

Images in CAD

Natural history of spontaneous coronary dissections

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Image in CAD

Spontaneous coronary artery dissection (SCAD) represents a significant non-atherosclerotic cause of acute coronary syndrome (ACS) in predominantly young to middle-aged women. It is fundamental to recognize this distinct pathophysiological entity because the management is different compared to ACS caused by atherosclerotic etiology [1].

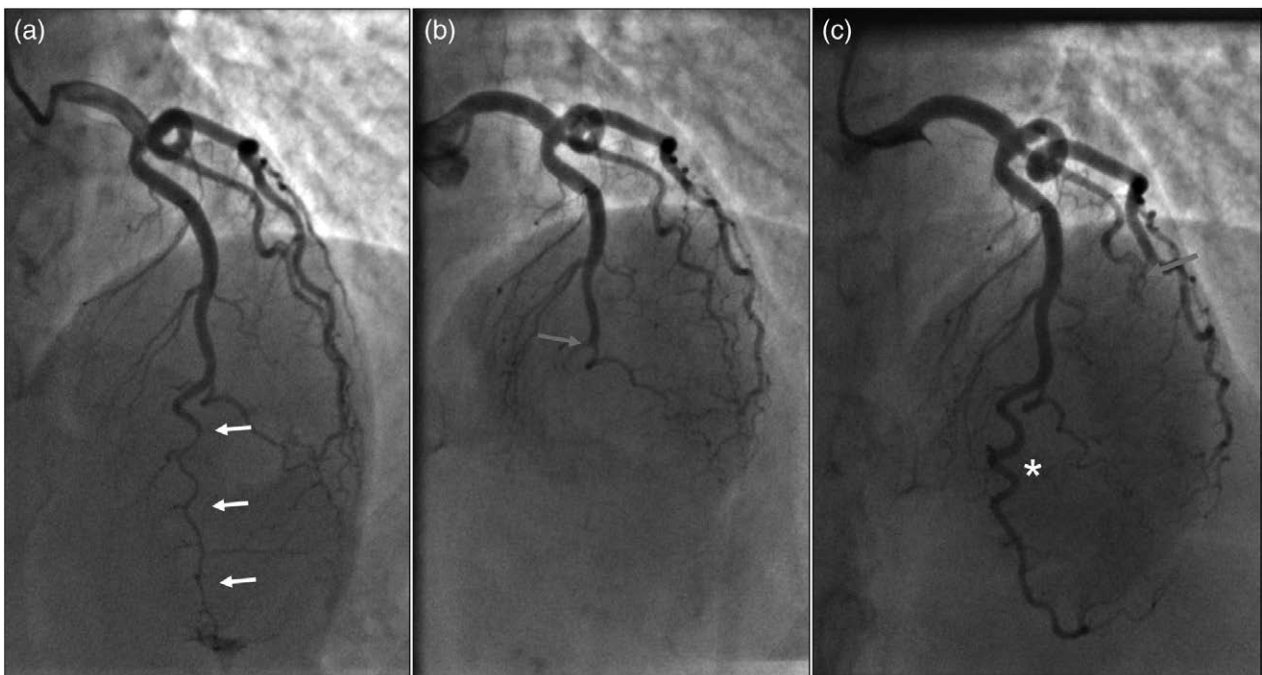
In Fig. 1a, the left descending coronary artery (LAD) of a 42-year-old woman admitted for anterior non-ST elevation myocardial infarction; LAD showed a diffuse narrowing of the distal segment (white arrows) diagnostic for a type 2b coronary dissection [1] (Video 1, Supplemental digital content 1, <http://links.lww.com/MCA/A300>). The patient was treated conservatively.

In Fig. 1b, the coronary angiography of the same woman admitted 10-year later for a transient chest pain, associated with anterior T-wave inversion and apical hypokinesia (Video 2, Supplemental digital content 2, <http://links.lww.com/MCA/A301>). The mid LAD showed a total occlusion (red arrow) with a weak collateral circulation in the very distal segment (Video 3, Supplemental digital content 3, <http://links.lww.com/MCA/A302>). Although a vessel occlusion was present, the patient was pain-free, without sign of on-going severe ischemia, hemodynamically stable and with involvement of a distal coronary segment suggestive of type 4 variant dissection; therefore the patient was managed conservatively.

In Fig. 1c, the angiography of the same woman admitted 10 months later for recurrence of chest pain with transient slight ST elevation (1 mm) in D1-AVL leads and normal kinetic at the echocardiogram. LAD was normal, confirming the natural history of spontaneous healing of SCAD (asterisk) (Video 4, Supplemental digital content 4, <http://links.lww.com/MCA/A303>). Interestingly a mid-occlusion of first diagonal branch was detected (red arrow) and new diagnosis of SCAD was made.

Like in the presented images, angiographic features associated with SCAD include predilection for more distal

Fig. 1



coronary segments, usually with increased coronary tortuosity and absence of co-existent atherosclerosis. Moreover, a previous history of SCAD is an important element because recurrences of SCAD are relatively frequent (10.4%) [2].

In the absence of high-risk features such as ongoing ischemia, left main dissection, electrical or hemodynamic instability, conservative therapy should be the first-line treatment strategy [1]. In this specific setting coronary instrumentation should be avoided given the high risk of iatrogenic dissection in SCAD patients [3]. Intracoronary imaging (IC) may have a role when angiographic diagnosis is uncertain and when it is believed that IC can be safely undertaken; indeed IC has potential risks, including extending the coronary dissection with imaging catheter.

Guideline medical therapies administered for ACS have not been specifically studied in SCAD, and further data

aimed to optimize medical management are needed because long term cardiovascular events rates can be high, and are reported to be 15%–37% at 5–7 years and estimated at 50% at 10 years [1].

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

References

- 1 Saw J, Mancini GBJ, Humphries KH. Contemporary review on spontaneous coronary artery dissection. *J Am Coll Cardiol* 2016; **68**:297–312.
- 2 Saw J, Humphries K, Aymong E, Sedlak T, Prakash R, Starovoytov A, Mancini GBJ. Spontaneous coronary artery dissection: clinical outcomes and risk of recurrence. *J Am Coll Cardiol* 2017; **70**:1148–1158.
- 3 Prakash R, Starovoytov A, Heydari M, Mancini GBJ, Saw J. Catheter-induced iatrogenic coronary artery dissection in patients with spontaneous coronary artery dissection. *JACC Cardiovasc Interv* 2016; **9**: 1851–1853.