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Pulmonary thromboembolism: as the first and only presentation of Covid19 infectious

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ABSTRACT

We report pulmonary thromboembolism (PTE) as the merely manifestation in a young man with covid 19. He had no any infectious presentation such as fever, headache, bone pain, cough, dyspnea and diarrhea. The Upsetting left pleuritic chest pain was the only compliant. Lung CT angiogram reported thrombus in the left and right pulmonary artery, but no any risk factor for PTE detected was found. According to high prevalence and world epidemic of the Covid 19, PCR was performed and then defined Corona virus 2.

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Introduction

Emerging in Wuhan (capital of China's Hubei province) in December 2019, severe acute Respiratory syndrome Coronavirus 2 (SARS-CoV-2) caused an outbreak of severe pneumonia defined by the World Health Organization as Coronavirus Disease 2019 (COVID-19) (1,2). In addition to lung parenchyma involvement and ARDS, there are other complications associated with Covid 19 disease .Coagulopathy is a serious disorder in Covid 19 patients due to inflammation, hypoxia, immobilization, endothelial damage, high blood viscosity and diffuse intravascular coagulation.

Recent findings have revealed an increased risk of venous thromboembolism during the acute phase of infection (3). Although this correlation mainly has been reported in severe COVID-19 patients and elderly group, but we report a young COVID-19 patient who developed pulmonary embolism without any signs and symptoms

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of infection. In this patient pulmonary thromboembolism was the first and only presentation of Covid 19 without any infectious symptoms.

Case presentation

A 32-year-old man was admitted to the emergency department with a history of chest pain and little dyspnea. He had no fever, cough, hemoptysis, no smoking,prior medical history, medication, and obvious risk factors for venous thromboembolism (VTE). He was haemodynamically stable. Her cardiorespiratory examination is unremarkable and he has no clinical evidence of deep vein thrombosis. Her temperature is 36.3°C, her pulse rate is 100 beats per minute and her blood pressure is 126/74 mmHg. Her respiratory rate is 18 breaths/min and her oxygen saturations are 94% on room air. Her jugular venous pressure is not elevated. 12-lead electrocardiogram are normal. Laboratory data were as follows (Table1). An increase in blood D-dimer levels raised the suspicion of pulmonary thromboembolism, which was confirmed by CT pulmonary angiography (Figure1, 2, 3).Real-time polymerase chain reaction confirmed SARS-CoV-2 infection. Based on these findings, treatment with low molecular weight heparin, enoxaparin was started.

Discussion

Nowadays, the whole World is threatened by the Covid19 and concomitant disorders and complications. The most common symptoms include fever, dry cough, dyspnoea, chest pain, fatigue and myalgia. Less common symptoms include headache, dizziness, abdominal pain, diarrhoea, nausea, and vomiting. It has been reported that severe respiratory tract infections such as H1N1 influenza and Severe Acute Respiratory Syndrome (SARS) may lead to hypercoagulability state and venous thromboembolisms (VTEs).

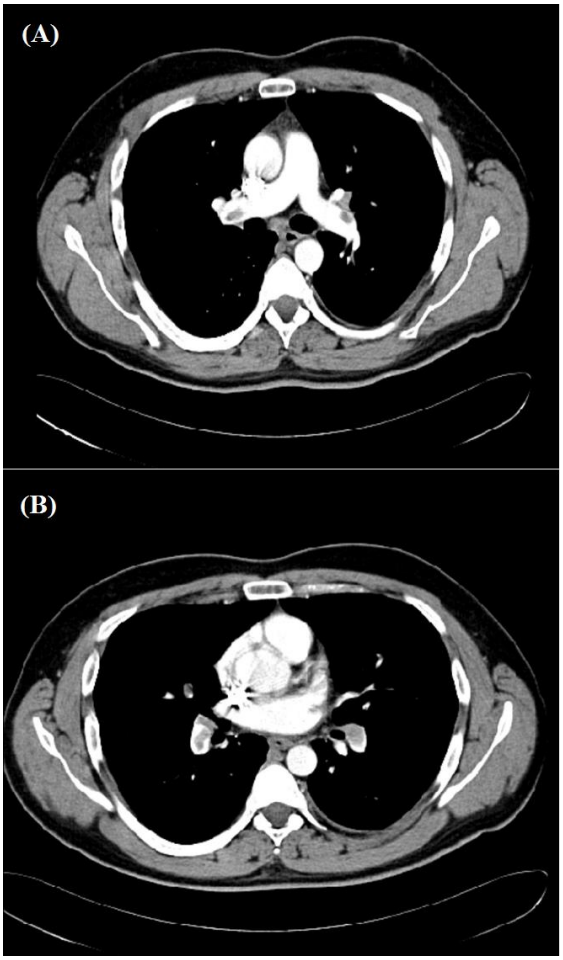

Figure1: Thrombus in left and right pulmonary artery

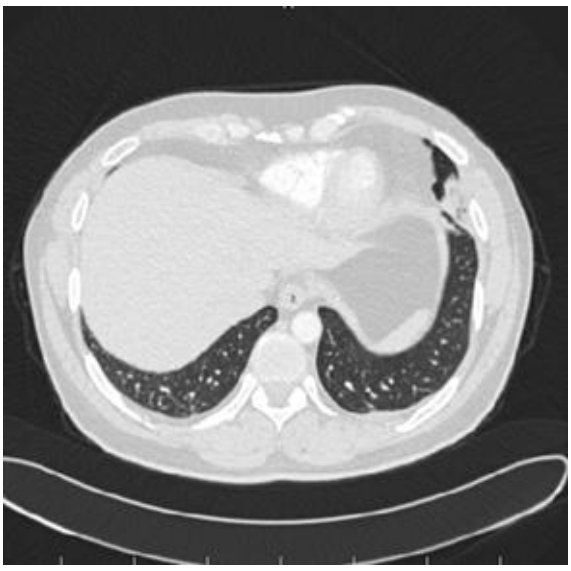

Figure2: Infiltration in left lung

Table1: Laboratory data

Laboratory Data	
WBC	8600/ µL
PMN	62.1%
Lymph	23.1%
Hgb	14.1 g/dl
HCT	41%
serum BUN	24 mg/dL
Creatinine	0.8 mg/dL
Na	138 meq/L
K	4 meq/L
ANA	5.2 U/mL
AnticardiolipinIgG	2.5 U/mL
AntiCardiolipin IgM	2 U/L
Protein C	80% normal activity
Protein S	70% normal activity
Antitrombin III	45% normal activity
D-Dimer	780(ng/ml)(normal<500ng /ml)

WBC; white blood cell, PNM; Polymorphonuclear, Hgb; hemoglobin, HCT; Hematocrit, BUN; Blood Urea Nitrogen, ANA; Antinuclear Antibody

Several cases and trials have revealed the correlation between COVID-19 and pulmonary embolism (3, 4). D-dimer level was significantly higher in the PE group; meaning the D-dimer increase is not only a marker of pneumonia severity but is also associated with a higher risk of PE. Although the underlying cause of coagulopathy is unclear, some theories have proposed that up-regulation of cytokines(5), damaging blood vessel walls via ACE2 receptors, hepatic dysfunction, hypoxia, and immobilization may be the causes of this condition (6-9). Most of these thromboembolic accidents have occurred in severe cases of COVID-19 and patients with potential risk factors of thromboembolic incidents (10, 11); however, our patient had not any severe pneumonia, ARDS, or identifiable major risk factors for PTE. In this case report, we suggest that pulmonary embolism can be the only clinical manifestation of COVID-19. It should be kept in mind that pulmonary embolism without recognized underlying risk factors could be associated with COVID-19 infection during the pandemic period. Also this case report warns that Covid 19 infection is an independent risk factor for pulmonary thromboembolism even in young people.

Conclusion

This case is one of the first to report that COVID-19 manifestations can be presented by venous thromboembolism especially PE could be the only clinical feature, even in young adults without underlying risk factors. The ethical code number is IR.MUMS.REC.1399.595.

Conflicts of interest

The authors have declared no conflict of interest.

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