Honeycomb-like appearance of hazy coronary lesions: OCT image report of a recanalized thrombus

Georges M. Khoueiry*, Patrick Magnus, Bruce J. Friedman, and Aaron V. Kaplan

Cardiac Catheterization Laboratory, Heart and Vascular Center, Dartmouth-Hitchcock Medical Center/Geisel School of Medicine at Dartmouth, Lebanon, NH, USA

* Corresponding author. Department of Cardiology, Dartmouth-Hitchcock Medical Center, One Medical Center Drive, Lebanon, NH 03756-0001, USA. Tel: + 1 603 650 5077; Fax: + 1 603 650 0523, E-mail: khoueiry_gm@hotmail.com

An 80-year-old female was transferred to our cardiac catheterization laboratory with an ST-elevation myocardial infarction and cardiogenic shock. An electrocardiogram demonstrated inferior ST elevations with deep ST depressions in V1–V3, suggestive of posterior infarction. An echocardiogram showed inferior and lateral wall motion abnormalities.

Coronary angiography demonstrated high-grade lesion with thrombolysis in myocardial infarction II flow in the left circumflex (LCx) artery. A long eccentric hazy lesion with multiple linear filling defects with normal flow was also noted in the proximal right coronary artery (RCA; see Supplementary data online, Video S1). While the culprit lesion in the LCx was successfully stented, the RCA was further evaluated with optical coherence tomography (OCT).

OCT of the RCA lesion was performed using a LightLab C7 Dragonfly catheter, with offline three-dimensional (3D) analysis. Serial cross-sections and longitudinal reconstruction demonstrated a ‘honeycomb’ appearance within the lumen, and multiple intraluminal communicating channels separated by high signal intensity septa (see Supplementary data online, Video S1).

These findings are most consistent with recanalization of organized thrombus predating the acute presentation. The three-dimensional reconstruction further demonstrates the complexity of this structure (Panel E).

Based on the clinical presentation with cardiogenic shock and some data suggesting that similar lesions are physiologically significant, the RCA lesion was stented. The remainder of the patient’s hospital course was uneventful.

We believe this is a rare case of a chronic recanalized thrombus that is very well illustrated on OCT images. This case demonstrates the utility of OCT in clarifying the aetiology of lesions which are ambiguous on angiography.

Conflict of interest: none declared.

Panel A: Angiogram in the left anterior oblique projection of the RCA showing a heterogeneous hazy proximal lesion with multiple linear filling defects. Segment demarcated by arrows corresponds to the OCT visualized segment shown. Panel B: OCT with a cross-sectional view of the proximal RCA lesion showing a ‘honeycomb’ appearance within the lumen, representing a recanalized thrombus. Panel C: Another cross-sectional view on OCT showing multiple intraluminal channels separated by high signal intensity septa (blue arrow). Panel D: A longitudinal section with red demarcation arrows corresponding to transverse cuts shown in Panels B and C. Panel E: A 3D OCT reconstruction image demonstrating multiple luminal channels which appear to communicate.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author 2014. For permissions please email: journals.permissions@oup.com.