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(CASE STUDY)

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False tendon mimicking a left ventricular mass: A diagnostic insight

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Abstract

A 66-year-old woman underwent evaluation for a suspected left ventricular (LV) mass identified on echocardiography. Subsequent coronary angiography and cardiac magnetic resonance imaging (MRI) revealed a benign fibromuscular structure commonly known as a false tendon extending from the posteromedial papillary muscle to the interventricular septum, accompanied by localized fibrosis. [1, 2, 8] This case highlights the diagnostic value of advanced imaging in differentiating anatomical variants from pathological masses, thereby guiding appropriate clinical management.

Keywords: False tendon; Left ventricular mass; Fibromuscular bands; Echocardiography; Cardiac mass

1. Introduction

False tendons within the left ventricle are fibromuscular bands that traverse the chamber without direct involvement of the mitral valve apparatus. [6, 7] Although typically benign and asymptomatic, their appearance on imaging can mimic pathological entities such as thrombi or tumors. [2, 4] This report presents a case where a false tendon was initially misinterpreted as a mass, underscoring the importance of multimodal imaging in accurate cardiac diagnosis. [1, 3]

2. Case Presentation

2.1. Patient Profile

- Age/Sex: 66-year-old female
- Medical History: Type 2 diabetes mellitus, hypothyroidism
- Recent Hospitalization: Treated for urinary tract infection
- Presenting Concern: Referred for coronary angiography following detection of a suspected LV mass on echocardiography

2.2. Investigations

2.2.1. Coronary Angiography

- Access Site: Right radial artery
- Findings: Normal coronary anatomy with co-dominant circulation
- Conclusion: No evidence of obstructive coronary artery disease

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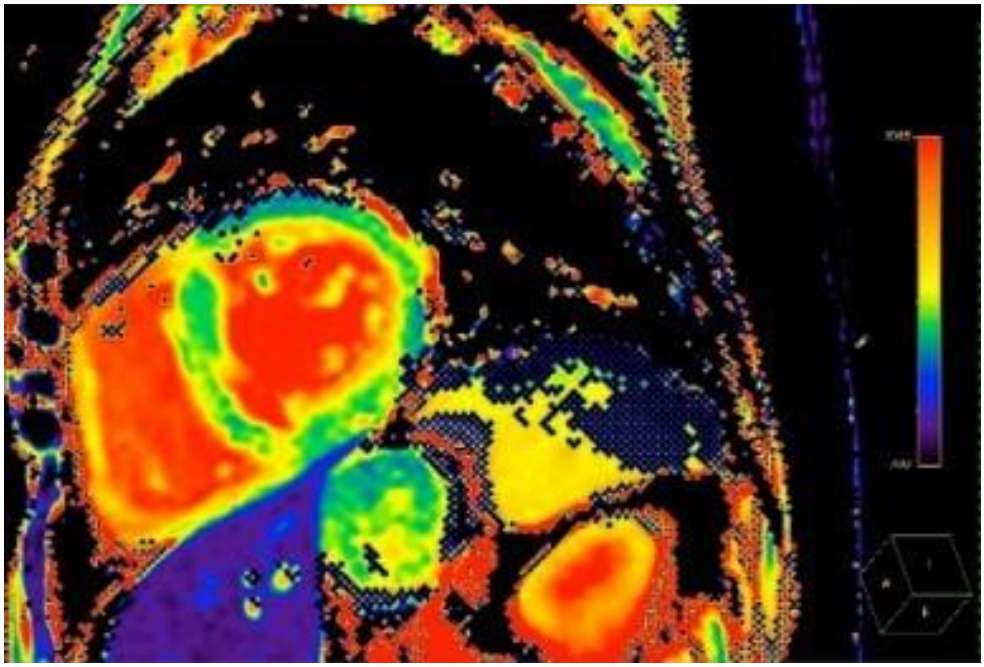

Figure 1 Cardiac magnetic resonance imaging - T1 mapping sequence

Color-coded T1 mapping image of the left ventricle demonstrating elevated native T1 values within the interventricular septum and along the course of a fibrous intracavitary band, consistent with localized myocardial fibrosis. The left ventricular cavity is centrally visualized, surrounded by a gradient of colors corresponding to myocardial tissue relaxation times (color scale displayed on the right). The mapping highlights tissue heterogeneity, with warmer hues (red–orange) indicating prolonged T1 relaxation suggestive of fibrotic changes, and cooler tones (blue–green) representing normal myocardium and blood pool (**Fig. 1**). This advanced parametric imaging aids in differentiating benign anatomical variants, such as false tendons with fibrosis, from pathological intracardiac masses or inflammatory lesions.

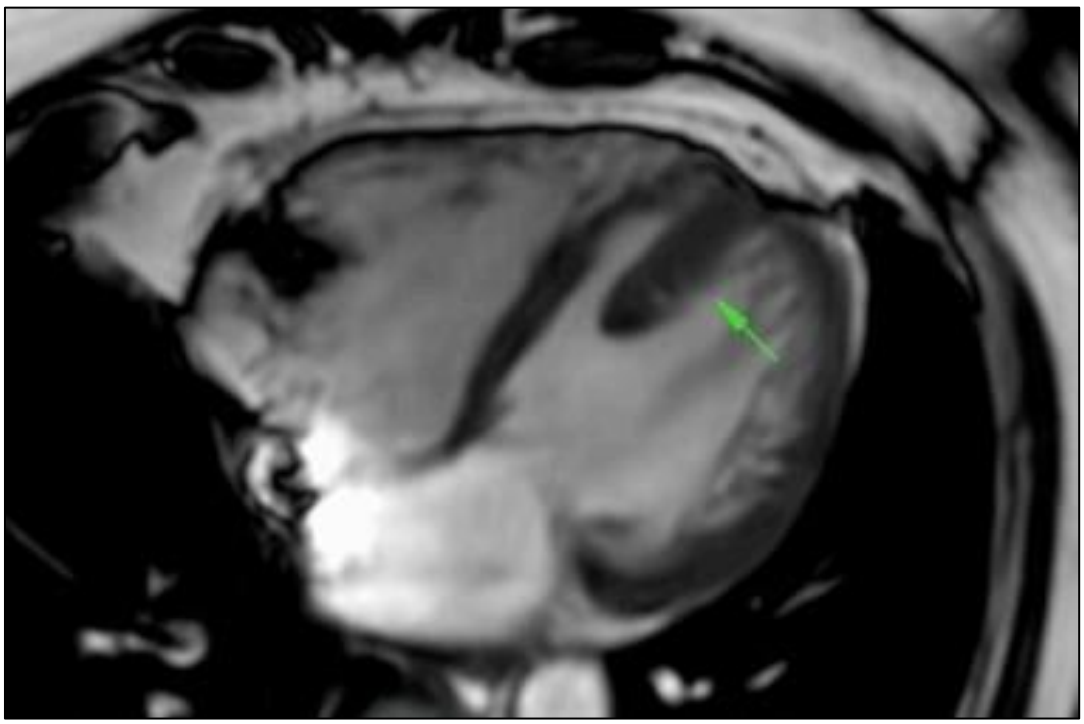

Figure 2 Cardiac magnetic resonance imaging - Four-chamber cine view

Four-chamber cine MRI demonstrating a well-defined linear fibromuscular band (arrow) traversing the left ventricular cavity from the interventricular septum toward the lateral wall. The structure is isointense to surrounding myocardium, with smooth margins and no associated mass effect or distortion of ventricular geometry (**Fig. 2**). The blood pool appears homogenous without signal dropout suggestive of thrombus, and myocardial wall thickness remains within normal limits. The absence of abnormal enhancement or tissue heterogeneity supports the diagnosis of a benign left ventricular false tendon rather than a pathological mass.

2.3. Cardiac MRI

- LV Function: Ejection fraction of 59%; mildly increased chamber volumes
- Wall Motion: Dyskinesia noted in the basal inferior wall and septum
- Tissue Analysis: Elevated native T1 values; patchy mid-myocardial and subepicardial enhancement in the septum and along the false tendon
- **Key Observation:** No signs of thrombus, neoplasm, inflammation, or infarction; presence of a fibrous band consistent with a false tendon

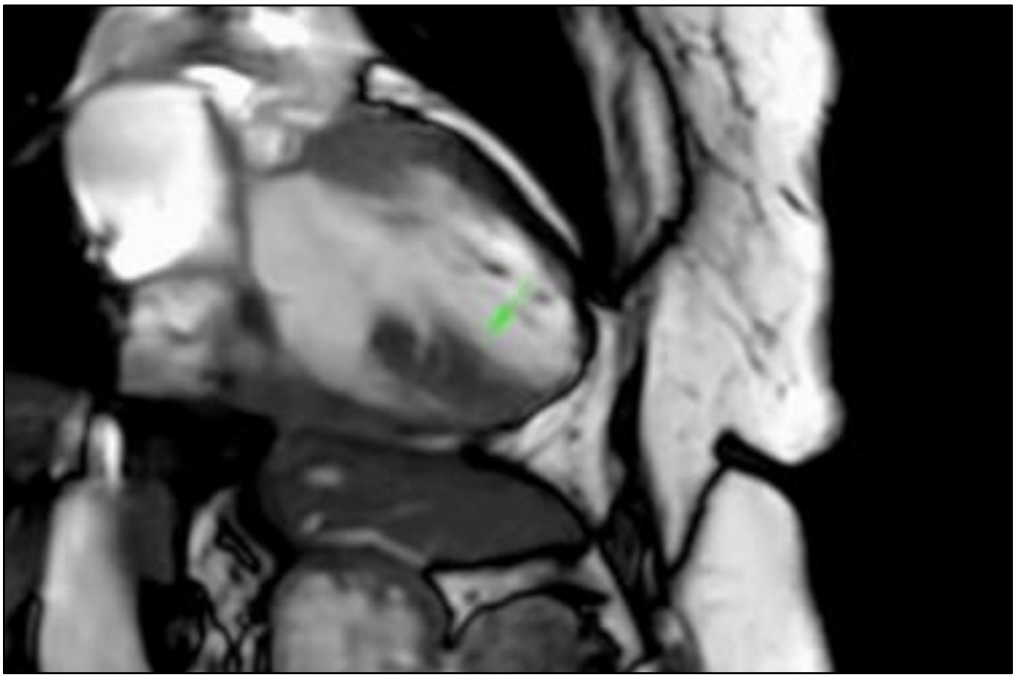

Figure 3 Cardiac magnetic resonance imaging - Two-chamber cine view

Two-chamber cine MRI depicting a slender fibromuscular band (arrow) extending across the left ventricular cavity from the posteromedial papillary muscle toward the interventricular septum. The band is isointense to adjacent myocardium, with no evidence of irregular thickening, signal void, or tissue disruption. Left ventricular wall motion is preserved, and there are no focal contractility abnormalities. The image provides a clear longitudinal perspective, facilitating anatomical localization of the false tendon **(Fig. 3)** and excluding differential diagnoses such as thrombus, neoplasm, or vegetations.

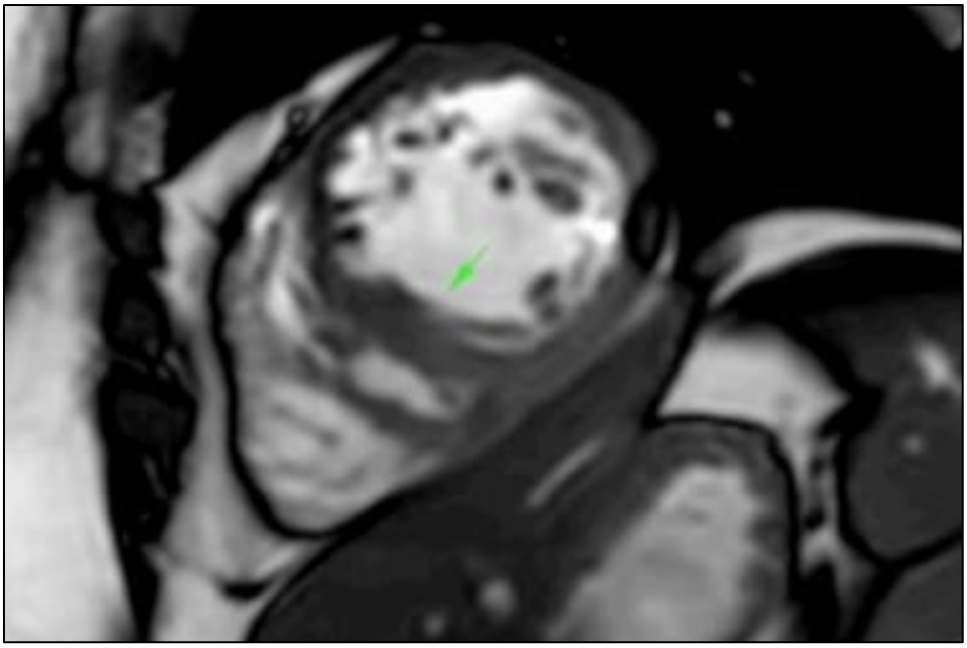

Figure 4 Cardiac magnetic resonance imaging - Short-axis cine view

Short-axis cine MRI demonstrating a linear fibrous band (arrow) traversing the left ventricular cavity, consistent with a false tendon. The structure appears isointense to the myocardium, without abnormal thickening or mass formation. Surrounding myocardial walls exhibit normal thickness and contractility, with no regional wall motion abnormalities. The blood pool signal is uniform, and there is no evidence of thrombus or intracavitary obstruction. This view offers a cross-sectional perspective, confirming the spatial orientation of the false tendon (**Fig. 4**) and aiding in differentiation from pathological intracardiac masses.

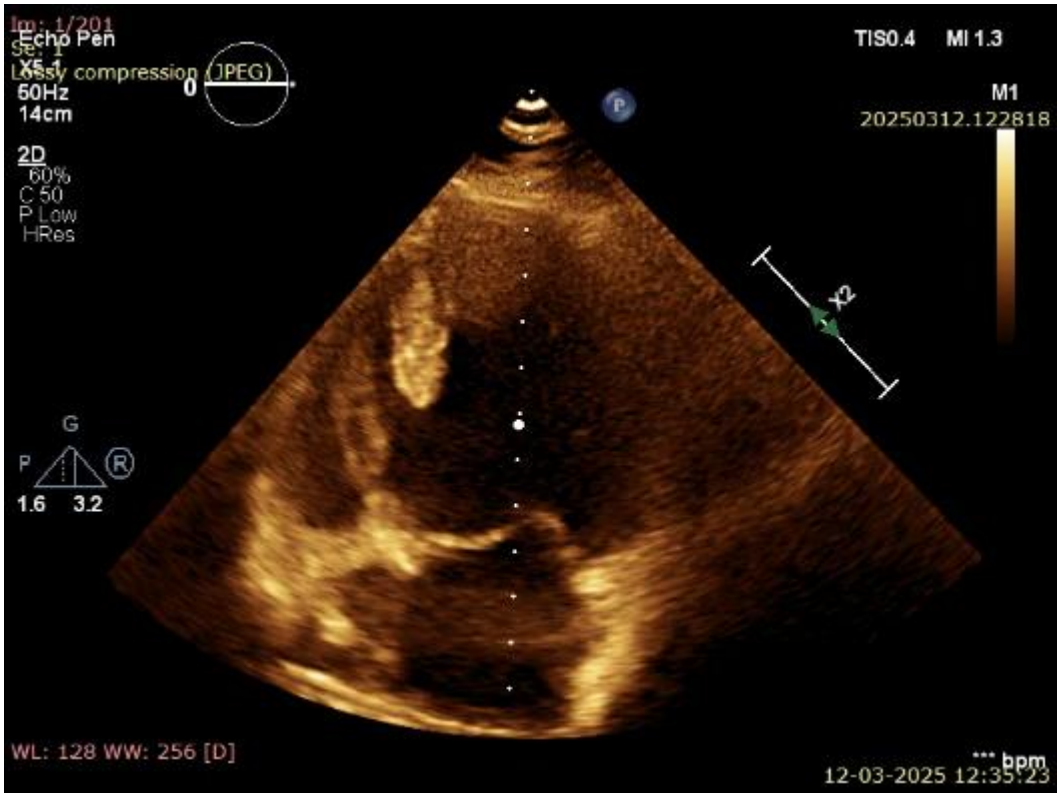

Figure 5 Transthoracic echocardiogram - Apical four-chamber view

Apical four-chamber 2D echocardiographic image demonstrating a prominent echogenic linear band extending across the left ventricular cavity, consistent with a false tendon. The structure appears to originate from the interventricular septum and traverse toward the lateral wall, without attachment to the mitral valve leaflets. Left ventricular chamber size and wall thickness appear within normal limits, and there is no evidence of thrombus, mass lesion, or regional wall motion abnormality. The image underscores the potential for false tendons to mimic pathological intracardiac masses on standard echocardiography, highlighting the importance of correlation with advanced imaging for definitive diagnosis (**Fig. 5**).

3. Discussion

False tendons are frequently encountered during cardiac imaging and are generally considered incidental findings.[6, 7] Their prevalence varies widely from less than 1% on echocardiography to approximately 55% in autopsy studies.[7, 9] False tendons have been reported even in pediatric populations, reinforcing their benign developmental nature. [5] While most are asymptomatic, they can occasionally be associated with arrhythmias or murmurs and may be misinterpreted as pathological masses. [7]

The initial concern regarding a possible mass led to further diagnostic investigations. Cardiac MRI proved instrumental in identifying the structure as a false tendon, with associated fibrosis but no functional compromise. This distinction is critical, as misdiagnosis could lead to unnecessary interventions or anxiety for the patient.

Advanced imaging modalities, particularly cardiac MRI, offer superior tissue characterization and spatial resolution, enabling clinicians to differentiate benign anatomical variants from true pathological findings. [1, 3]

3.1. Management and Outcome

The patient was discharged in stable condition with continued medical therapy, including anticoagulants, antihypertensives, and thyroid hormone replacement. A follow-up echocardiogram was scheduled to monitor cardiac status.

4. Conclusion

This case illustrates the potential for left ventricular false tendons to mimic mass lesions on imaging. [1, 2, 4] Accurate diagnosis through advanced modalities such as cardiac MRI is essential to avoid misinterpretation and ensure appropriate patient care. When assessing intracardiac masses, clinicians should remain vigilant for anatomical variations that may resemble pathological findings

Compliance with ethical standards

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Disclosure of conflict of interest

Authors declare no conflict of interest

Statement of informed consent

Informed consent for the publication of this case report was not obtained as the patient is entirely unidentifiable. All personal identifiers *has* been removed to ensure complete anonymity..

References

[1] Goyal, H., Sharma, A. K., Katti, M., & Rajagopal, R. (2023). Left ventricular false tendons: Unseen or overlooked? Case Reports in Clinical Radiology, 1(1), 55–57. https://doi.org/10.25259/CRCR_40_2022

[2] Kareem, H., & Devasia, T. (2013). A dancing ball in the heart: False tendon of the left ventricle simulating a mass lesion. BMJ Case Reports. https://doi.org/10.1136/bcr-2013-201115

[3] Kumar, A., Joshi, A., Devarakonda, B. V., & Ghotra, G. S. (2024). Intraoperative transesophageal echocardiography diagnosis of a left ventricular false tendon mimicking a left ventricular mass: A case report. Journal of Perioperative Echocardiography, 9(2), 45–47. https://doi.org/10.5005/jp-journals-10034-1135

[4] Patel, J. S., Anandan, P. K., Bhatt, P., Manjunath, C. N., & Chandrashekaran, D. (2015). Comet in left ventricle: A case of false tendon creating a false impression. Journal of Cardiovascular Disease Research, 6(3), 167–169. https://doi.org/10.5530/jcdr.2015.3.12

[5] Gachie, S., Onyango, V., Theuri, A., Mutua, D., Mutiso, B., & Mutuma, N. (2023). Caught in the web: A case report of left ventricle false tendon (LVFT) in a 15-year-old boy. Novelty Journals. https://doi.org/10.5281/zenodo.10245068

[6] Chen, A., & Chen, J. (2024). Left ventricular false tendons: A morphological study by echocardiography. Echocardiography, 41(12), e70049. https://doi.org/10.1111/echo.70049 [Left Ventr...rdiography]

[7] Velthuis, S., & Senden, P. J. (2021). Left ventricular false tendons. Netherlands Heart Journal, 29(9), 419–422.

[8] Rajiah P, Kanne JP, Shah AB, Bolen MA, Menon V, Williamson EE. Bands and other anatomic variants in the heart: multimodality imaging review. Radiographics. 2019;39(3):667–687. https://doi.org/10.1148/rg.2019180177

[9] Luetmer PH, Edwards WD, Seward JB, Tajik AJ, Nicoloff DM, Danielson GK. Incidence and distribution of left ventricular false tendons: an autopsy study of 483 normal human hearts. Journal of the American College of Cardiology. 1986;8(1):179–183. https://doi.org/10.1016/S0735-1097(86)80079-1