Full Polymer Jacketing for Long-Segment Spontaneous Coronary Artery Dissection Using Bioresorbable Vascular Scaffolds

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A 58-year-old man was referred to us after thrombolysis for acute inferior wall myocardial infarction. A coronary angiogram showed intraluminal filling defects extending from the proximal to distal right coronary artery (RCA) suggestive of spontaneous coronary artery dissection (SCAD) with thrombus (Fig. 1A, Online Video 1). He was managed with intravenous tirofiban infusion along with oral antiplatelets. A check angiogram after 4 days showed mild clearing of the filling defects (Fig. 1B, Online Video 2). Optical coherence tomography run from the distal to proximal RCA showed dissection flaps (asterisk) along with organized and recanalized thrombus (hash mark).

Figure 1. Angiogram and OCT of Long-Segment RCA SCAD

(A) Coronary angiogram showing intraluminal filling defects extending from the proximal to distal right coronary artery (RCA) (Online Video 1). (B) Mild clearing of the filling defects on the check angiogram after anticoagulation for 3 days (Online Video 2). (C) Optical coherence tomography (OCT) showing a large dissection flap involving 2 quadrants. (D and E) OCT showing dissection flaps and thrombus. (F) Final angiogram after 4 bioresorbable vascular scaffolds in the RCA showing clearing of filling defects with a smooth contour (Online Video 3). SCAD = spontaneous coronary artery dissection.
extending all the way from the proximal to distal RCA (Figs. 1C to 1E). Three 3 × 28-mm bioresorbable vascular scaffolds (BVS) (Absorb, Abbott Vascular, Santa Clara, California) were deployed from the distal to proximal RCA, and another 3.5 × 18-mm BVS was deployed in the proximal RCA covering the ostium to establish good Thrombolysis In Myocardial Infarction flow grade III (Fig. 1F, Online Video 3). There were no risk factors for SCAD in this patient.

SCAD is a rare cause of acute coronary syndrome, with an incidence of 0.2% among those who come for coronary angiography (1). Thrombolysis in SCAD could lead to propagation of the hematoma and the tear, which could be the reason for the long-segment tear in our case (2). Nonocclusive tears can be managed conservatively because spontaneous healing is common (3). For long-segment tears, percutaneous coronary intervention covering the entire dissected segment is preferred over spot stenting because the latter could lead to squeezing of the hematoma and extension of the dissection. Because the tendency for healing in SCAD is high, temporary scaffolding with BVS can be preferred over stents, especially for long segments, so as to avoid a full metal jacket.

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REFERENCES

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APPENDIX
For supplemental videos, please see the online version of this article.