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Letter to the Editor

CT-scan heralded left main catheter-induced dissection, successfully treated with PCI

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Catheter-induced left main coronary dissection may be a disastrous, life-threatening complication. A 66-year-old man with previous refractory AF treated with radiofrequency catheter ablation, was admitted for cardiac evaluation. He was asymptomatic, in good clinical conditions. The EKG showed regular rhythm with complete LBBB. A multislice coronary CT-scan was performed and a soft, lipid-rich, ulcerated plaque was evidenced at the distal third of the left main (Fig. 1). The patient underwent elective coronary angiogram, confirming an ulcerated lesion at the distal portion of the left main (Fig. 2A). The selective left coronary dye injection, the inadvertent deep seating of the diagnostic catheter into the left main coronary artery and the consequent mechanical trauma due to its tip, resulted in contrast-staining at the left main stem and vessel wall linear dissection involving both the left circumflex and the left anterior descending coronary artery ostium (Fig. 2B). Fast atrial fibrillation and ST elevation in the anterolateral leads appeared on the EKG monitor together with hypotension (AP 90/50 mm Hg) and chest pain. Intravascular ultrasound (IVUS) immediately revealed a long intimal tear involving the left anterior descending artery, the distal third of the left main and the left circumflex artery. A prompt IVUS-guided PCI intervention was performed with direct, elective, sirolimus-eluting stent implantation on left main-LCx (Cypher 13 mm, ∅3.5) and on LAD ostium (Cypher 13 mm, ∅3.5), according to the "V-stenting" technique. Optimal coronary flow and angiographic result were obtained, with a prompt patient salvage (Fig. 2C). Three months after the procedure the patient is clinically well and asymptomatic.

Acute iatrogenic dissection of the left main coronary artery during coronary angiography or angioplasty is a rare but well known life-threatening complication [1–3]. The mechanical trauma induced by catheter tip during handling or vigorous injection of contrast medium at the site of an ulcerated plaque, may serve as an entry point for pulsatile blood flow, leading to progressive retrograde dissection or to complete coronary occlusion [4,5]. In our case, the presence of electrical and hemodynamic instability was a clear indication for immediate intervention. Direct stenting of the entry point was effective in sealing the coronary dissection and preventing retrograde aortic extension. The morphologic characteristics of the left

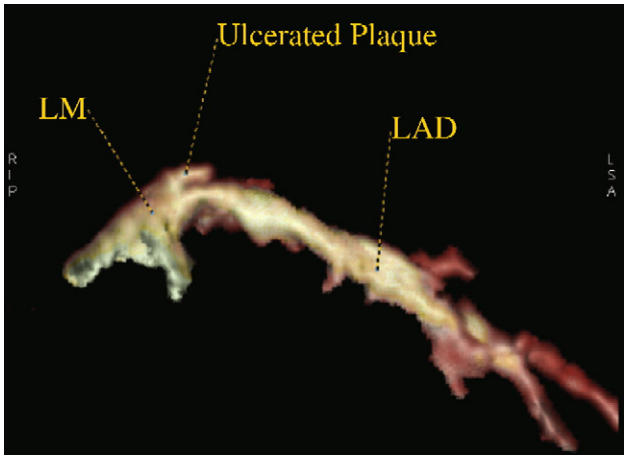

Fig. 1. CT-scan volume rendering image with distal left main ulcerated plaque.

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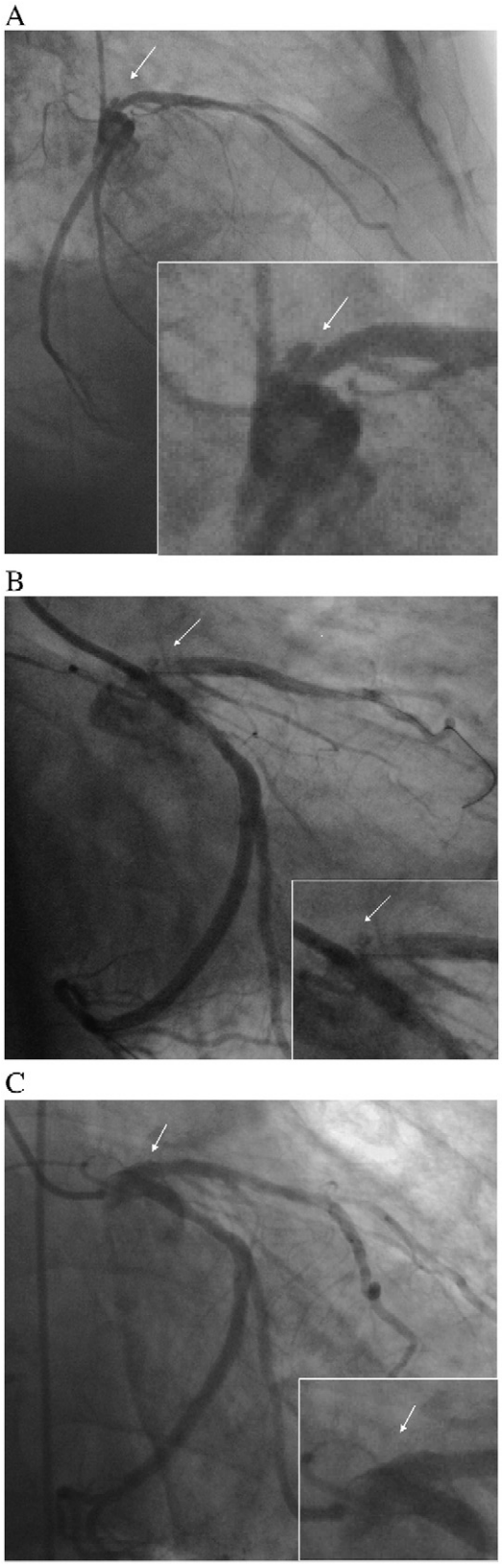

Fig. 2. (A) Left coronary angiography (45° RAO, 20° cranial) showing distal left main complex, ulcerated plaque (arrow). (B) Left anterior descending (LAD) and left circumflex (LCx) coronary arteries retrograde dissection (arrow) (30° RAO projection). (C) Final angiographic result (arrow) after stenting (30° RAO projection).

main plaque obtained with CT-scan demonstrated to be equivalent to the angiographic baseline image and the lipid-rich core plaque revealed to be a strong predictor for coronary dissection.

References

[1] Kennedy JW, Baxley WA, Bunnel IL, et al. Mortality related to cardiac catheterization and angiography. Cathet Cardiovasc Diagn 1982;8:323–40.
[2] Herman WR, Foley DP, Rensing BJ, et al. Usefulness of quantitative and qualitative angiographic lesion morphology, and clinical characteristics in predicting major adverse cardiac events during and after native coronary balloon angioplasty. Am J Cardiol 1993;72:14–20.
[3] Zelinger AB, Shuluff S, Pouget JM. Significant left main stenosis following asymptomatic dissection during coronary angiography. Chest 1983;83:568–9.
[4] Slack JD, Pinkerton CA, Van Tassel JW, et al. Left main coronary artery dissection during percutaneous coronary angioplasty. Cathet Cardiovasc Diagn 1986;12:255–60.
[5] Awadalla H, Salloum JG, Smalling RW, Sdringola S. Catheter-induced dissection of the left main coronary artery with and without extension to the aortic root: a report of two cases and a review of the literature. J Interv Cardiol 2004;17:253–7.

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