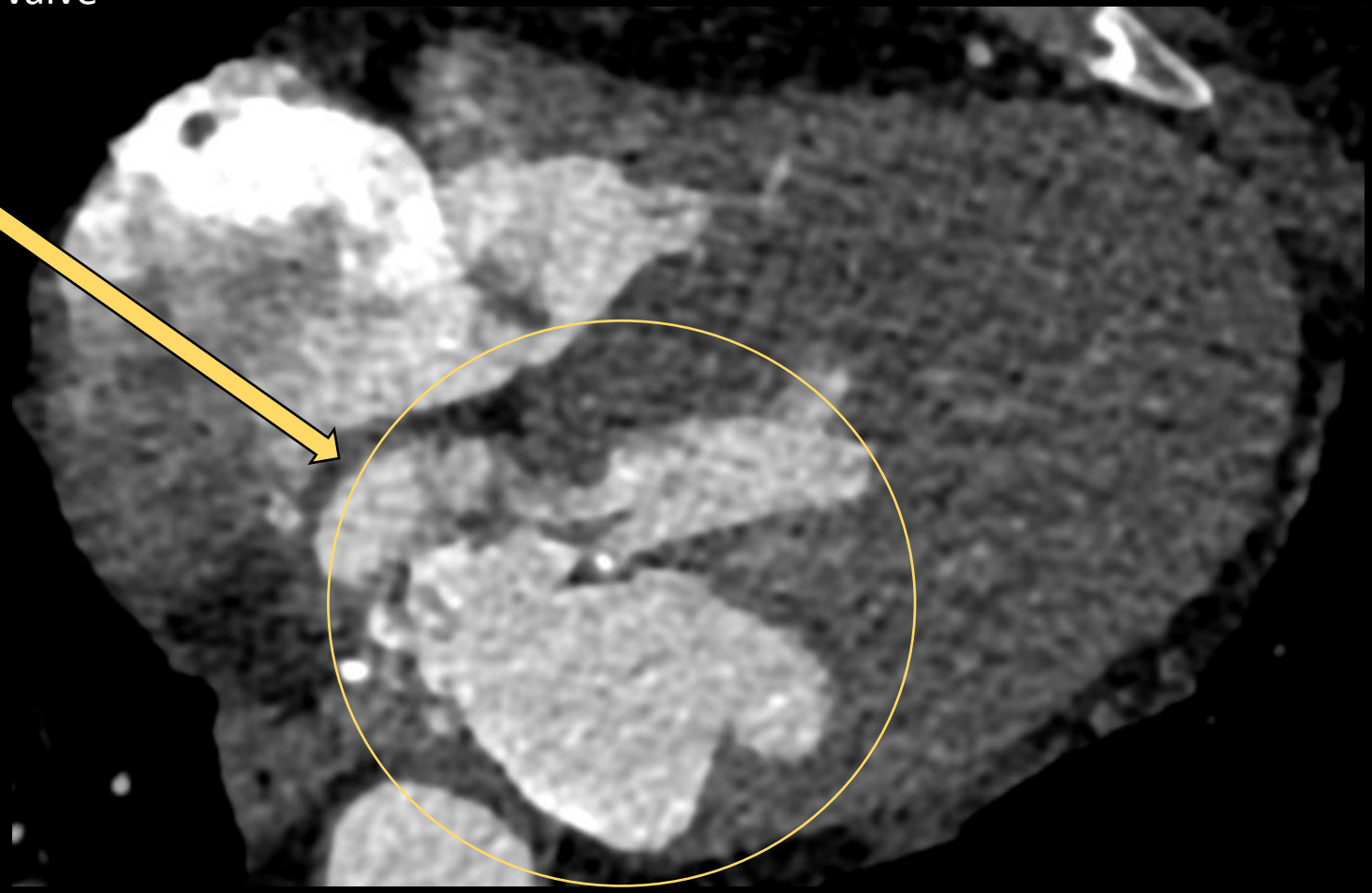


Findings (unlabeled)



Findings (labeled)

Lesion extending from inferior aspect of LV below mitral valve into LA



Final Diagnosis

Caseous Calcification Of The Mitral Annulus

Findings and Plan

- Lesion extends from the posterior LA wall across AV groove into posterior LV wall
- Coronary sinus is wrapped but not constricted
- Severe HOCM and apical infarct
- Lesion has grown significantly since previous imaging in 2021
  - Very likely to be unresectable

Case Discussion: Caseous Calcification

- Caseous mitral annular calcification is a very rare finding
  - Mostly found in patients > 60 years of age
  - Autopsy findings reveal caseous calcification in 2.7% of patients with mitral annular calcification
- Symptoms are often due to obstruction of normal cardiac blood flow
  - Symptoms can also arise due to distal embolization of calcified fragments
- Associated conditions
  - Hypertension
  - Atrial fibrillation
  - Hypercholesteremia
- Presentation
  - These lesions are often asymptomatic at presentation
  - Rarely, patients report dyspnea, palpitation, and syncope

Case Discussion: Caseous Calcification

- Diagnosis
  - Cardiac imaging, especially echocardiography and CT are often used in conjunction to diagnose
  - Cardiac MRI can add additional information in differentiation of these lesions
- Treatment
  - If ventricular filling is not compromised, most patients can be treated medically
  - Surgical resection
    - These lesions have a high risk for embolization and growth
    - Clinical and imaging follow-up is vital as recurrence can occur due to incomplete resection
    - Mitral valve replacement is preferred over repair

References:

- Feger J, Shah V, Caseous calcification of the mitral annulus. Reference article, Radiopaedia.org (Accessed on 23 Sep 2023) https://doi.org/10.53347/rID-89269
- Elgendy IY, Conti CR. Caseous calcification of the mitral annulus: a review. Clin Cardiol. 2013 Oct;36(10):E27-31. doi: 10.1002/clc.22199. Epub 2013 Aug 27. PMID: 24038099; PMCID: PMC6649616.
- Akram M, Hasanin AM. Caseous mitral annular calcification: Is it a benign condition? J Saudi Heart Assoc. 2012 Jul;24(3):205-8. doi: 10.1016/j.jsha.2012.02.003. Epub 2012 Feb 14. PMID: 23960697; PMCID: PMC3727444.