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Research Letter

A case of recurrent unstable angina – Insight from optical coherence tomography imaging

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Intimal tear
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A B S T R A C T

Intimal tear is a rare cause of ACS and is angiographically indistinguishable. OCT provides unprecendented insight to the mechanism of ACS with its near tissue level definition. This is a case of unstable angina with non-significant RCA lesion. OCT showed intimal tear/flaps with evidence of thrombi, thus clinching the diagnosis.

Dear Editor,

Intimal tear is a rare cause of ACS and is angiographically indistinguishable. OCT provides unprecedented insight to the mechanism of ACS with its near tissue level definition. We present a case of 63-year-old male, hypertensive, diabetic and smoker presented with recurrent episodes of chest pain. Dynamic ST-T changes were evident on ECGs taken elsewhere. His coronary angiogram revealed non-significant lesion in proximal right coronary artery with mild distal ectasia (Video). Left coronary system was normal. Patient was discharged on antiplatelets, statin and diltiazem. However, patient had several episodes of recurrent chest pain accompanied by ECG changes. He was taken up for intra vascular imaging in view of intractable symptoms, where the optical coherence tomography (Fig. 1, Video) showed evidence of intimal tears (star, D, F, G, H) seen as multiple areas of intimal dehiscence with super imposed white thrombi (white arrow, B) and intimal tear/fissure with red thrombus (black arrow, C). Patient was treated with a drug eluting stent and remained asymptomatic at two-year follow up – Fig. 2.

Plaque rupture, plaque erosion and calcified nodule are the most frequently identified causal mechanisms in ACS.[1] Patients with plaque rupture often present with STEMI where as plaque erosion and calcified nodule are associated with NSTE-ACS.[1] Recent OCT studies suggested that a milieu of other conditions such as dissection, haematoma, intimal fissure, etc. can also cause NSTE-ACS. In a study by Park et al.[2] intimal tear, and micro thrombi were shown be the major abnormal findings of OCT in patients with ACS.

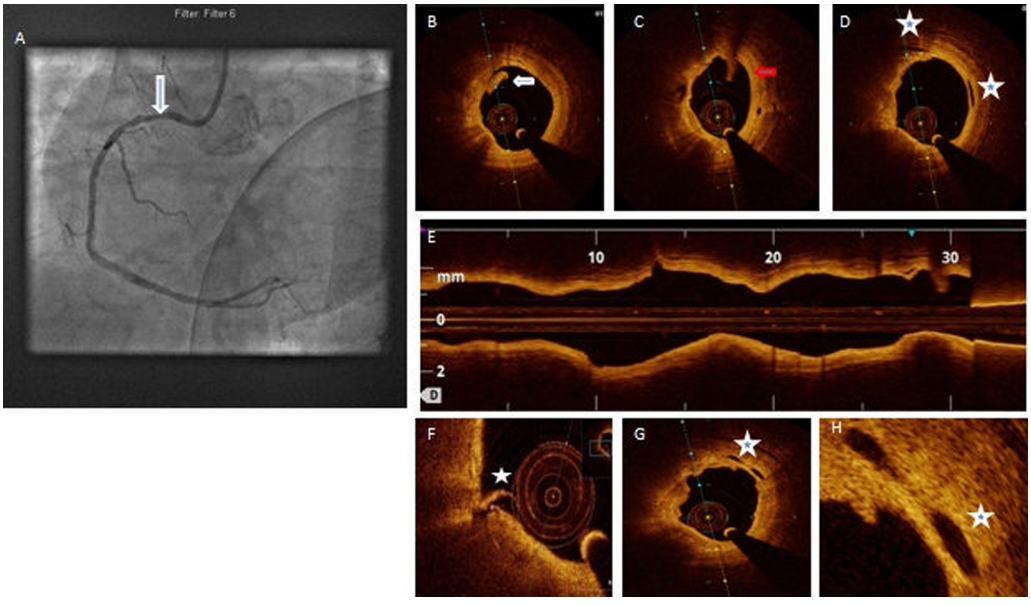

Fig. 1. Angiographic image of RCA showing non-significant proximal lesion (A).

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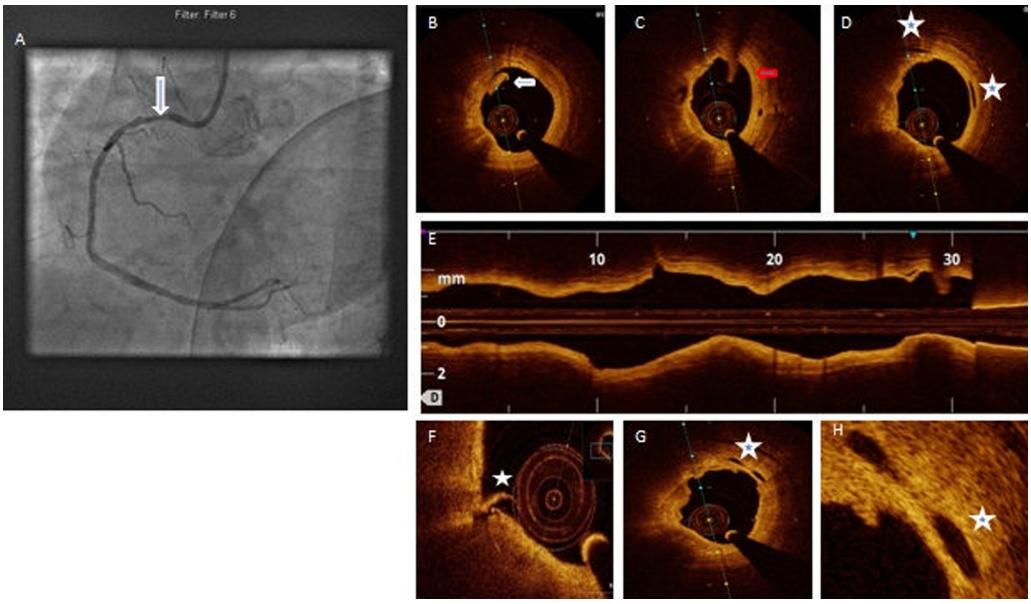

Fig. 2. Serial OCT images from distal to proximal RCA indicate no plaque rupture or erosion. Cross-sectional images show homogenous fibrous plaque with overlying white thrombus (B), intimal fissure with red thrombus (C) and intimal tear/flaps seen as dehiscence of intimal layer from the vessel wall (F)/media (D, G and H). The lumen surface is irregular indicating probable healed intimal tears. Longitudinal view (E) showing red thrombus and intimal tear. White arrow: white thrombus; red arrow: red thrombus and intimal fissure; star: intimal tear/flaps.

Intimal tears predispose to vasospasm and thrombus formation over the intimal disruption.[3] In our patient, OCT showed intimal tears/fissure with evidence of thrombi, thus clinching the diagnosis.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.ihj.2016.07.001.

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