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Massive pulmonary embolism masquerading as acute coronary syndrome

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Abstract

Pulmonary embolism (PE) often times presents with signs and symptoms suggestive of acute coronary syndrome (ACS). We present a case of a 55-year-old man transferred from an outside hospital with concern for non-ST elevation MI but shortly after arrival suffered cardiopulmonary arrest secondary to massive PE. The patient was stabilized with veno-arterial extracorporeal cardiopulmonary (VA-ECMO) support and surgical embolectomy was performed thereafter.

Keywords

pulmonary embolism; acute coronary syndrome; extracorporeal membrane oxygenation

Introduction

Presenting symptoms of acute pulmonary embolism (PE) often times mimics conditions such as acute coronary syndrome (ACS), exacerbation of underlying lung disease, or lung infection. Acute electrocardiographic (ECG) changes and elevated biomarkers are suggestive of sub-massive PE however can be difficult to differentiate from ACS initially [1,2]. We present a case of massive PE mimicking ACS and how veno-arterial extracorporeal cardiopulmonary (VA-ECMO) support served as a bridge to surgical embolectomy.

Case Report

A 55-year-old man presented to an outside hospital with two days of chest tightness. He was transferred to our institution with a working diagnosis of non-ST elevation myocardial infarction (MI). He had no significant notable past medical history, and was a non-smoker. Family history included MI in his father at age 51. On presentation he was tachycardic (130 bpm) normotensive (130/80 mm Hg) and oxygen saturation was 100% on four liters nasal cannula. He appeared anxious. Cardiopulmonary and lower extremity

exam was unremarkable.

Troponin and brain natriuretic peptide were mildly elevated (0.1 ng/ml and 102 ng/ml, respectively). An EKG revealed sinus tachycardia, and a right ventricular strain pattern (Fig 1), and an echocardiogram revealed right ventricular dilatation and hypokinesis (Fig 2). Pulmonary embolism was suspected, heparin was continued, and he was taken for CT pulmonary angiography which revealed a large bilateral main-stem pulmonary embolism (Fig 3).

Upon returning from CT, the patient deteriorated to pulseless electrical activity. With ongoing attempts at cardiopulmonary resuscitation, he was taken urgently to the catheterization lab where VA-ECMO support was employed. After initiation of extracorporal membrane oxygenation, coronary angiography revealed no obstructive coronary artery disease. The patient was noted to have a large inguinal hematoma contralateral to the VA-ECMO site post-procedure.

RR was stabilized for 4 days on extracorporeal support before being taken to the operating room for pulmonary embolectomy. Six months after presentation he had returned to most of his usual activities. This case illustrates the value of high quality CPR and utilization of full hemodynamic support when definitive therapies for the underlying condition are available.

Discussion

In the case of massive pulmonary embolism (PE) with hemodynamic instability or collapse extracorporeal cardiopulmonary support can be used to stabilize the patient while the best course in PE treatment is determined [3,4]. In this case, the patient's rapidly expanding inguinal hematoma precluded the use of catheter directed therapies and made systemic thrombolytic therapies less desirable. This patient was stabilized on extracorporeal membrane oxygenation while the risk of bleeding had decreased to an acceptable level at which point the decision was made to pursue surgical embolectomy. Surgical embolectomy is a reasonable option for patients who are not a candidate for or have failed other therapies for acute massive pulmonary embolism [5,6].

Figures

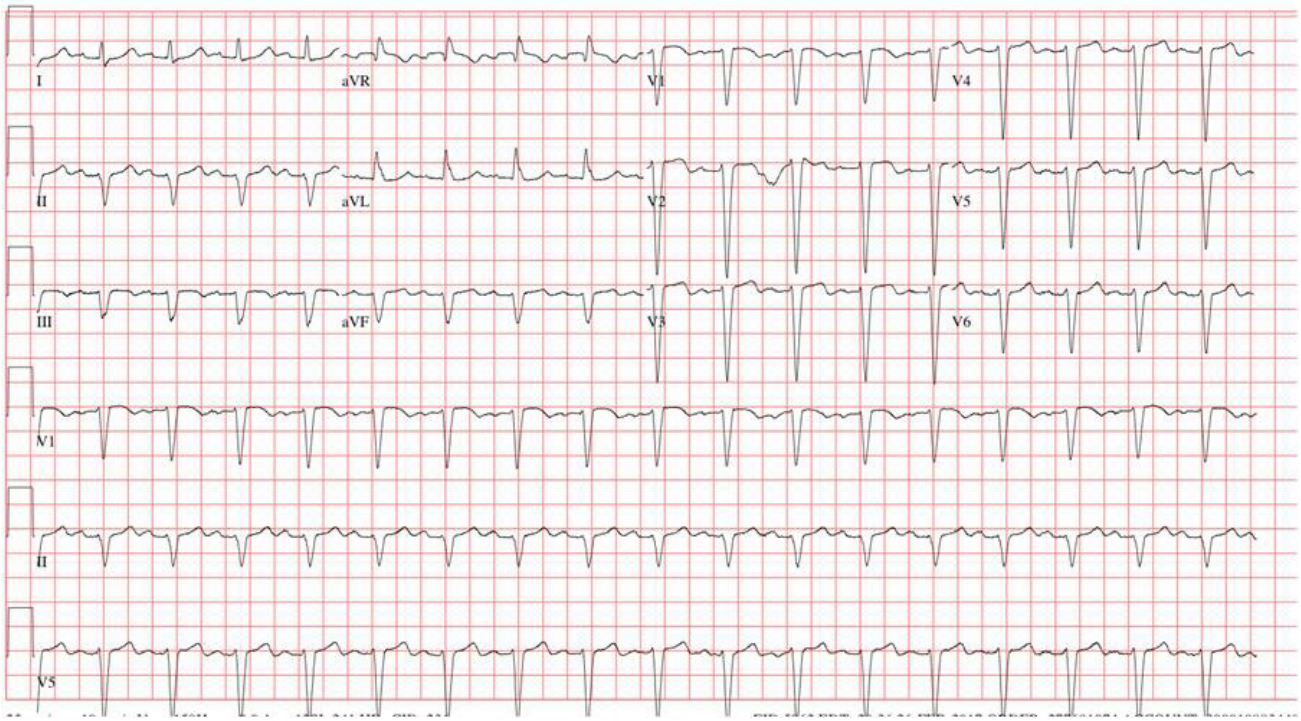

Figure 1: Low voltage EKG.

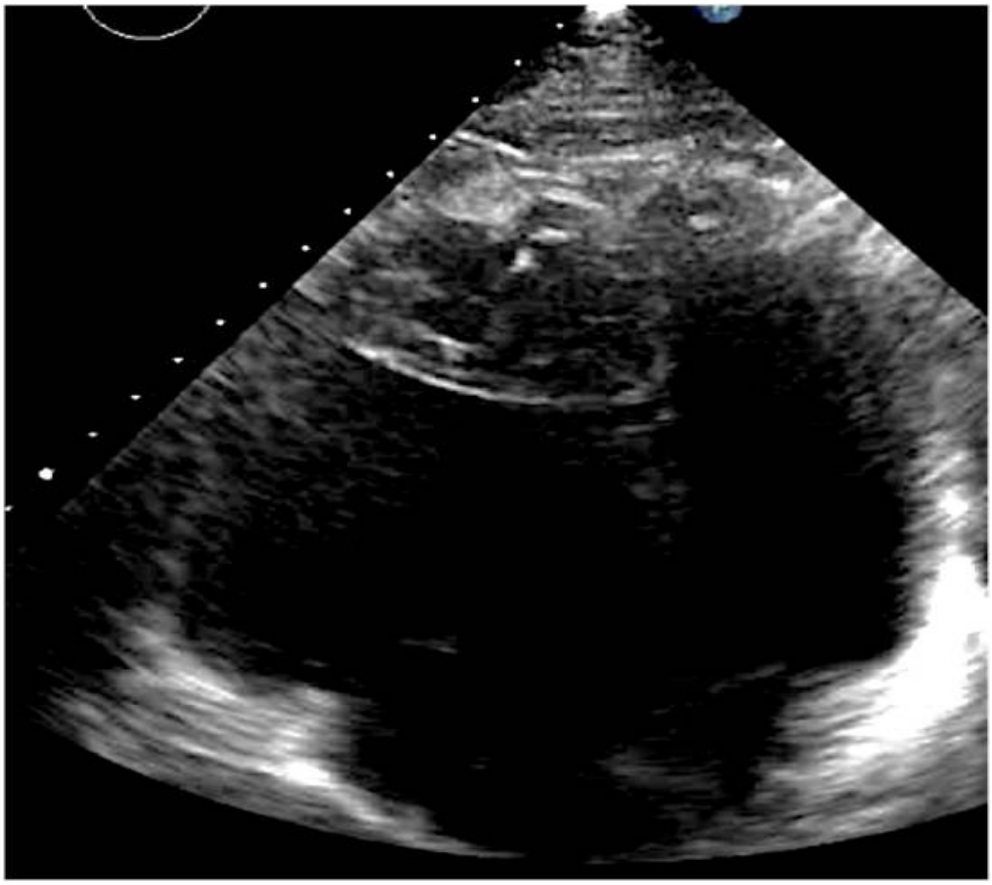

Figure 2: Transthoracic Echocardiogram

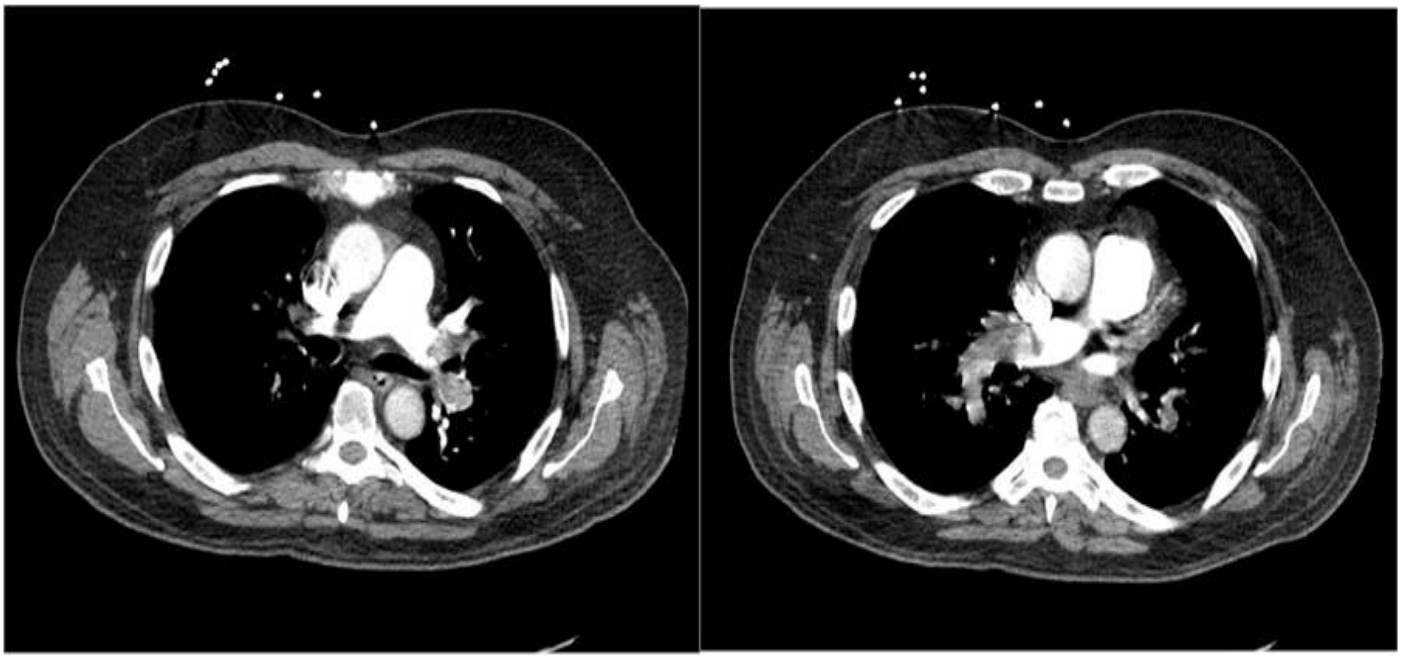

Figure 3: CT Pulmonary Angiogram

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