

Ventricular Septal Mass Formation After Retrograde Chronic Total Occlusion Percutaneous Coronary Intervention

Sanjeev Bhattacharyya, MD, MRCP; Rajdeep Khattar, DM, FRCP;
Alistair C. Lindsay, MRCP, DPhil; Roxy Senior, MD, DM, FRCP; Carlo Di Mario, MD, PhD, FRCP

A 63-year-old woman with angina was admitted for percutaneous coronary intervention to a chronic total occlusion of the right coronary artery. Because 2 previous antegrade attempts had failed, the initial strategy was retrograde wiring of the multiple septal collaterals present. Fielder FC, Sion, and Sion Blue wires (Asahi, Japan) were used supported by a Corsair micro-catheter, but none of them could reach the distal right coronary artery because of the extreme tortuosity of the channels, especially in the last segment near the posterior descending artery (Figure 1A). An antegrade approach was then taken, successfully reaching the true lumen of the distal right coronary artery under contralateral guidance. Immediately after subsequent stent deployment an area of well-circumscribed and persistent contrast staining was noted, but no active contrast extravasation through collaterals could be observed either with antegrade or retrograde injection (Figure 1B). The patient developed quite intense chest pain, which responded to intravenous analgesics, but was hemodynamically stable and no visible pericardial effusion or left ventricular wall motion abnormalities could be identified with echocardiography. The day after, as a result of persistent symptoms in the absence of ECG changes, an echocardiogram was repeated and identified a 4.5×4.8-cm mass attached to the right ventricular (RV) aspect of the infero-basal interventricular septum. Trans-tricuspid Doppler showed no significant obstruction to RV filling. Myocardial contrast echocardiography demonstrated no perfusion of the mass or communication with the RV cavity (Figure 1C), suggesting an intramyocardial hematoma. Cardiac magnetic resonance imaging improved localization of hematoma, showing the mass protruding into the RV inlet (arrow) together with a small pericardial effusion (dashed arrow; Figure 1D). Computed tomography identified that the distal branches of the right coronary artery passed

over the inferior surface of the haematoma with no significant compression (Figure 1E). The patient's pain subsided within 48 hours. She was treated conservatively but kept in hospital under observation for a week. There was no growth, clear reduction in size of the hematoma, or RV inflow compromise. She was discharged with dual antiplatelet therapy (aspirin and clopidogrel). At 3 months post procedure, the patient reported being asymptomatic. Repeat cardiac magnetic resonance imaging at this time demonstrated a reduction in size of the mass. At 10 months post procedure, repeat cardiac magnetic resonance imaging showed almost complete resolution of the mass (Figure 2A–2C).

Coronary perforations during percutaneous coronary intervention are more commonly associated with leakage into the pericardium, but contained intramyocardial hematomas have been described as rare complications after wire rupture of delicate septal collateral channels. In the absence of visible contrast extravasation a conservative strategy is warranted.^{1,2}

Disclosures

None.

References

1. Sianos G, Werner GS, Galassi AR, Papafaklis MI, Escaned J, Hildick-Smith D, Christiansen EH, Gershlick A, Carlino M, Karlas A, Konstantinidis NV, Tomasello SD, Di Mario C, Reifart N; EuroCTO Club. Recanalisation of chronic total coronary occlusions: 2012 consensus document from the EuroCTO club. *EuroIntervention*. 2012;8:139–145.
2. Galassi AR, Tomasello SD, Reifart N, Werner GS, Sianos G, Bonnier H, Sievert H, Ehlrad S, Bufe A, Shofer J, Gershlick A, Hildick-Smith D, Escaned J, Erglis A, Sheiban I, Thuesen L, Serra A, Christiansen E, Buettner A, Costanzo L, Barrano G, Di Mario C. In-hospital outcomes of percutaneous coronary intervention in patients with chronic total occlusion: insights from the ERCTO (European Registry of Chronic Total Occlusion) registry. *EuroIntervention*. 2011;7:472–479.

From the Department of Cardiology, Royal Brompton & Harefield NHS Trust, London, UK.

Correspondence to Carlo Di Mario, MD, PhD, FRCP, NIHR Cardiovascular Biomedical Research Unit, Royal Brompton Hospital, Sydney Street, London, SW3 6NP, UK. E-mail c.dimario@rbht.nhs.uk

(*Circulation*. 2013;128:2167–2168.)

© 2013 American Heart Association, Inc.

Circulation is available at <http://circ.ahajournals.org>

DOI: 10.1161/CIRCULATIONAHA.113.001476

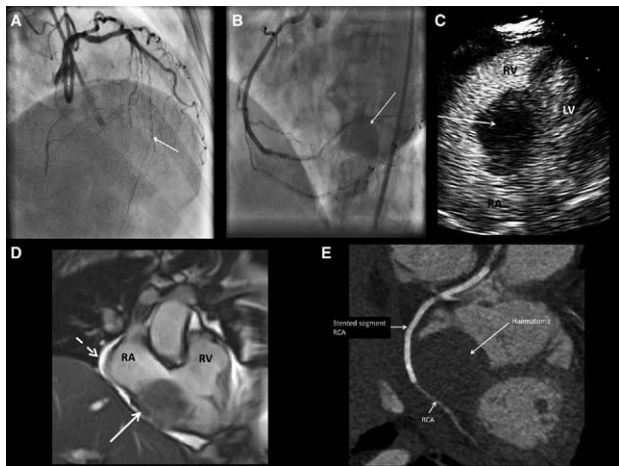


Figure 1. **A**, Coronary angiogram. Extreme tortuosity of the channels of septal collateral vessels (arrow). **B**, Right coronary artery. Persistent contrast staining post stent deployment (arrow). **C**, Myocardial contrast echocardiography. Apical 4-chamber view. Microbubble contrast opacifies the right atrium (RA) and right ventricle (RV). Large 4.5×4.8-cm mass (arrow) is seen mass attached to the RV aspect of the infero-basal interventricular septum. No perfusion of mass with micro-bubbles suggests it is hematoma with no communication to cavity. **D**, Cardiac magnetic resonance imaging refined anatomical localization of the hematoma showing protrusion of the mass into the RV inlet (arrow). Small pericardial effusion was identified (dashed arrow). **E**, Cardiac computed tomography localizes hematoma (arrow) and confirms no compromise of right coronary artery (RCA).

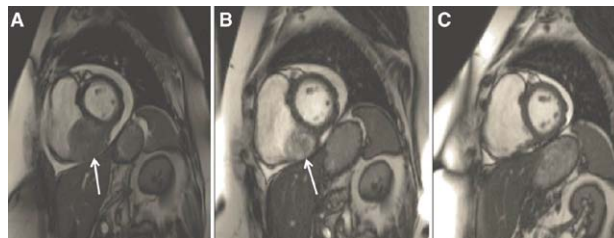


Figure 2. Cardiac magnetic resonance imaging of the mass (arrow) at baseline (**A**), 3 months (**B**), and 10 months (**C**). There is progressive reduction in size of the mass by 3 months (**B**) and almost complete resolution of the mass by 10 months.