

A case of hemorrhagic pericardial effusion after COVID-19 infection in a kidney transplant recipient

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Introduction: Pericardial effusion(PE) can be occurred by variable causes. Most are idiopathic or caused by viral infection. The majority of viral infections typically lead to non-hemorrhagic PE, and hemorrhagic PE is known to occur as a complication of coronary procedure or cause of malignancy. There are a few reports that hemorrhagic PE can also rarely occur as a result of viral infections. We report a case of hemorrhagic PE in a kidney transplant(KT) recipient who had a recent COVID-19 infection.

Case Presentation: The 65-year-old female patient had undergone living donor KT in 1997, and was undergoing follow-up while taking three kinds of immunosuppressive drugs. A solitary pulmonary nodule, hypertension, and spinal stenosis were present. She visited a local clinic for sore throat, cough, and sputum, then was diagnosed as COVID-19 infection by PCR. Afterwards, oral Nirmatrelvir/Ritonavir for 5 days, intravenous Piperacillin/Tazobactam and Ciprofloxacin for 8 days were given. Since there was no improvement of dyspnea, she was transferred to our hospital. Her initial vital signs were stable and severe orthopnea was persisted. The result of blood tests are described at Table 1. Since severe anemia was noticed, red blood cell transfusion was performed. A computed tomography image revealed a large amount of PE without any malignant findings. Transthoracic echocardiogram(TTE) was performed for evaluation of a large amount of PE and a pericardiocentesis(PCC) was performed due to tamponade physiology with diastolic right ventricle collapse on TTE. A total of 1150mL of bloody fluid in PCC was drained and the hemoglobin level in PE was 5.5g/dL. Dyspnea was improved after PCC, and a PCC drainage catheter was removed on the 7th day from the procedure. Only a few amount of PE was remained in the follow-up TTEs. She was discharged after 3 weeks of hospitalization.

Conclusion: It is essential to be aware that hemorrhagic PE can occur following a COVID-19 infection especially in a immunocompromised patient. Therefore, early diagnosis with imaging examinations and prompt treatment are crucial.

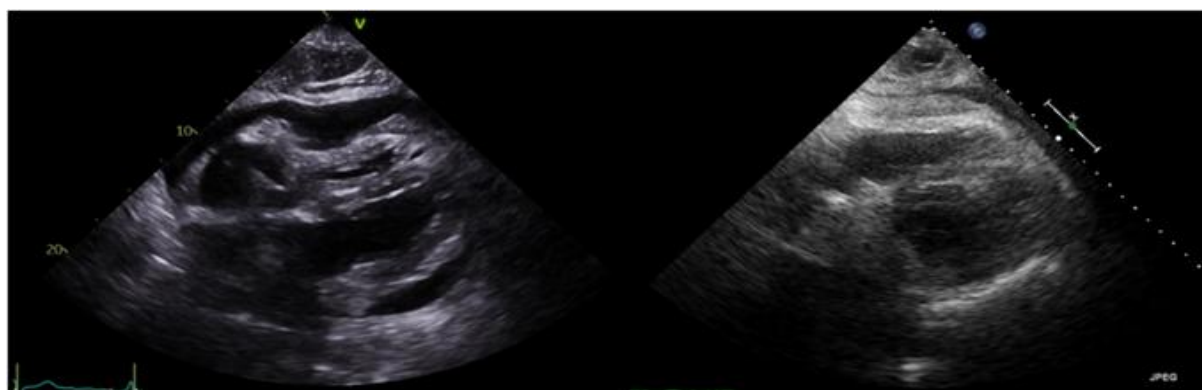


Figure 1. Initial TTE image(Left) and follow-up TTE image (Right). Collapsed right ventricle is shown at initial TTE image.

	On admission	Before admission (2 weeks ago)
Hemoglobin(g/dL)	3.4	7.9
Blood urea nitrogen(mg/dL)	87.1	58.8
Creatinine(mg/dL)	5.3	3.88
Cyclosporin(ng/dL)	201	166

Table 1. The result of laboratory tests that was performed on admission day and most recent outpatient follow-up day.