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CASE REPORT

Adipositas cordis: A case report study and a brief review of the literature

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1. Case study

A 42-year-old woman (Weight: 85 kg, Height: 1.60 m, BMI: 33.2, during autopsy) was found dead in her accommodation and was transferred to the forensic department for autopsy. She was described as a heavy smoker (over 40 cigarettes per day for the last 20 years). The patient had

undergone a routine cardiological assessment 4 years previously, including an ECG, an echocardiograph [Fig. 1a, b] and a treadmill test, which were found to be normal. Post-mortem examination revealed the cause of death to be a massive pulmonary embolism [Fig. 2] in the context of deep vein thrombosis. The heart weight was 460 grams, while the other organs presented no abnormal pathological findings. Myocardial specimens from the right ventricular free wall demonstrated extensive transmural fatty infiltration with mild interstitial fibrosis and preservation of the myocardial fibers, consistent with a pattern of adipositas cordis [Fig. 3]. Fatty infiltration but to a lesser extent was also present in the left ventricle and the ventricular septum.

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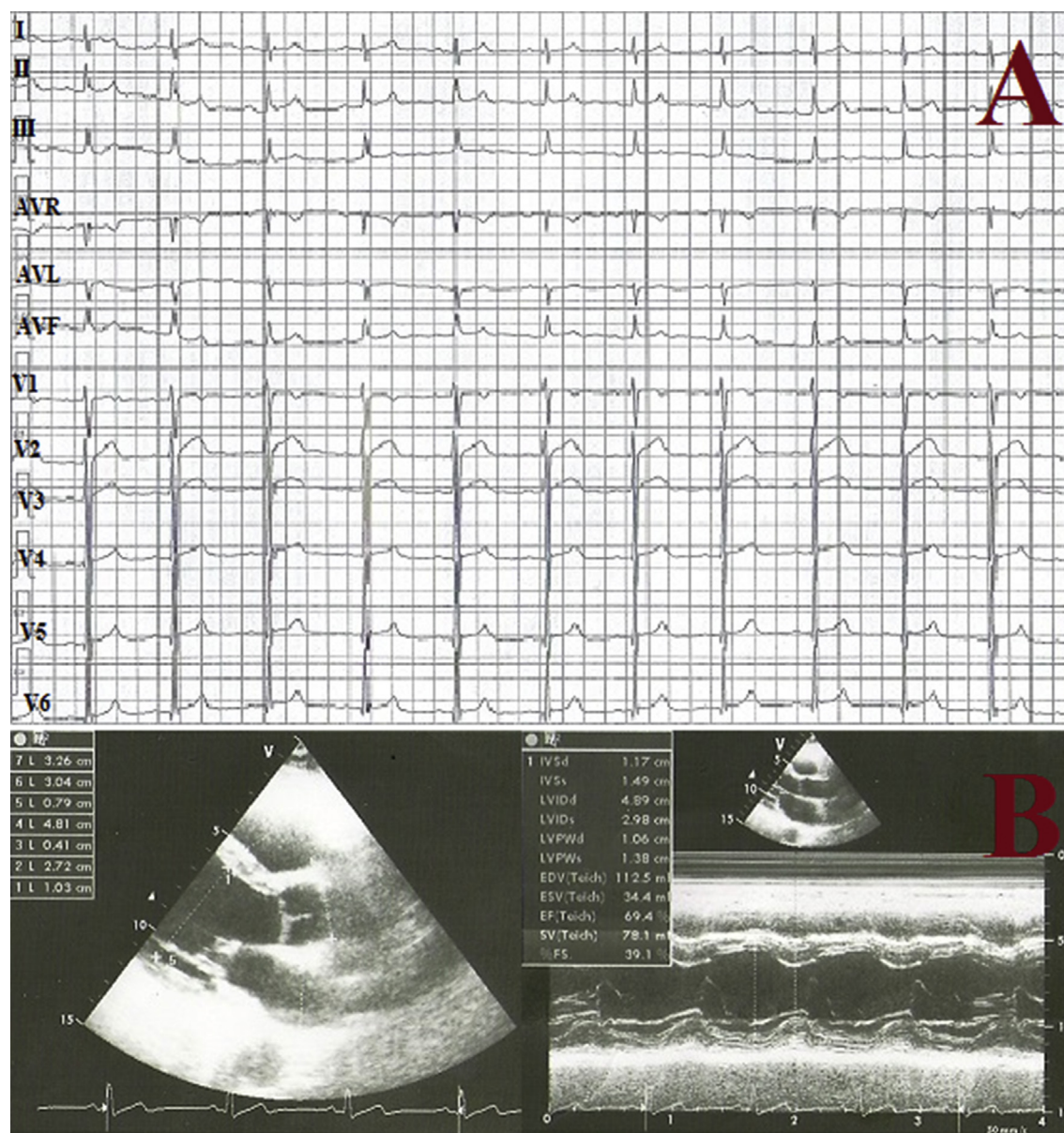


Figure 1 A. ECG of the 42-year-old woman showing normal sinus rhythm with normal axis orientation and without evident abnormalities. B. Normal echocardiographic long axis 2D and M-mode views. Wall thickness (interventricular septum and posterior wall), as well as internal dimensions, were within normal range. Ejection fraction is normal (69.4%). Right ventricle's internal dimensions and wall thickness were normal, while no aneurysms or right ventricular free wall outpouching suggestive of arrhythmogenic right ventricular cardiomyopathy were recorded from other views.

2. Discussion

Adipositas cordis (also referred as cor adiposum and lipomatosis cordis) is a rare cardiomyopathy characterized by extensive infiltration of adipocytes into the myocardium, primarily of the right ventricle, without degeneration of the myocytes or replacement-type fibrosis. The diagnosis of cor adiposum is usually incidental during an autopsy of an obese patient and its clinical significance has not been unequivocally established.¹

The few studies investigating cor adiposum have revealed that the epicardial fat was more abundant in these patients, especially in the lateral and apical regions of the right ventricle. Of note, this layer was thicker in

women than in men.²⁻⁴ Additionally, the amount of the adipose tissue correlated primarily with body weight and could constitute more than 50% of the weight of the heart. Patients with cardiac adiposity often had systemic hypertension and atherosclerotic heart disease.⁵

In addition to the extensive epicardial fat, adipocytes infiltrated the myocardium following three specific patterns: concentration only around the vessels, separation of the myocardium into bundles, and separation of the myocardial fibers. Being female and obese were strong predictors for the extent of the fatty tissue infiltration.¹

Interestingly, normal adult hearts always contain small amounts of subepicardial adipose tissue and display limited fatty infiltration within the myocardium of the free wall of

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