Case Report

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Undifferentiated Connective Tissue Disorder Presenting as a Pulmonary Embolism Mimic

Kushagra Gupta

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Abstract

Diagnosing undifferentiated connective tissue disorder (UCTD) is a difficult process. On the surface, UCTD often mimics the symptoms of other more common conditions, such as pulmonary embolism. To make matters worse, a delayed or misdiagnosis could have serious implications for the patient's health. Here we present a case of a 45-year-old female, with complaints of shortness of breath and chest pain and was suspected as a case of pulmonary embolism but ended being diagnosed with probable undifferentiated connective tissue disorder.

Keyword: Undifferentiated Connective Tissue Disorder; Pulmonary Embolism; Mimic.

INTRODUCTION

A45-year-old female, presented to the Emergency Department (ED) with complaints of shortness of breath and central chest pain for 2 days. The symptoms had been sudden and were worsening over the course of 2 days. On arrival her blood pressure was 90/60 mmHg, Heart rate of 140 beats/per minute, respiratory rate of 30/minute, oxygen saturation was 89% on room air and random blood glucose was 95 mg/dL Electrocardiogram of the patient was suggestive of sinus tachycardia with right axis deviation with normal ST-T segments and intervals. Bedside Echocardiography showed dilated right atrium and ventricle with Pulmonary artery pressures of around 75 mmHg and left ventricular ejection fraction of 45%. The patient was given analgesia, taken on oxygen support and bedside chest X-ray was done which showed no signs of consolidation, mediastinal widening, or features of pneumothorax. On further history taking and clinical examination, the patient was found to have a history of Anti Phospholipid Syndrome, for which she had not been on any prophylactic treatment. The clinical Scenario along with the history and presentation with a high Wells Score all pointed towards a differential of a Pulmonary Embolism. In consultation with the Cardiology team, a Computed tomography Pulmonary Angiography was done after obtaining the results of the kidney function tests. The scan revealed clear Pulmonary arteries with no emboli noted with clear lung fields. Initial blood work also was negative for any infection but for a high Erythrocyte Sedimentation Rate (ESR) of 30 mm/hr. In view of underlying Antiphospholipid

Author's Affiliation: [1]Attending Consultant, Department of Accident and Emergency, Medanta-The Medicity, Gurugram 122001, Haryana, India.

Corresponding Author: Kushagra Gupta, Attending Consultant, Department of Accident and Emergency, Medanta-The Medicity, Gurugram 122001, Haryana, India.

E-mail: kushagrag.9@gmail.com

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syndrome, further investigations in the form of Anti Nuclear antibodies (ANA), coagulation Profile and Protein C and Protein S studies were sent, which came positive for ANA. The patient was then shifted to the intensive care unit (ICU) for further work up and management. Rheumatology review was done in view of a suspected connective tissue disorder and the patient was later discharged from the hospital after 3 days with stable vitals on corticosteroids and immunosuppressants.

It is easy to misdiagnose undifferentiated connective tissue disorder (UCTD) as a pulmonary embolism due to their overlapping symptoms. UCTD is an autoimmune disorder that affects the connective tissue and often emerges with no definitive cause. Meanwhile, a pulmonary embolism (PE) occurs when a blood clot lodges in the lungs, blocking blood flow.

Both conditions can present similarly: chest pain, shortness of breath, palpitations, cough, and leg swelling. To make matters more confusing, UCTD often accompanies other illnesses such as rheumatoid arthritis or lupus.[1] As such, it is important for medical professionals to look for other indicators such as low oxygen levels in the blood when diagnosing patients suspected of having PE or UCTD.

When diagnosing UCTD, physicians should also perform autoantibody tests to identify antibodies associated with autoimmune diseases to properly differentiate between UCTD and PE. Further diagnostic approaches include computed tomography imaging and contrast enhanced magnetic resonance imaging both of which provide valuable information about the patient's condition.

The clinical presentation of UCTD is highly variable and can manifest as a systemic autoimmune disorder.[2] In the pulmonary system, UCTD can present similarly to pulmonary embolism, making diagnosis difficult.

When diagnosing Undifferentiated Connective Tissue Disease (UCTD), it is important to differentiate it from other conditions that display similar symptoms, such as Pulmonary Embolism (PE).[3]

The differential diagnosis between UCTD and PE requires the identification of common signs and symptoms, like fatigue, pleuritic chest pain, dyspnea and tachycardia. Cardiac imaging can also provide helpful information in differentiating between the two with Echocardiography showing elevated right ventricular pressure as a sign of PE.

However, due to overlap in symptoms and a lack of definitive clinical criteria for UCTD, further investigations often need to be undertaken in order to confirm a diagnosis. These include:

1. ***Bloodwork***: A Complete Blood Count (CBC) establishes the presence of anemia or leukocytosis associated with UCTD. An erythrocyte sedimentation rate (ESR) test may also show if there is inflammation in the body which could indicate UCTD or another condition.
2. ***Imaging***: Chest X-rays and computed tomography (CT) scans are used to detect any fluid or masses present in the lungs that could be linked to PE or other disorders.
3. ***Lung Function Tests***: Spirometry can help provide an accurate measure of lung volume and gas exchange which can help differentiate between UCTD and PE if pulmonary dysfunction is suspected as a cause for these disorders.

By relying on a combination of these methods diagnostic mistakes can be avoided and an accurate diagnosis made quickly to ensure that the best possible treatment plan is put into place.

CONCLUSION

In conclusion, clinicians working in the field of emergency medicine must be aware of the diverse aetiologies for chest pain, particularly the undifferentiated connective tissue disorder as a mimic of pulmonary embolism. Diagnosing undifferentiated connective tissue disorder (UCTD) is challenging due to its similarity to other pulmonary and cardiovascular diseases, such as pulmonary embolism. Despite its presentation as a pulmonary embolism mimic, UCTD can often be identified with a thorough medical history and physical examination. Furthermore, additional tests such as radiography, transthoracic echocardiography, and D-dimer may be helpful to confirm or rule out UCTD. It is important for healthcare providers to be aware of the potential of UCTD to mimic pulmonary embolism, and consider a diagnosis of UCTD in patients presenting with signs and symptoms suggestive of a pulmonary embolism. An early and accurate diagnosis of UCTD is essential to initiate timely and effective treatment.

Not only do UCTD and PE have similar presenting signs, but they also have similar diagnosis criteria. However, it is important to identify UCTD to avoid

missed diagnosis and mismanagement.

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