A 24-year-old woman was admitted to the hospital because of massive persistent asymptomatic pericardial effusion. Six months earlier, she had visited her rheumatologist because of polyarthralgias suggesting systemic lupus erythematosus. She had never complained of dyspnoea or cough. On echocardiography, a large, homogeneous pericardial effusion, ‘swinging heart’-type, was found (see Supplementary material, Movie I), with no signs of haemodynamic compromise (Panels A, parasternal long axis, and B, apical four-chamber with severe pericardial effusion [arrow]). A cardiac magnetic resonance imaging (CMR) was performed revealing a massive pericardial effusion (see Supplementary material, Movies II and III). No fibrous tracts were detected. Black blood images without (Panel C) and with fat saturation techniques (Panel D) were acquired and the suppression of the signal intensity of the fluid (asterisks) suggested the presence of fat in it. Pericardiocentesis was planned based on CMR images, obtaining 1 L of dense, intensely chylous fluid. A chemistry analysis revealed a triglyceride level of 3700 mg/dL. Cytology and cultures yielded negative results. Follow-up MRI and chest computed tomography performed 1 month later showed recurrence of the effusion and findings compatible with lupus pneumonitis, while the patient remained asymptomatic. She was referred for surgery, which included drainage of the chylopericardium, ligation of the thoracic duct, and biopsy of the pericardium, which yielded unspecific results.

In conclusion, CMR is the only non-invasive technique capable of giving the diagnosis of chylopericardium, since it provides a biochemical characterization of pericardial effusion. In clinically stable patients, CMR can be helpful in further diagnosis of pericardial effusion.