

Right coronary artery spasm causing ventricular fibrillation and non-ST elevation myocardial infarction following radial artery cannulation

A 42-year-old lady with multiple cardiovascular risk factors and exertional angina was referred for percutaneous coronary intervention to a tight stenosis of her proximal left anterior

descending (LAD) coronary artery. The left circumflex (LCX) and right coronary arteries were mildly diseased.

The elective procedure was initiated via a right radial artery approach using a 6F radial sheath (Cook), which proved difficult to advance due to radial artery spasm. A Q4 guide catheter (Boston Scientific) was advanced to cannulate the left circulation. The lady reported chest discomfort. Inferior ST-elevation was evident on the cardiac monitor. Initial angiographic images revealed a significant LAD/D1 bifurcation lesion and areas of spasm in the LCX.

Attempts at repositioning the guide catheter were complicated by rigid spasm in the brachial and radial arteries. Gradual removal of the guide catheter was associated with intense pain. During this manoeuvre she developed multiple episodes of ventricular fibrillation requiring cardioversion, intravenous amiodarone and sedation. Between episodes, a Judkins right diagnostic catheter was advanced from a femoral artery approach. The right coronary artery was occluded. Her

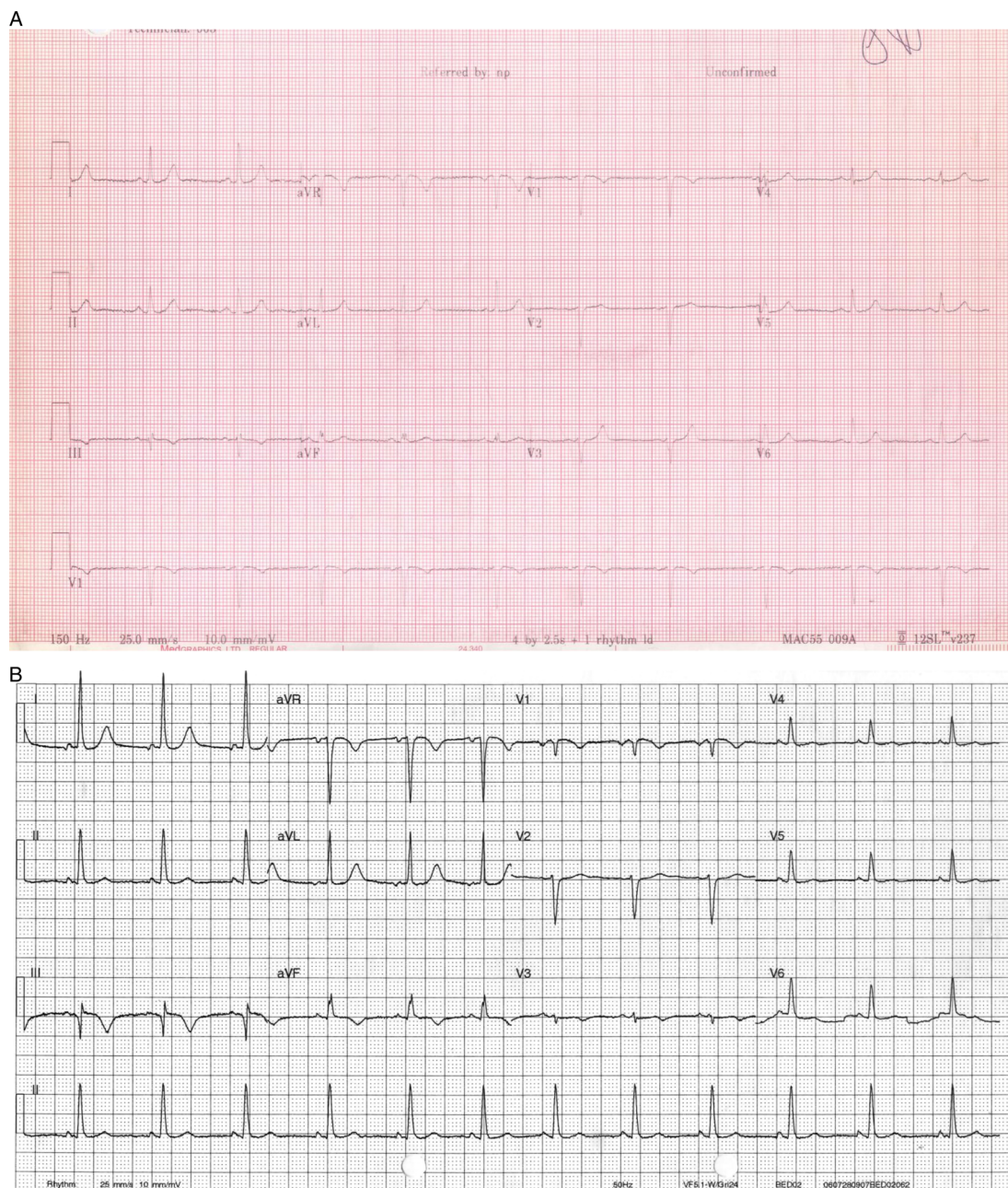


Figure 1 (A) Preprocedure electrocardiogram. (B) Postprocedure electrocardiogram with changes consistent with an inferior wall myocardial infarction.

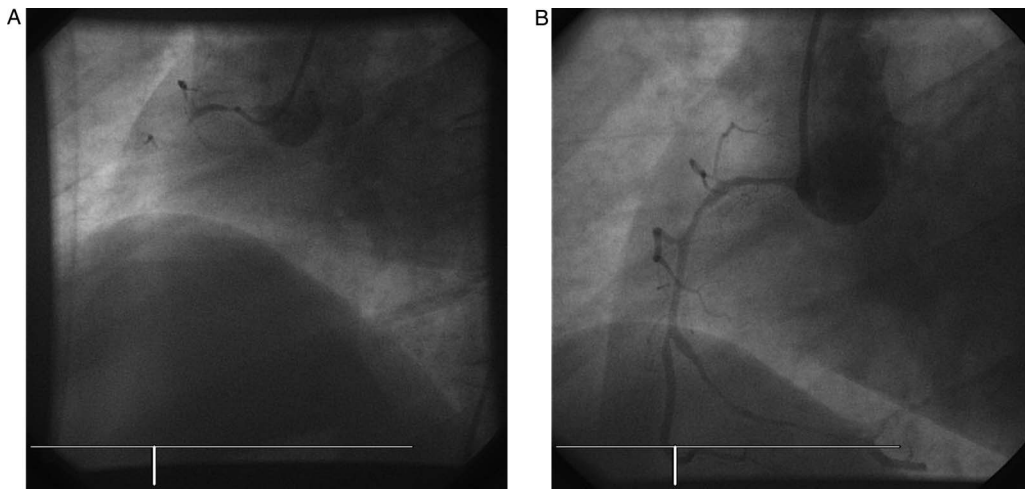


Figure 2 (A) Occluded right coronary artery on initial injection. (B) Subsequent injection of right coronary artery showing diffuse spasm.

condition stabilised with slow resolution of the ST changes (figure 1A,B). Repeat angiography confirmed that the vessel had reopened although generalised spasm was evident (figure 2A,B). She made a full recovery albeit with a significant rise in cardiac enzyme levels (Creatine Kinase MB 109 ug/L) confirming myocardial infarction.

DISCUSSION

Radial artery spasm is the most common complication in transradial coronary intervention occurring in 5–10% of cases, particularly in women with smaller diameter radial arteries.¹ Associated transient inferior ST elevation is recognised but there are no reported cases of angiographically demonstrable coronary artery spasm causing such severe sequel.

V J Karthikeyan, U Krishnan, N D Palmer

Department of Cardiology, Liverpool Heart and Chest Hospital, Liverpool, UK

Correspondence to Dr N D Palmer, Liverpool Heart and Chest Hospital, Liverpool L14 3PE, UK; nick.palmer@lhch.nhs.uk

Contributors NDP was the clinician responsible for the patient's care and conceived the idea for the paper. VJK collected the images and other data, obtained patient consent and wrote the manuscript. UK revised the manuscript and added intellectual content. All authors have read and approved the manuscript.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; internally peer reviewed.

To cite Karthikeyan VJ, Krishnan U, Palmer ND. *Heart Asia* Published Online First: [please include Day Month Year] doi:10.1136/heartasia-2013-010330

Heart Asia 2013;**0**:92–93. doi:10.1136/heartasia-2013-010330

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