

# Images in CAD

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## Spontaneous (dumbbell-shaped) coronary artery pseudoaneurysm after COVID-19 vaccination

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A 76-year-old male who underwent coronary stenting of the left anterior descending artery (LAD) and right coronary artery 11 years ago presented with acute chest pain that occurred on the day of admission. He reported receiving the second dose of the Pfizer-BioNTech vaccine the day before admission. ECG showed new T wave inversions in precordial leads and cardiac troponin I was elevated (507.3 pg/mL), prompting referral for coronary angiography (CAG). His CAG revealed a dumbbell-shaped coronary artery pseudoaneurysm [1] at the proximal LAD (Fig. 1a, yellow arrows). Coronary computed tomography angiography showed a pseudoaneurysm with mural thrombus at the proximal

LAD (Fig. 1b, proximal to the previous stent, maximal diameter: 26 mm, yellow arrow) and 3D reconstruction showed more clearly a bilobed coronary pseudoaneurysm (Fig. 1c, black arrow). LAD pseudoaneurysmorrhaphy, proximal endarterectomy, and obliteration and coronary artery bypass graft were performed (left internal mammary artery to LAD). An incision was made as shown in Fig. 1d, (black arrows). Of note, the patient did not have a history of Kawasaki disease and his prior angiogram did not show any aneurysms. Infrequent but important significant adverse events, such as myocarditis and pericarditis, have been reported after vaccination for COVID-19 with m-RNA vaccines. While the causal relationship between vaccination and the occurrence of a pseudoaneurysm in our patient cannot be proven, the temporal association raises the hypothesis that the patient's pseudoaneurysm may be related to the vaccine.

## Acknowledgements

### Conflicts of interest

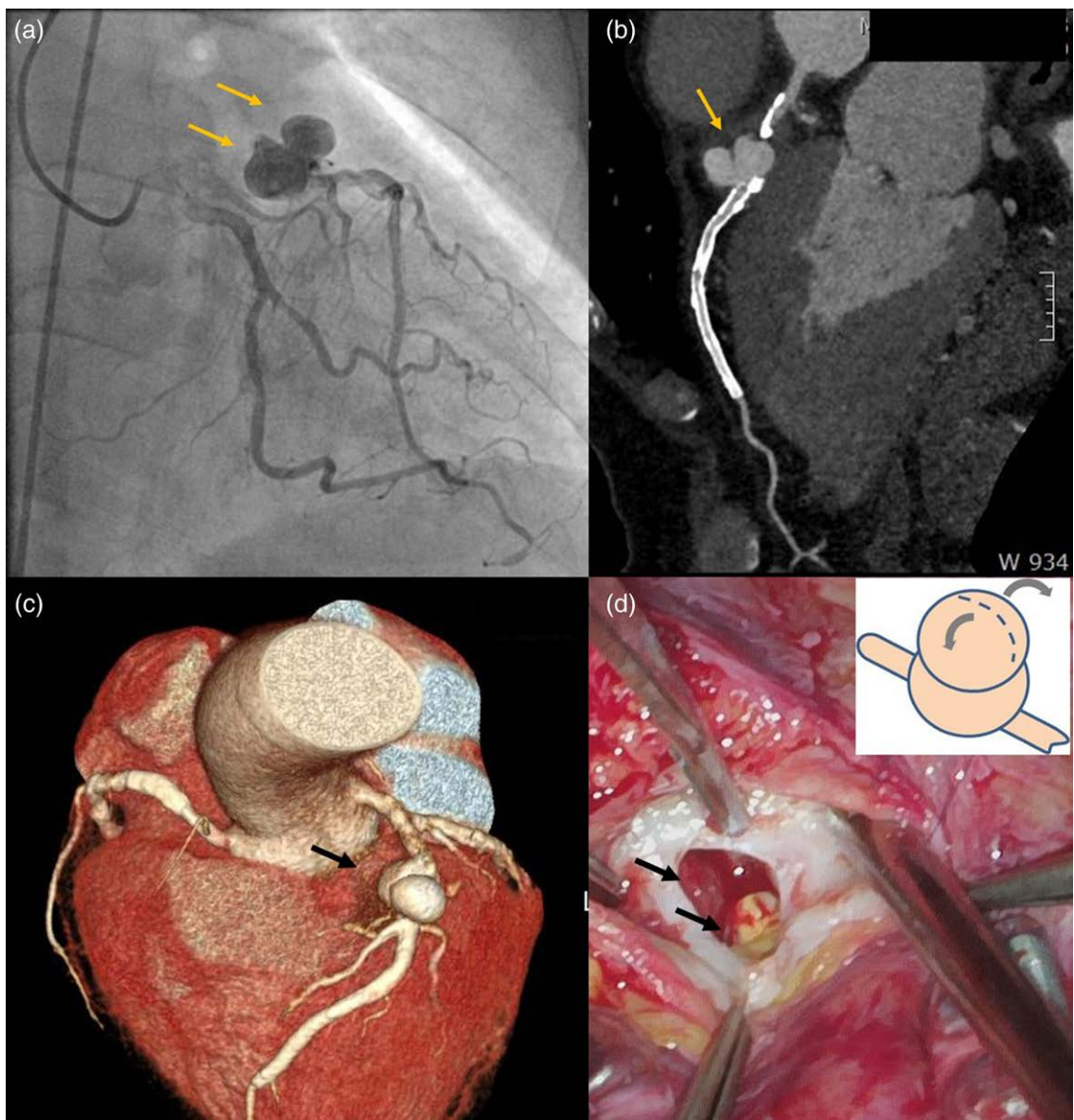
There are no conflicts of interest.

## Reference

- 1 Kar S, Weibel RR. Diagnosis and treatment of spontaneous coronary artery pseudoaneurysm: rare anomaly with potentially significant clinical implications. *Catheter Cardiovasc Interv* 2017; **90**:589–597.

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Fig. 1



(a) Coronary angiography showing a dumbbell-shaped coronary artery pseudoaneurysm in the proximal left anterior descending artery (yellow arrows). (b) coronary computed tomography angiography (CTA) showing pseudoaneurysm with mural thrombus at proximal left anterior descending artery (LAD) (proximal to previous stent, maximal diameter: 26 mm, yellow arrow), (c) 3D reconstruction of coronary CTA showing more clearly bilobed coronary pseudoaneurysm (black arrow). (d) Surgical image after incision and two heads of the huge pseudoaneurysm at proximal LAD (black arrows).