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Usefulness of Scoreflex NC in Treating Eccentric Calcific Lesions

CASE STUDY 1

Case Details

- Male patient in his 80s
- Patient suffered from chest pain during exertion beginning summer of 2017 and was referred by a close physician. Severe stenosis in the left circumflex artery (LCX) and a moderate stenotic lesion in the left anterior descending artery (LAD) were detected from coronary CT. Subsequent physiology evaluation (iFR) and angiography revealed that the LAD involved a bifurcation stenosis extending from the proximal to the diagonal branch [Fig. 1], requiring treatment also. The diagonal branch appeared to have a large perfusion region with a shallow branch angle, so sufficient lesion preparation prior to stenting would be most ideal.

Procedure

Using IVUS imaging, circumferential plaque calcification was identified on the opposite side of the diagonal artery [Fig.2] and debulking was performed using rotablator with a 2.25 mm burr for plaque volume reduction. Kissing balloon technique (KBT) was then performed with a 3.0 x 15mm Scoreflex NC in the LAD and a 2.5 x 15mm non-compliant balloon in the diagonal branch, both inflated at 20 atm upon optimal balloon positioning against the eccentric plaque [Fig.3]. Post balloon results were good with minimal plaque shift within the bifurcation and with sufficient space created for stenting [Fig.4].

Fig. 1

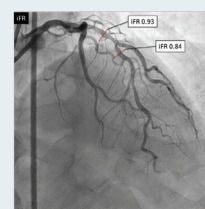


Fig. 2

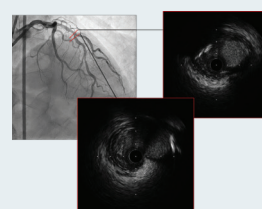


Fig. 3

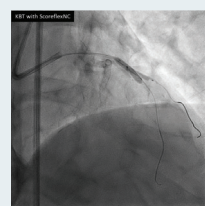


Fig. 4



Fig. 5

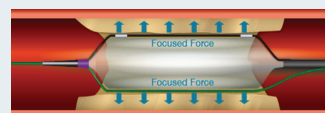
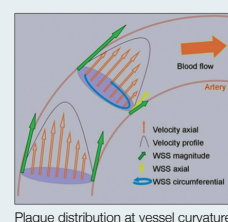


Fig. 6



Discussion

This case was an excellent demonstration of how Focused Force Angioplasty (FFA) is applied in lesion preparation by means of maximizing lumen channel space to achieve optimal procedural results. The FFA device selected is a non-compliant scoring device which utilizes a conventional delivery guidewire and a nitinol guidewire [Fig.5]. This form of expansion mechanism exerts highly concentrated force which facilitates much more effective plaque modification versus conventional balloons.

In terms of plaque morphology, the atherosclerotic segment within a lesion often lies on the side of the vessel with less curvature [Fig.6]. Therefore, Scoreflex NC with an extra short rapid exchange system enables guidewire maneuverability and balloon positioning against eccentric plaque followed by expansion with concentrated force.

Furthermore, Scoreflex NC being non-compliant with higher pressure tolerance vs. semi-compliant Scoreflex facilitates safer and more effective balloon dilatation yet without compromising on crossability as demonstrated in this case with the application of KBT.

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