

Life-threatening cardiac tamponade complicating myo-pericarditis in COVID-19

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A 47-year-old presented with chest pain and breathlessness. She was positive for COVID-19. Echocardiogram showed cardiac tamponade, and pericardiocentesis was performed. This is the first reported case of COVID-19-associated cardiac tamponade.

A 47-year-old Afro-Caribbean with previous myo-pericarditis was admitted in March 2020 with breathlessness, chest pain, dry cough, and subjective fevers. She had no cardiovascular risk factors. An angiogram in 2017 had shown unobstructed coronary arteries.

On examination, she was afebrile (36.9°C), hypotensive (80/50 mmHg), and tachycardic (110 b.p.m.). A 12-lead ECG showed sinus tachycardia and concave infero-lateral ST elevation (*Panel A*). Chest X-ray showed mild pulmonary congestion (*Panel B*). Troponin T levels were 225 and 253 ng/L. Echocardiogram demonstrated normal left ventricular function and a global pericardial effusion with a maximum depth of 1.1 cm and no tamponade (*Panel C*). A nasopharyngeal swab specimen was sent for viral respiratory pathogens; all were negative except for COVID-19.

Despite initial i.v. fluid resuscitation, she did not respond and was transferred to the intensive treatment unit (ITU) for vasopressor support. Repeat echocardiogram revealed further accumulation of pericardial effusion to a maximal depth of 2 cm, with evidence of cardiac tamponade (*Panel D*). Her haemodynamic parameters worsened, including hypotension and tachycardia. Pericardiocentesis was performed in view of acute deterioration. Due to her clinical condition and infective status, it was deemed unsuitable to transfer her to the cardiac laboratory for fluoroscopic-guided pericardiocentesis. This was therefore performed on the ITU under echocardiographic guidance. Improvement in haemodynamic parameters was observed immediately. A total of 540 mL of serosanguinous fluid was drained and tested negative for COVID-19.

(*Panel A*) A 12-lead ECG shows concave ST elevation in infero-lateral leads. (*Panel B*) Chest X-ray shows mild pulmonary congestion and increased vascular markings in the right lower zone. (*Panel C*) Initial echocardiogram shows a small to moderate amount of pericardial effusion. (*Panel D*) Repeat echocardiogram shows further accumulation of pericardial fluid.

This case report highlights the first cardiac tamponade case in COVID-19. Cardiac tamponade is an important differential to consider in a deteriorating patient with COVID-19.

Conflict of interest: none declared.

