

A case of tuberculous pericarditis on cardiac magnetic resonance

Przypadek gruźliczego zapalenia osierdzia w badaniu rezonansu magnetycznego serca

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A 19-month-old, previously healthy girl was admitted to a regional hospital due to a high fever refractory to empirical antibiotic therapy, cough, and dyspnoea. Laboratory markers of inflammation were markedly elevated. A computed tomography demonstrated enlarged mediastinal and hiatal lymph nodes and the presence of fluid in the pericardium. Transthoracic echocardiography performed in our hospital demonstrated, as well as pericardial effusion, a “banana-like” shaped encapsulated mass (50 × 20 mm) in the pericardium adjacent to the lateral left ventricular (LV) wall. LV systolic function was preserved; there was no constrictive physiology or evident signs of pericardial tamponade. The child underwent cardiac magnetic resonance (CMR) under general anaesthesia to allow further non-invasive assessment of the characteristics of the mass and pericardium. Cine images showed heterogenous signal of the mass (Fig. 1A, B). The formation was isointense and homogenous on T1w images with and without fat saturation (Fig. 1C) and heterogeneous and slightly hyperintense on T2w images (Fig. 1D). First-pass perfusion of gadolinium contrast was limited to the peripheries of the mass with intensive delayed enhancement of the sac and the whole pericardium with its regional thickening up to 6 mm (Fig. 1E, F). Additionally, small linear thrombi present in the pericardial cavity were noticed at the level of the right ventricular free wall and right atrium. LV ejection fraction was depressed (52%) due to modelling of the lateral wall by the mass. There were no signs of active myocarditis — lack of oedema and delayed enhancement in the myocardium. The whole picture was typical of pericarditis with the presence of abscess or haematoma in the pericardial cavity. Comparison of obtained images with limited repository of accessible data was most suggestive of tuberculous pericarditis. The patient was qualified for surgical removal of the mass with microbiological and genetic analysis, which confirmed the presence of *Mycobacterium tuberculosis*. The patient was transferred for further pharmacological treatment of tuberculosis. Although there is no pathognomonic CMR picture for tuberculous pericarditis, the tissue characteristics potential of this non-invasive imaging method led to a correct diagnosis before the onset of complications in this challenging case.

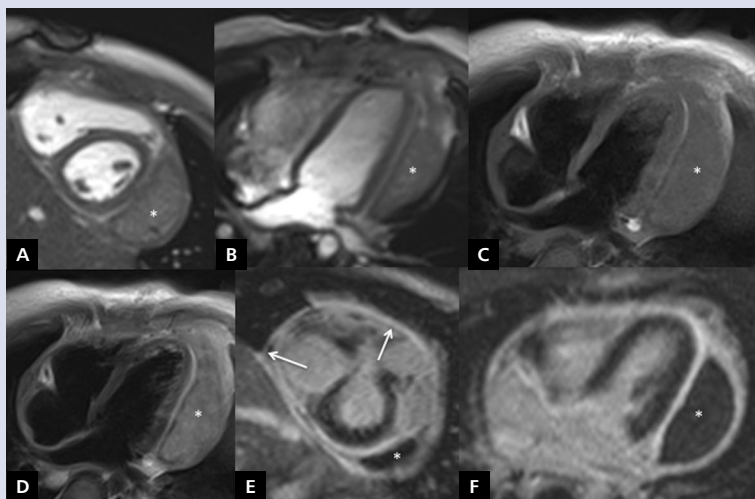


Figure 1. Cardiac magnetic resonance of tuberculous pericarditis. On each image the mass in the pericardium is marked with an asterisk; **A.** Cine image in the short-axis view at the level of papillary muscles; **B.** Cine image in the four-chamber view; **C.** T1w image in the four-chamber view; **D.** T2w image in the four-chamber view; **E.** Delayed enhancement image in the basal short-axis view showing enhanced and thickened pericardium with linear thrombi marked with arrows; **F.** Delayed enhancement image in the four-chamber view

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