

CLINICAL VIGNETTE

Cardiac Lipoma: Case Report and Review of Literature

Peyman N. Azadani, MD¹ and Renata Stankovic, MD¹

¹Department of Medicine, University of California Los Angeles (UCLA), Los Angeles, California

Case Report

A 55-year-old male presents to clinic with episodes of palpitations. He has prediabetes, hyperlipidemia, and anxiety. ECG showed NSR with possible Q wave in inferior leads (Figure 1) and he was referred to Cardiology. Echocardiogram showed asymmetrical severe septal hypertrophy (Figure 2) concerning for hypertrophic cardiomyopathy. Cardiac magnetic resonance imaging (MRI) revealed a 4 cm mass most consistent with lipoma (Figure 3). To rule out fibrosarcoma an

echo-guided endomyocardial biopsy was performed. Pathology showed normal myocardium consistent with sampling normal myocardium rather than the mass seen on MRI. To evaluate for mass-induced arrhythmias a Zio patch revealed no ventricular tachycardia. Follow-up MRI two years later showed a stable mass (Figure 4). He has remained stable and physically active with excellent functional status and has not experienced any cardiac complications due to the mass.

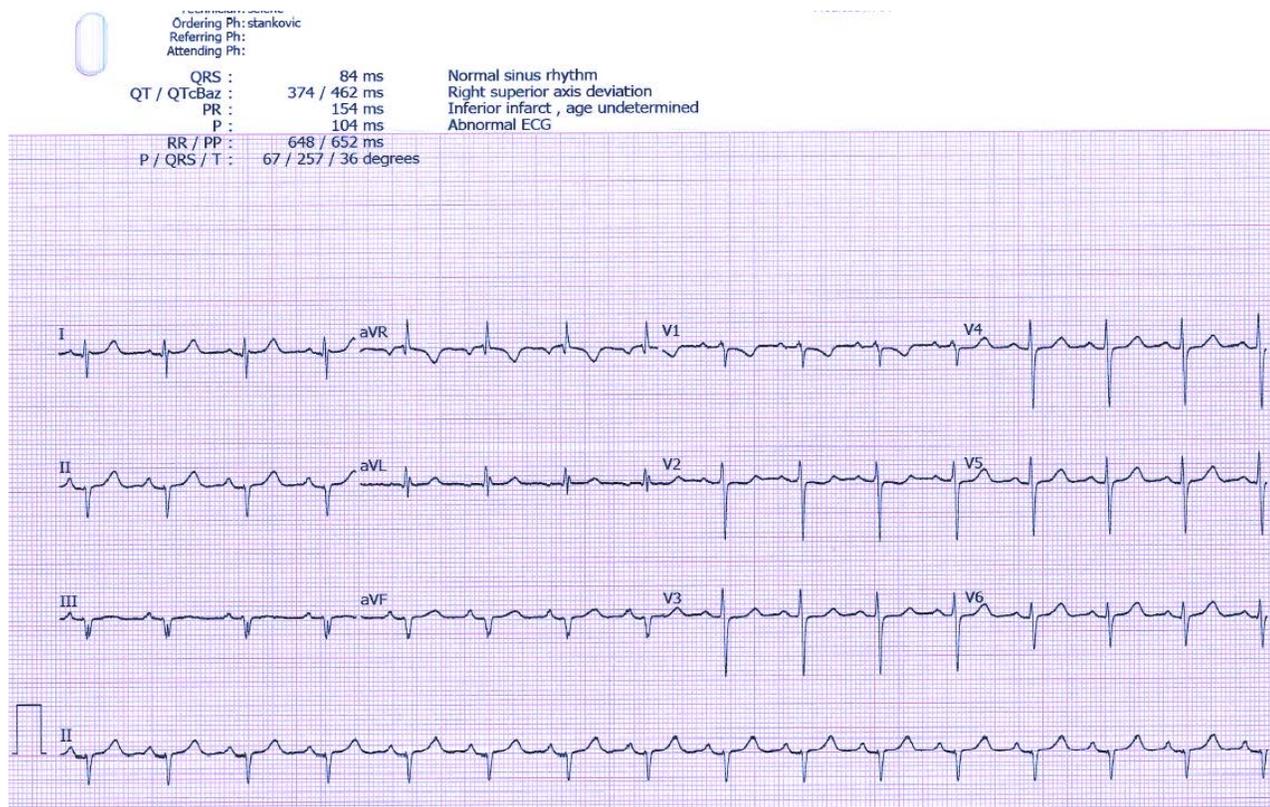


Figure 1. 12 lead ECG with right axis deviation and possible q wave in inferior leads.



Figure 2. Severe septal hypertrophy seen in echocardiogram apical 4 chamber view.

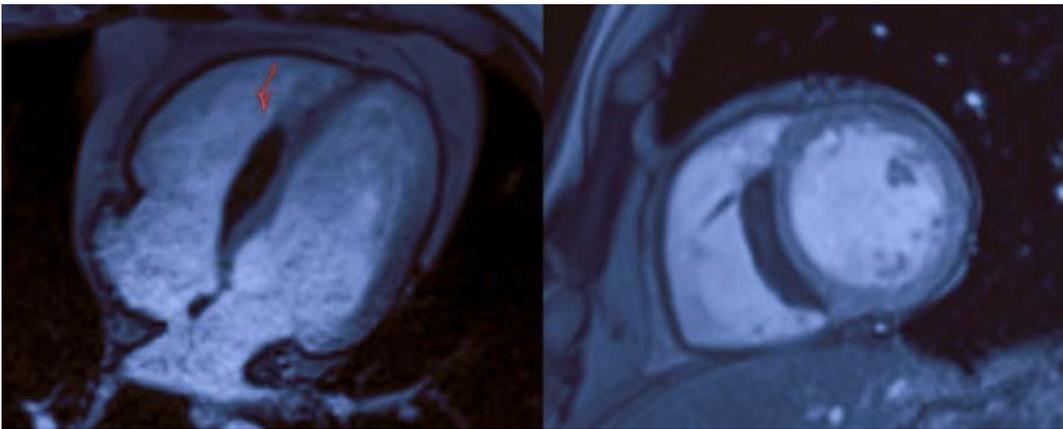


Figure 3. Cardiac MRI 3.9 x 1.2 cm T2-hyperintense lesion along the basal to midcavity interventricular septum facing the right ventricular cavity compatible with intracardiac lipoma.

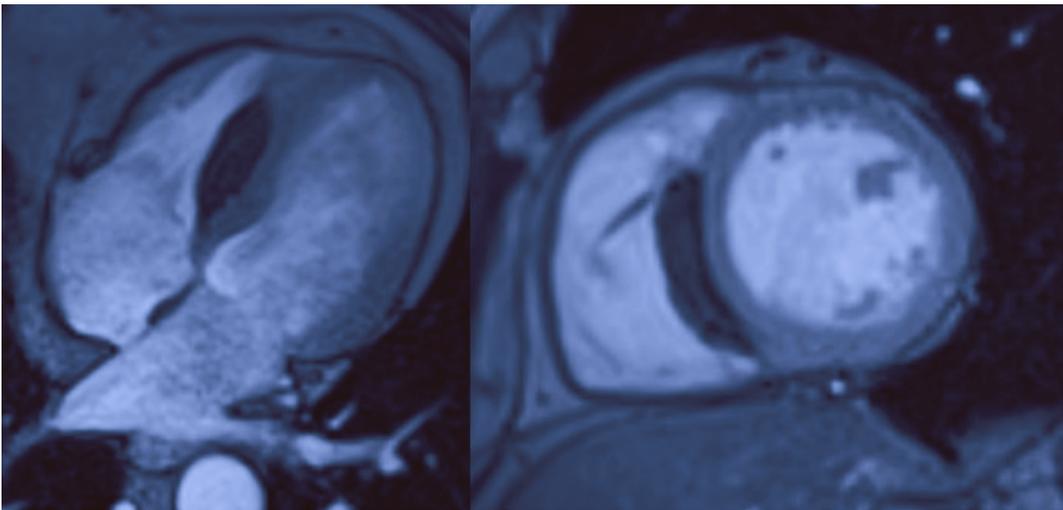


Figure 4. Stable 3.9 x 1.2 cm hyperintense lesion along the basal to mid cavity interventricular septum, facing the right ventricle cavity, compatible with intracardiac lipoma.

Discussion

Cardiac lipomas are very rare cardiac tumors typically found in the fifth and sixth decades of life but can be seen at any age. It affects both genders equally. Cardiac lipomas can originate from subendocardium in around 50% of the cases however they can also originate from subpericardium or from the myocardium.¹ They have been more frequently reported in left ventricle or right atrium. About 2% of tumors are found in the right ventricle as was our patient.² Clinical manifestations depend on tumor size and location with one third of the tumors clinically asymptomatic. Patients may have symptoms range from chest discomfort to cardiac arrest. Patients may be initially asymptomatic with small lesions but later develop compressive or obstructive signs with larger tumors. Intracavitary lesions can cause dyspnea secondary to outflow obstruction and less commonly present with palpitations, chest pain, syncope or sudden cardiac death due to severe arrhythmia or coronary artery occlusion due to the mass effect. These tumors grow locally and very rarely could cause distant emboli. No specific gene mutation has been identified.

The initial diagnostic test for suspected cardiac mass is echocardiography. Echo findings are typically a homogenous hyperechoic mass within cardiac chambers or hypoechoic masses within the pericardium. Although echo is easily obtained and can determine the position and extent of the mass relatively accurately, the mass characteristics cannot be determined based on acoustic properties. Other non-invasive accurate diagnostic methods are cardiac CT and/or MRI. Both of these imaging modalities can differentiate between cardiac lipoma from malignant liposarcoma.

Since this is a very rare disease treatment options are not well established. The literature reports the majority of symptomatic patients underwent resection. Surgical excision of cardiac lipomas has good long-term prognosis.³ Surgery should remove the tumor with the capsule and pedicle to prevent recurrence. Tumor recurrence after resection is extremely rare. Asymptomatic lipomas may grow over time and infiltrate into the myocardium which could lead to unfavorable surgical outcome. Close follow-up with imaging and/or heart rhythm monitoring is recommended for all patients to monitor lipoma growth in asymptomatic patients or recurrence of the tumor after surgery in symptomatic patients.

REFERENCES

1. **Hananouchi GI, Goff WB 2nd.** Cardiac lipoma: six-year follow-up with MRI characteristics, and a review of the literature. *Magn Reson Imaging.* 1990;8(6):825-8. doi: 10.1016/0730-725x(90)90021-s. PMID: 2266812.
2. **Ismail I, Al-Khafaji K, Mutyala M, Aggarwal S, Cotter W, Hakim H, Khosla S, Arora R.** Cardiac lipoma. *J Community Hosp Intern Med Perspect.* 2015 Oct 19;5(5):28449. doi: 10.3402/jchimp.v5.28449. PMID: 26486106; PMCID: PMC4612478.
3. **Shu S, Wang J, Zheng C.** From pathogenesis to treatment, a systemic review of cardiac lipoma. *J Cardiothorac Surg.* 2021 Jan 6;16(1):1. doi: 10.1186/s13019-020-01379-6. PMID: 33407682; PMCID: PMC7788760.