

中文題目：兩年追蹤急性心包膜炎於心電圖的系列變化

英文題目：Serial ST-T Changes of Electrocardiogram in Acute Pericarditis, two years Follow-up

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Introduction

The pericardium is composed of two layers: the visceral layer and the parietal layer. Acute pericarditis is defined as inflammation of pericardial sac. Acute pericarditis may present with electrocardiographic (EKG) changes in the absence or presence of myocardial involvement [1][2].

Case Report

A case of acute pericarditis with serial ST-T changes in EKGs were review and presented during 2 years' follow-up.

This 49-year-old man had hypertension without medical control. He sought medical help for having new-onset left chest wall tightness, which was precipitated by rising from supine position, without radiate to back, and had last for almost 2 hours. It was somewhat relieved by drinking water. He visited the Emergency Department where the ECG showed concave ST elevation in leads V2-V4, and AVR, associated with PR segment depression in leads I, II, and III, and reciprocal elevation of PR in lead aVR. The Spodick sign (down-sloping TP segment) in lead II and precordial leads was absent [2].

Upon the prominent ST-T elevation in ECG, acute ST elevation myocardial infarction was initially impressed. Therefore emergent cardiac catheterization with coronary angiography was performed. The results showed nearly normal coronary arteries without any luminal stenosis. The hemodynamic data of cardiac catheterization showed elevated LV filling pressure: Pressures in aorta, 143/ 118 (mean 131) mmHg; in left ventricle, systolic 170/ end-diastolic 26 mmHg. Cardiac enzymes had been followed up and there was no elevation in either CK-MB or TnI.

To determine the pathogen of his acute pericarditis, laboratory tests were performed for virus infection. The results showed elevated titer of IgG against Coxsackie virus. Other titers for influenza A and B, Rubella IgM, HSV IgM, VZV IgM, EBV IgM, CMV IgM, and anti-HCV antibody were all negative, except for positive HBs Ag. Echocardiography showed a normal LV systolic function and thickened pericardium with small amount of pericardial effusion that was consistent with the diagnosis of acute pericarditis.

The patient was discharged after four days' hospitalization and had received regular follow-up at our outpatient department.

EKGs during the ward care and outpatient followed-up had been performed. The resolution of

PR depression and concave ST elevation were on the 3rd day of disease onset and associated with new T wave inversion (TWI). TWI in leads II, III, aVF, and V5-6 was shown persistent after 2 weeks of onset, and even last for approximately 9 months. All ST-T changes and TWI returned to normal in the 2 years' EKG.

Thickened pericardium had been observed at onset with small pericardial effusion. The effusion subsided at 10-month echocardiographic follow-up. Thickened pericardium was still noticeable until 2 years after disease onset.

Discussion

The evolution of electrocardiogram in acute pericarditis can be divided into four stages. The stage 1 is characterized by depressed PR interval and reciprocal diffuse, concave ST elevation in leads aVR and lead I. The Stage 2 is normalization of PR depression and ST elevation, which usually take place from few days to weeks after onset. The stage 3 is manifested with T wave inversions, with a duration not determined or reported. The stage 4 is normalization of inverted T wave. Some literatures report that T wave inversion in pericarditis was persistent for years.

Changes of electrocardiogram in acute pericarditis can be originated from co-existing inflammation of myocardium or from the injury current from the pericardium which is the electrical inert. This case is one of the pericarditis without myocardial necrosis. Another instance of pericarditis without inflammation of myocardium is uremic pericarditis.