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RESEARCH · EDUCATION

Chronic Total Occlusion, Multivessel Disease And Bifurcated Left Main Intervention. All-In-One.

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Background:

- Male 78 y, hypertension, diabetes (insuline).
- Chronic angina, prior 3 months in functional class 3 CCS.
- Dobutamine stress echocardiogram with inferolateral ischemia and viability. Left ventricle ejection fraction: 39%.
- Prior PCI 3 months ago to the circumflex artery.
- Rejected from CABG.

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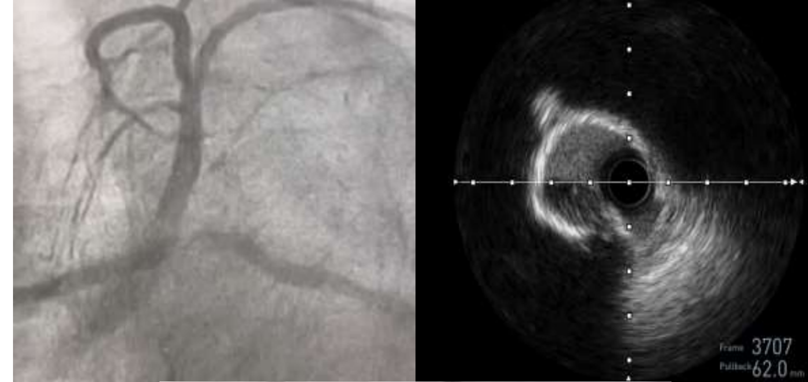
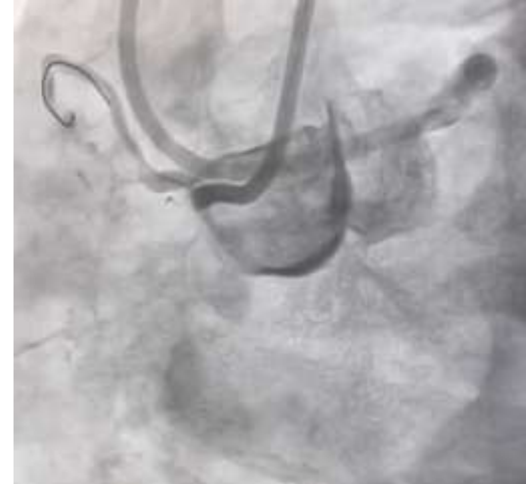
Coronary Angiogram

Left main to circumflex disease (Medina 1-0-1) with severely calcified plaque and 99% occlusion.

Right Coronary Artery: Diffusely diseased from the ostia. Chronic total occlusion in the ostioproximal segment:

- J-CTO 4 points, ambiguous cap, bending >45 degrees, previous attempt, length 65mm.
- Distal ambiguous cap, septal collaterals type CC1.





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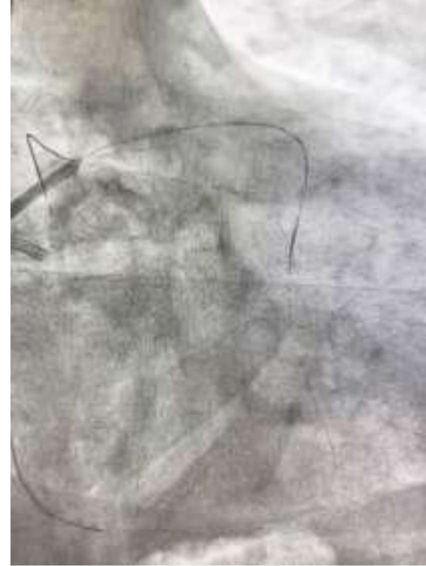
Procedure

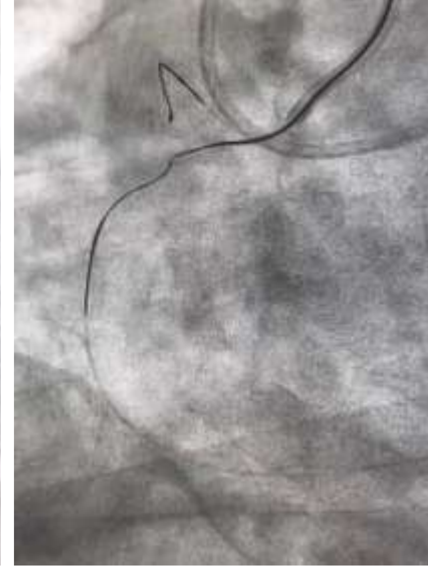
Bifemoral access, 7Fr sheaths, active anchoring balloon in RCA branch.

Strategies: AWE, RWE, RDR and ADR.

Step 1.- successful septal surfing from LAD with Samurai RC guidewire and Teleport microcatheter to the posterior descending artery.

Step 2.- retrograde wire escalation guidewires: Fielder XT, Miracle 3, Miracle 6, Hornet 14 and Gladius.



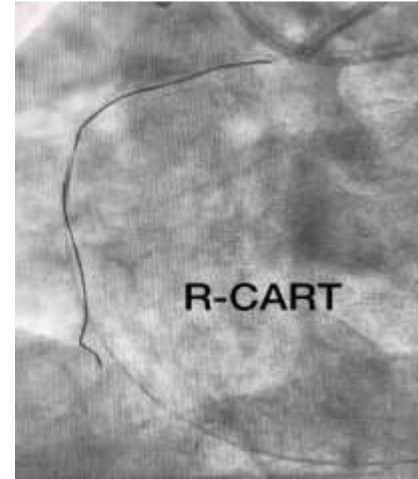


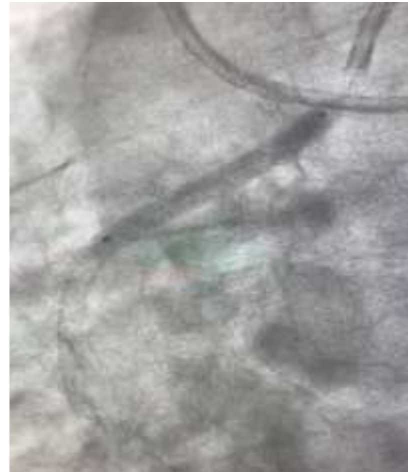
Procedure

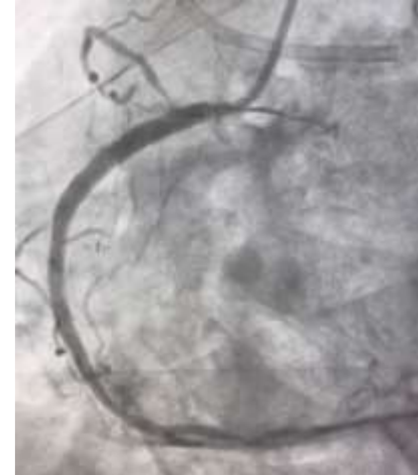
Step 3.- antegrade wire escalation with Mamba Flex microcatheter and guidewires: Sion Blue, Fielder XT and Gladius

Step 4.- retrograde CART communicating the retrograde system to the ascending aorta, externalized guidewire technique with Rotawire (330 cms).

Step 5.- Conventional PCI with semi-compliant balloons and implantation of everolimus-eluting stents with adequate final result.



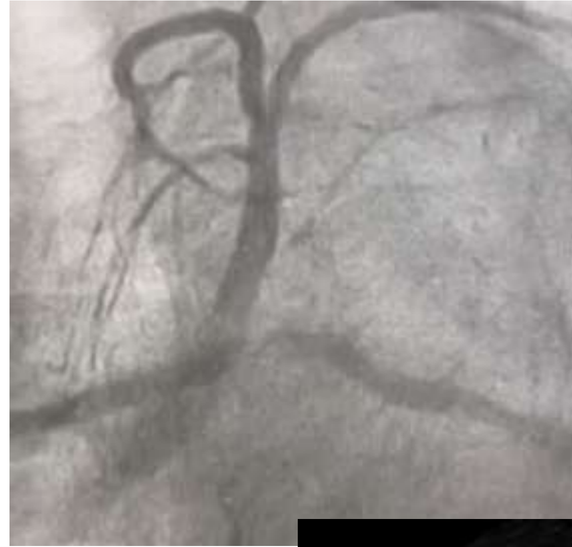


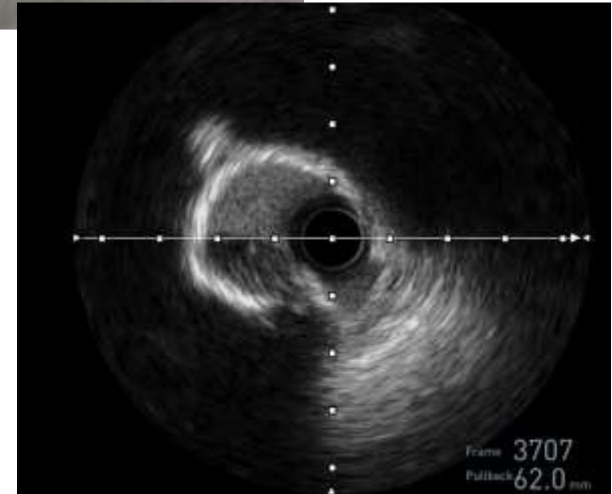


Procedure

Step 6.- LMCA – circumflex evaluation: IVUS guided; severely calcified ostial-proximal plaque, underexpansion of the proximal edge of prior stent, 60% stenosis in LMCA, circumflex artery ostium with 80% stenosis and LAD ostium with 20% stenosis.

RESOLVE-Score 5 points: intermediate risk of SB occlusion.





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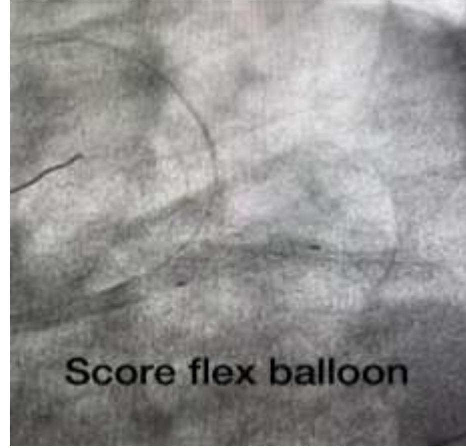
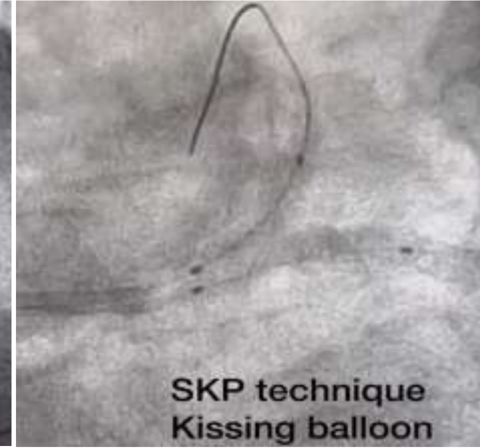
Procedure

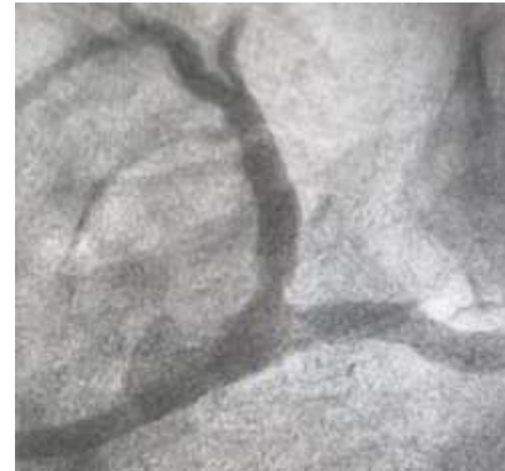
Step 7.- treatment of the circumflex and LMCA with scoring balloon, with luminal gain.

Step 8.- SKP (side-kissing-POT) provisional stent technique with implantation of a Everolimus eluting stent from LMCA to circumflex.

Contrast: 240ml, radiation time 42 minutes, kerma 6.8 Gy.







Take Home Messages

- Complex coronary intervention for multivessel arterial disease is feasible when the conditions of the procedure, the hemodynamic stability of the patient, and the use of resources remain as planned.
- Provisional stent techniques may be an option in the minimalist treatment of multivessel arterial disease.
- The development of the procedure will depend on the time to complete each step and the complications that could slow down the procedure.

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