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CARDIOVASCULAR FLASHLIGHT

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Radiation and contrast-free characterization of an unexpected mass during pregnancy

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A 27-year-old asymptomatic pregnant woman underwent echocardiography because of a mild systolic murmur, detected during routine medical evaluation. She had no history of endocarditis, collagen vascular disease, or rheumatic fever and no embolic or neurologic symptoms were reported. Twelve-lead electrocardiogram was unremarkable. Transthoracic echocardiography revealed a normalized heart with normal systolic function and thin leaflet mitral valve.

An unexpected rounded, thin-walled cystic image (13 mm in diameter) was clearly visualized, firmly attached to the ventricular side of the anterior mitral leaflet (*Panel 1A*). No mitral regurgitation was detected and there was no evidence of left ventricular inflow or outflow obstruction. Real-time live three-dimensional echocardiography was performed using a commercially available ultrasound system (IE33, Philips Medical Systems, Bothell, WA, USA) equipped with a matrix transducer. It confirmed the presence of a rounded structure with very low internal echogenicity, which appeared surrounded by tendineae chordae (*Panels 1B and C*, white arrow points at partially visible chordae).

For further tissue characterization, cardiac magnetic resonance (1.5 Tesla) was performed, without the use of contrast, contraindicated by pregnancy. The cyst demonstrated low signal using steady-state free precession sequence (*Panels 2A and B*), while using a T2-w sequence it appeared isointense with a slightly hyperintense core, consistent with chronic blood appearance (*Panel 3A*). A proton-density sequence without (*Panel 3B*) and with (*Panel 3C*) fat-suppression demonstrated the absence of relevant fat component in the mass. Although a cardiac blood cyst is a very rare finding during pregnancy, it can be non-invasively diagnosed using radiation-free echocardiography plus cardiac MRI, without the need of any contrast media.

