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Management of Medina 0.1.0 left main bifurcation disease with crossover stenting strategy

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We have recently read with great interest the article by Gupta *et al.*[1] entitled 'Left main haematoma in an attempt to nail the left anterior descending ostium in a true 0,1,0 left main bifurcation disease: what next?'. We appreciate the authors for the management of this case report in which a left main (LM) haematoma occurred after drug-eluting stent (DES) implantation for the ostial stenosis of the left anterior descending (LAD) artery. On the other hand, we believe that there are some major drawbacks that need to be addressed.

The reasons for our concern are as follows: first, the optimal management of ostial LAD lesions (Medina 0.1.0 LM bifurcation) is a debatable issue.[2] The common choice is between accurate ostial stenting (OS) and crossover stenting (CS) from LM to the LAD disease. The OS stenting may cause difficulties in stent positioning, which can lead to longitudinal geographic miss.[2] If placed too distally, there is concern that the diseased ostium may be missed. If placed too proximally, it can produce free-floating struts in front of the circumflex ostium, creating a higher risk of stent thrombosis and in-stent restenosis. Moreover, even when properly performed, 'nailing' of the LAD ostium can cause damage to the circumflex ostium, mostly through displacement/displacement of the carina, although snow-plow phenomenon (plaque shifting), spasm, dissection, and haematoma may be seen as well.[2] Previously, Yamamoto *et al.*[2] demonstrated that the CS from LM to LAD was beneficial and safe in treating ostial LAD with acute coronary syndrome. A recent retrospective study indicated that during a mean of 13 ± 4.1 months of follow-up, the rate of combined outcome (19.6% vs. 8.9%; $P = 0.040$) was higher in LAD ostial stenosis patients treated with OS stenting than those treated with CS technique, mainly driven by more frequent target vessel revascularization (17.4% vs. 7.7%; $P = 0.048$) and the OS strategy was an independent predictor of poor clinical outcomes (HR: 2.561, $P = 0.021$).[3] Likewise, our recent registry shows that CS was associated with a better long-term ischaemic composite outcomes and lower all-cause mortality than OS in patients with Medina 0.1.0 LM bifurcation disease.[4] In this case report, operators preferred the OS technique as the initial revascularization strategy. Hence, the readers may wonder why CS rather than OS is not preferred for LAD ostial disease.

Second, intravascular imaging namely intravascular ultrasound (IVUS) and optical coherence tomography presents as a promising imaging modality for DES implantation compared to the gold-standard conventional angiography.[4] With the availability of 60 MHz IVUS catheters from several companies, it has become common practice to use 60 MHz IVUS for LM stenting.[4] The improved resolution highlights the advantages of IVUS, allowing clearer visualization of the inside of the plaque, including images of plaque rupture and deep penetration. Therefore, a detailed evaluation of the LM with high-resolution IVUS before DES implantation might have been a more optimal approach.

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