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Anomalous muscle band in the right atrium mimicking thrombus on transthoracic echocardiogram: What is the proper approach in management?

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Case: A 52-year-old female without cardiac risk factors presented with chronic sinus bradycardia, palpitations, and mild shortness of breath. Vital signs and physical exams were unremarkable, except for infrequent PVCs, PACs. EKG revealed sinus bradycardia with right intraventricular conduction delay. 21 days of heart monitoring showed no significant conduction system abnormalities. On 2D echocardiography, a 9x12mm mass was visualized. Further interrogation with transesophageal echocardiogram (TEE) showed an anomalous muscular band (AMB) dividing the right atrium (RA) into left and right cavities with EF of 55-60%. Since the patient had non-specific symptoms without blood flow obstruction, surgical intervention was not indicated.

Literature Review: AMB is recognized as a mass on transthoracic echocardiography. Further evaluation with MRI is preferred for indeterminate cases unless the patient has small structures and calcifications in the heart or other contraindications [1]. Currently, there is no general consensus on how right atrial AMB should be managed. In asymptomatic patients, surgical resection is not indicated [2]. Patients with severe symptoms or interference of the AMB with intracardiac procedures may require surgery [3,4].

Unique aspects: Right atrial AMB is rarely discussed. In addition to the echocardiogram finding, this patient presented with chronic bradycardia. To our knowledge, there is no data on the association between bradycardia and right atrial AMB.

Recommendations: Further studies should investigate whether asymptomatic patients with a right atrial AMB would eventually develop symptoms and require intervention later.

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Conclusions: As cardiac AMB can be mistaken for other masses such as a thrombus or malignancy, the correct diagnosis is important to determine appropriate treatment. Diagnosis of right atrial AMB can be made with TEE. More data is required to determine risks/benefits to early treatment and the relationship between bradycardia and right atrial AMB.