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IMAGES IN CARDIOLOGY

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Parallel stenting using two sirolimus-eluting stents in an ectatic coronary artery stenosis

With the introduction of the drug-eluting stent (DES), re-stenosis rates have been reduced. In saphenous vein graft or ectatic coronary artery disease due to large vessel diameter their use is precluded. We report a challenging case of implantation of two sirolimus-eluting stents (SES; Cypher; Cordis) parallel to each other in an ectatic vessel.

A coronary angiogram (CAG) and intravascular ultrasound (IVUS) examination carried out on a 57-year-old man with unstable angina showed severe eccentric stenosis in the ectatic proximal left anterior descending artery (panel A). The lesion was predilated by a “parallel ballooning” technique. Two 3.5×18 mm SES were simultaneously deployed (upper and lower SES; 22 atm each; panel B). Final angiography and IVUS showed two widely patent stents without underexpansion or malposition (panel D). At 1 month, the patient presented with rest angina, and subsequent CAG showed patent parallel stents, but the acetylcholine provocation test showed significant diffuse vasospasm distal to the ectatic portion with typical chest pain (panel E); a 200 µg intracoronary nitroglycerine injection reversed the vasospasm and the chest pain. The 6 month routine CAG showed a peculiar membrane in the new stent carina, which is a similar observation to that after the kissing stenting in the left main bifurcation lesion (panel F). This membrane does not seem to be related to clinical events.

In lesions which have a large reference diameter one can consider parallel stenting using DESs as a new intervention strategy. It also depicts the association of vasospastic angina with coronary ectasia.

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Coronary angiogram showing severe eccentric stenosis in the proximal left anterior descending artery at baseline (panel A), during parallel stenting (panel B). Fluoroscopic visualisation of two implanted parallel SESs (panel C). Post stenting angiogram with intravascular ultrasound delineation of superior and inferior stents (panel D). One month follow-up angiogram showing diffuse severe vasospasm with acetylcholine injection (panel E). Six month follow-up angiogram showing the new membrane between the two stents (arrow, panel F).