AMSER Case of the Month
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67yoF with history of suspected cardiac mass presenting with increasing dyspnea

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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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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</thead>
<tbody>
<tr>
<td>US echocardiography transthoracic resting</td>
<td>Usually Appropriate</td>
<td>O</td>
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<tr>
<td>Radiography chest</td>
<td>Usually Appropriate</td>
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<tr>
<td>US echocardiography transesophageal</td>
<td>May Be Appropriate</td>
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<tr>
<td>US echocardiography transthoracic stress</td>
<td>May Be Appropriate</td>
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<tr>
<td><strong>CT heart function and morphology with IV contrast</strong></td>
<td><strong>May Be Appropriate</strong></td>
<td><strong>★★★★★</strong></td>
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<tr>
<td>MRI heart function and morphology without and with IV contrast</td>
<td>May Be Appropriate</td>
<td>O</td>
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<tr>
<td>MRI heart function and morphology without IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>Arteriography coronary with ventriculography</td>
<td>Usually Not Appropriate</td>
<td>★★★★</td>
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<tr>
<td><strong>CT coronary calcium</strong></td>
<td><strong>Usually Not Appropriate</strong></td>
<td><strong>★★★★</strong></td>
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</table>
Findings (unlabeled)
Findings (labeled)

Dense calcification near mitral valve
Findings (unlabeled)
Findings (labeled)

Dense calcification at base of LV posterior lateral wall
Findings (unlabeled)
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