Multiple Spontaneous Coronary Artery Dissection Associated With a Left Main Coronary Artery Lesion Treated by Stenting. Late Multiple Stent Fractures Detected by Multislice CT

To the Editor:

We present a rare case of a young patient with coronary risk factors who is a sporadic cocaine user who presented with an acute coronary syndrome with a lesion in the left main coronary artery (LM) and multiple spontaneous coronary artery dissections (SCAD) that were treated with long, overlapping sirolimus-eluting stents. At 9 months, complete circumferential fractures that were unrelated to any complications were found using a 64-slice computed tomography. Based on this case, two interesting aspects are discussed: the association between a LM lesion and multiple SCADs treated percutaneously with a stent, and the diagnosis and long-term clinical impact of the appearance of multiple stent fractures.

A 44-year-old smoker sporadic cocaine user male patient with hypertriglyceridaemia came into the emergency unit due to chest pain. A single photon emission computed tomography (SPECT) with ^{99m}Tc-mibi was performed, which demonstrated extensive anterolateral ischaemia. The coronary angiogram revealed a severe ostial lesion in the LM and multiple spiral SCADs at the level of the medial and distal left anterior descending artery (LAD) and medial and distal first right diagonal (Figures, A and B). The medial-distal LM was refilled with heterogeneous coronary collateral circulation (Figure, B). During catheterization, the patient began to have chest pain and hypotension, so a 4×12mm paclitaxel-eluting stent was placed directly in the main LCA and three sirolimus-eluting stents, overlapping at the level of the LAD (distally to proximally: 3×33, 3×28, and 3.5×28.mm) with post-dilation using a 3.75×8 mm balloon. The final result was satisfactory on angiogram and intravascular ultrasound (IVUS), and it was confirmed that there were no spaces between the stents, with good apposition and symmetry and no distortion (Figure, C). The right coronary artery was not treated since there was no lower ischaemia on SPECT with ^{99m}Tc-mibi. Nine months after the procedure, the presence of multiple circumferential fractures in 2 stents was detected by 64 CT scans (1 fracture in the medial and 2 fractures in the distal) (Figure, D). After 18 months, the patient remained asymptomatic and under treatment with dual antiplatelet therapy.

The aetiology of SCADs can be divided into atherosclerotic and non-atherosclerotic; this is usually more common in young women without risk factors and during pregnancy and peripartum. Atherosclerotic SCADs probably have a better prognosis due to the development of collateral circulation in chronic coronary artery disease.[1] Even though the aetiological role of sporadic cocaine consumption is more than probable in this case, the SCADs are atherosclerotic given that the patient had diffuse atheromas both angiographically as well as by IVUS, and the chronicity can be deduced by so marked collateral circulation as well as having 2 coronary risk factors. Even though IVUS was not performed prior to the procedure, it is unlikely that the LM lesion was another coronary artery dissection or haematoma given that there was no IVUS evidence of involvement after the stent in the medial-distal segment of the proximal LM or LAD other than diffuse atheromatosis. One can also speculate that percutaneous treatment of atherosclerotic SCADs with a stent is more favourable than treatment in non-atherosclerotic SCADs in which propagation of the dissection and/or the coronary haematoma is common and may be fatal.[1]

Other curious factors are the fractures of the sirolimus-eluting stents in the medium term. This is a rare complication with an approximate incidence of 2.5% that involves high risk of focal restenosis.[2,3] In this instance, the sharp angulations in the medial segment of the LAD that lead to sheer forces at these points, the high-pressure post-dilation and the use of long overlapping stents were probably predisposing factors for fracture. In addition, there are other factors described in the literature such as the location of saphenous grafts, at the level of the right coronary artery, and bifurcations in the

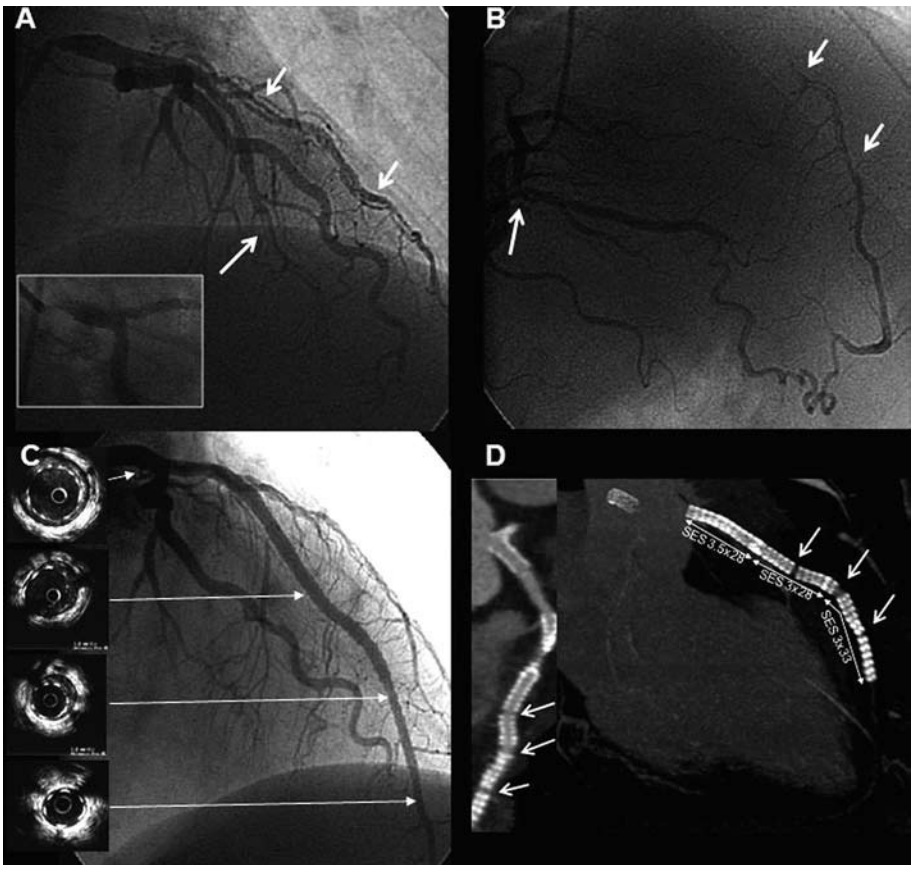

Figure. A: angiogram of the left system which reveals the dissections in the medial and diagonal anterior descending artery; the trunk lesion is magnified in the box. B: the right coronary angiogram reveals dissection in the distal segment and the collateral circulation to the left anterior descending artery (the arrows indicate the dissections). C: the left coronary angiogram reveals the final result and the IVUS images in the boxes reveal correct apposition and expansion of the stents. D: 64-slice computed tomography illustrates the three fractures, 1 in the medial and 2 in the distal portion. SES indicates Sirolimus-eluting stent.

stent structure; the Cypher (Cordis, Johnson & Johnson) is the most frequently described and it has been proposed that the closed-cell design may be a determining factor.[2,3] Initially, in our case, this complication was not associated with restenosis, though the long-term consequences are unknown. As we have shown, multislice CT is a technique that is adequate for diagnosis and follow-up of this rare complication.

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