

CARDIAC TAMPONADE AFTER mRNA VACCINATION FOR SARS-CoV-2: A CASE SERIES

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Introduction

There have been increasing reports of myocarditis and pericarditis following vaccination for SARS-CoV-2. Most described cases are mild and self-limited, and only one that we could find described possible cardiac tamponade. We present two cases of life-threatening cardiac tamponade following vaccination for SARS-CoV-2.

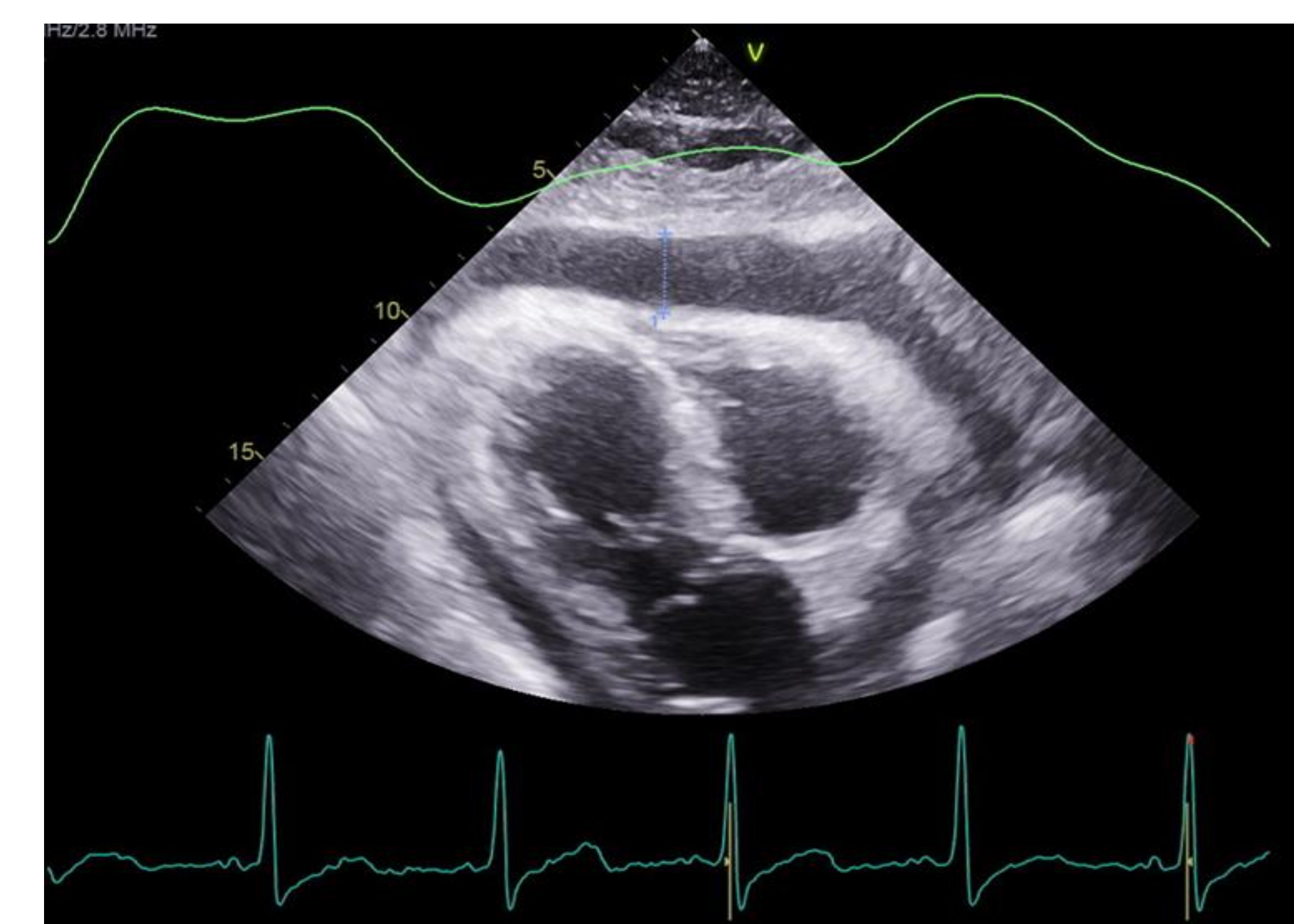
Case 1

- Seventy-five-year-old male with rheumatoid arthritis on weekly methotrexate and prednisone.
- Received his first dose of the Pfizer-BioNTech SARS-CoV-2 vaccine in January 2021.
- Two days later he was admitted for progressive, substernal chest pressure and found to have hypotension from cardiac tamponade.
- Pericardiocentesis removed 275 mL of straw-colored, exudative fluid with 14,140 nucleated cells/mL, 93% neutrophils, and 1% eosinophils.
- Fungal and bacterial pericardial fluid cultures were negative.
- Cytology was negative for malignancy.
- Serum negative for Epstein-Barr Virus (EBV) or Cytomegalovirus (CMV) viremia.
- He was discharged on colchicine and prednisone after resolution of symptoms and pericardial effusion.
- 3 weeks after his first dose, he had an uneventful second dose of the Pfizer-BioNTech vaccine.
- Unfortunately, 2 months later he was admitted with recurrent tamponade.

Case 2

- Sixty-six-year-old male with history of non-Hodgkin lymphoma in remission and coronary artery disease.
- In March 2021, 24 hours following his second dose of the Pfizer-BioNTech SARS-CoV-2 vaccination, he developed dyspnea and chest pain.
- Four days later he was admitted with pericardial effusion, which was treated medically with non-steroidal anti-inflammatory drugs.
- He was readmitted a week later with fevers, night sweats, and worsening chest pain.
- Echocardiogram showed a larger pericardial effusion and tamponade.
- Pericardiocentesis removed 400 mL of serosanguinous, exudative fluid with 1,191 cells, 46% neutrophils, and 4% eosinophils.
- Cytology was negative for malignancy.
- Fungal, bacterial, and mycobacterial cultures of the fluid were negative as were serum coccidioides serologies.
- EBV, CMV, and parvoviral serologies indicated past infection.
- He was discharged with a pericardial drain but was later readmitted with fevers.
- Echocardiogram only showed small pericardial effusion, which did not require drainage.

Figure 1



Trans-thoracic echocardiogram image from case 1 demonstrating large circumferential pericardial effusion.

Discussion

Given proximity to vaccination and lack of alternative explanation, SARS-CoV-2 vaccination associated-tamponade was a plausible explanation in both cases. Interestingly, neither individual had had previous tamponade or pericardial effusion, and both were negative for SARS-CoV-2 via nasopharyngeal swab. The severity of these cases is unique. Physicians should be alert to their possibility in patients presenting with dyspnea following SARS-CoV-2 vaccination.

References

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