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Case report

Pulmonary embolism presenting with ST segment elevation in inferior leads☆

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ABSTRACT

Acute pulmonary embolism is a form of venous thromboembolism that is widespread and sometimes mortal. The clinical presentation of pulmonary embolism is variable and often nonspecific making the diagnosis challenging. In this report, we present a case of pulmonary embolism characterized by ST segment elevation in inferior leads without reciprocal changes in the electrocardiogram.

Introduction

Acute pulmonary embolism (PE) is a form of venous thromboembolism (VTE) that is widespread and sometimes mortal.[1] The clinical presentation of PE is variable and often nonspecific making the diagnosis challenging.[2] Patients can be diagnosed and therapy administered quickly to reduce the associated morbidity and mortality.[3] Electrocardiographic (ECG) changes are very unspecific and range from most common sinus tachycardia, rightward shift in QRS axis, complete or incomplete right bundle branch block, precordial T wave inversion, S1Q3T3 pattern and more uncommon ST segment elevation.[4] In this report, we present case of pulmonary embolism characterized by ST segment elevation in inferior leads without reciprocal changes in the electrocardiogram (ECG).

Case report

76 year-old female patient was admitted to our emergency department because of chest pain and acute onset breathlessness. Her past medical history included hypertension and her coronary angiography showed normal coronary artery two years priorly. She was getting immobile because of left arm fracture for six months. On physical examination, her blood pressure was 102/65 mm Hg, heart rate was 102 bpm and oxygen saturation was 88%. Electrocardiography (ECG) showed ST segment elevation in inferior leads without no reciprocal changes (Fig. 1). Transthoracic echocardiography revealed normal left ventricular systolic function without segmental contraction defects and slightly right ventricular enlargement. Systolic pulmonary pressure was 45 mm Hg and tricuspid annular plane systolic excursion (TAPSE) and tricuspid annular velocity were 16 mm and 10 cm/s, respectively. Laboratory test results were unremarkable but troponin-I level increased. Re-tests 3 h later, there was no changes according to first troponin level. On the basis of physical examination, past medical history, ST segment elevation without no reciprocal changes, pulmonary embolism was suspected. Then we performed contrast-enhanced chest computed tomography. Chest computed tomography scan showed pulmonary embolism (Fig. 2). At the time of diagnosis of pulmonary embolism she was hemodynamically stable, therefore she received continuous infusion of unfractionated heparin. After 5 days heparin infusion, ECG changes was getting normal and ST segment elevation in inferior leads was resolved (Fig. 3). In a few days heparin, infusion was substituted for warfarin and enoxaparin. International normalized ratio (INR) level became therapeutic range and she discharged successfully.

Discussion

The symptoms and clinical features of pulmonary embolism are variable.[2] As stated previously, pulmonary embolism present several electrocardiographic (ECG) changes but ST segment elevation is rare condition. We demonstrated this rare condition in pulmonary embolism. This case highlights the fact that pulmonary embolism still remains one of the biggest masqueraders in acute coronary syndrome. Physicians should be careful in patients presenting with ST segment elevation and pulmonary embolism should be kept in mind differential diagnosis of acute coronary syndrome.

Conflict of interest

None.

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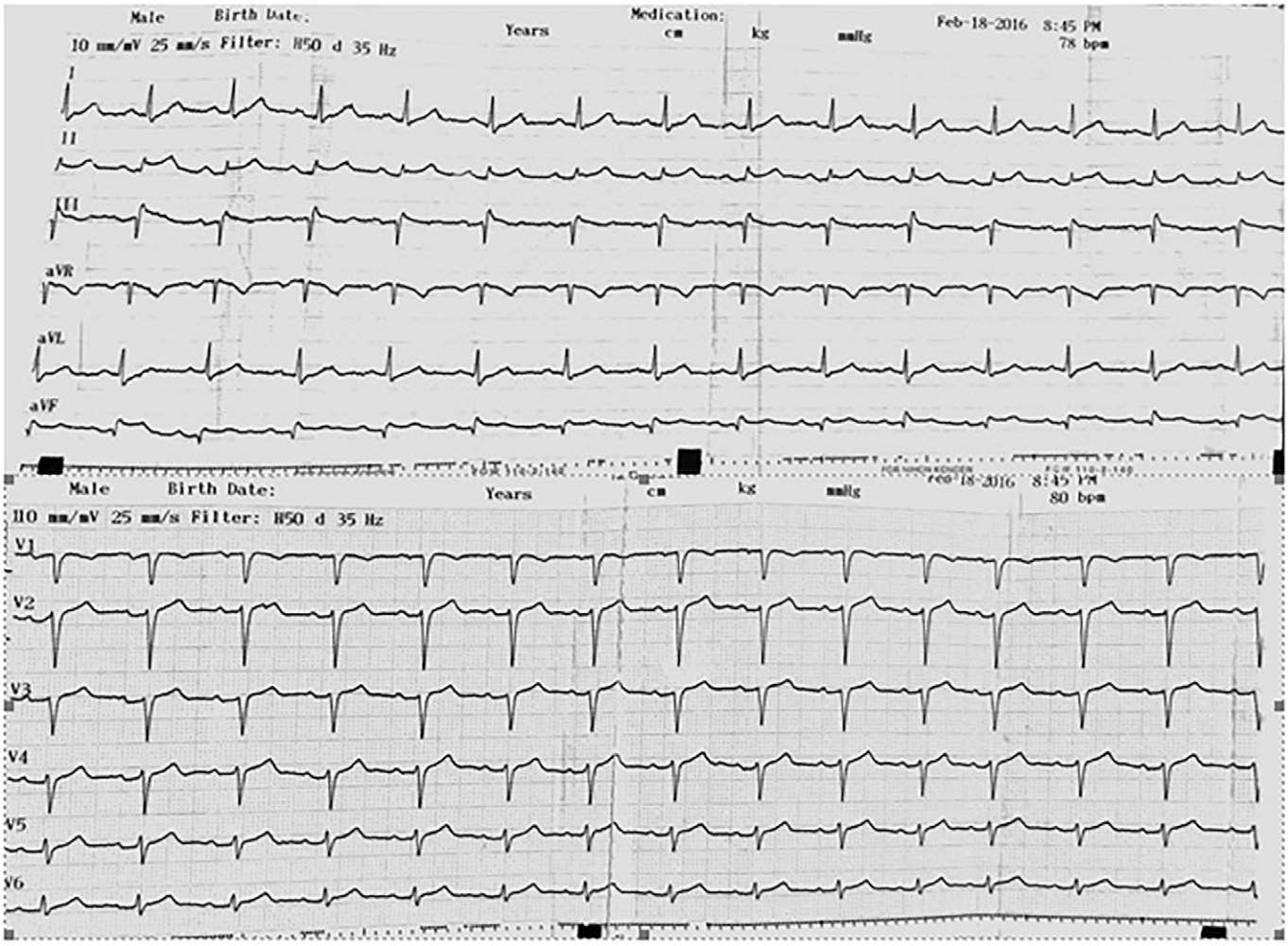

Fig. 1. The ECG shows ST Segment elevation in inferior leads without reciprocal changes.

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Fig. 2. Computed Tomography shows pulmonary embolism.

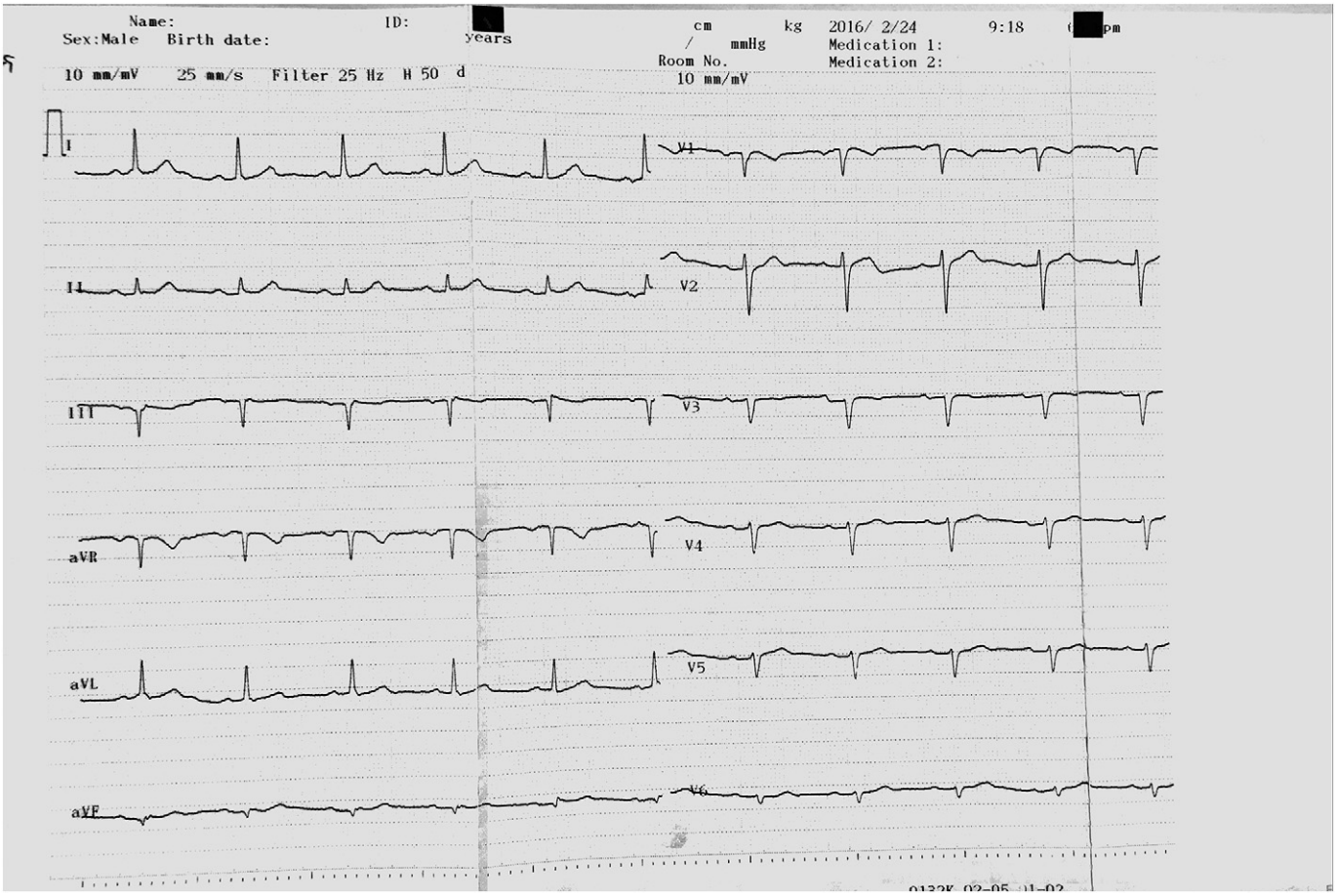

Fig. 3. The ECG shows resolution of ST segment elevation after anticoagulation treatment.