Cardiology in the Young

cambridge.org/cty

Fooled by a folded coronary artery?

Pitt O. Lim

Consultant Cardiologist, St George's Hospital, London, UK

Letter to the Editor

Cite this article: Lim PO (2024) Fooled by a folded coronary artery? *Cardiology in the Young* **34**: 465–466. doi: 10.1017/S1047951124000064

Received: 31 December 2023
Accepted: 5 January 2024
First published online: 19 January 2024

Keywords:
coronary artery compression; coronary anomaly; post-cardiotomy; CHD

Corresponding author:
Pitt O. Lim; Email: pitt.lim@stgeorges.nhs.uk

Warren et al.'s[1] report of sternal wire compression of the right coronary artery in a middle-aged woman who had prior congenital cardiac surgery as a child is thought-provoking. This woman has complex symptomatology including angina which was previously attributed to pericarditis. The authors are to be congratulated to have worked this out which is beyond the scope of general adult cardiologists, this woman likely to have seen over the years. There are three pertinent questions. First, how generalisable this is to other patients who also have sternal wires in place with angina. In this case, the right coronary artery has an unusual "unprotected out-of-groove" course abutting the sternum, is pushed forward from right heart dilatation, and in the absence of pericardial protection. Her pericardium was not approximated and closed after her surgery which caused fixing of the right coronary artery to the surrounding tissues from fibrotic healing. These 3 featural perfect storms are highly unlikely to come together again. Second, there does not appear to be any functional evidence of ischaemia from non-invasive imaging and coronary physiology. Although false-negative rates from these investigations would be high given the dynamic nature of the right coronary artery compression. The ease by which a single sternal wire removal results in symptomatic alleviation makes this report elegant. Third, external compression of the coronary artery in other settings could be underappreciated. One example is the anomalous left main coronary artery with an acute angle high takeoff from the sinotubular junction. This is usually dismissed as a challenging case of left coronary artery intubation in practice but can be extrinsically compressed by a dilated main pulmonary artery due to pulmonary arterial hypertension.[2] Figure 1 illustrates a young patient with congenital bicuspid aortic stenosis and aortic dilatation. Following cardiac surgery which included aortic grafting, the left main coronary artery was constricted. Thus, coronary artery compression should be entertained as a rare cause of cardiac ischaemia.

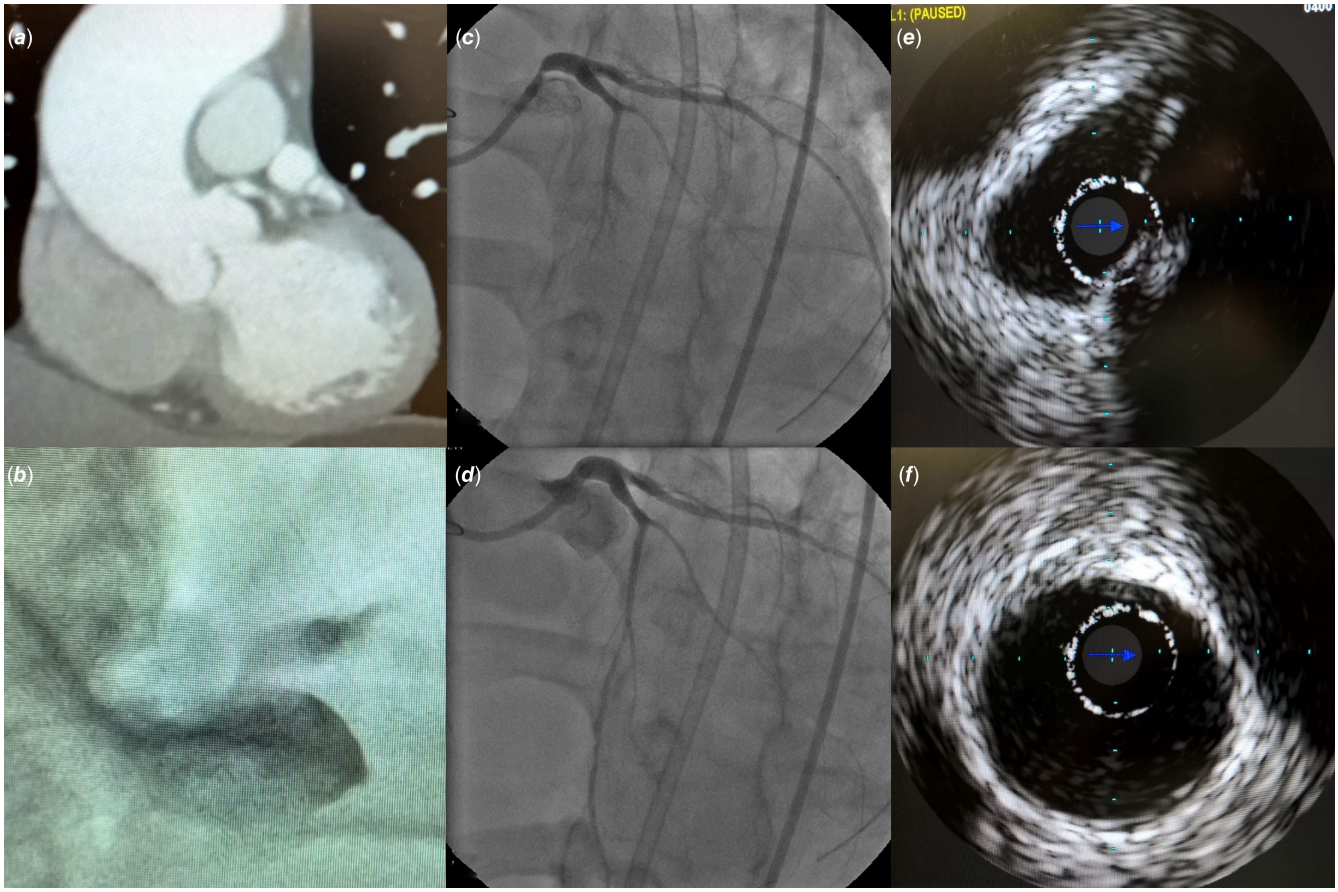

Figure 1. Post-cardiotomy left main coronary artery compression. (***a***) Pre-operative CT aorta shows the 30° high and shallow angle takeoff of the left main stem from the sinotubular junction, which appears "folded," abutting the main pulmonary artery on top. (***b***) Post-surgery myocardial infarction, non-selective coronary angiogram reveals the pulmonary trunk compressing on the left main stem and the tight ostial lesion on selective coronary angiogram (***c***), following stenting (***d***), and on IVUS, before stenting with a slit-like left main stem opening from extrinsic constriction (***e***), and after stenting (F).

References

1. Warren M, Numan M, Mallula K, Greenleaf C, Uppu SC. Chest pain due to coronary artery compression in an adult with CHD. Cardiol Young 2023: 1–3.
2. Labin JE, Saggar R, Yang EH, et al. Left main coronary artery compression in pulmonary hypertension. Catheter Cardiovasc Interv 2021; 97: E956–E66.

https://doi.org/10.1017/S1047951124000064 Published online by Cambridge University Press