An Interesting Approach to Complex Calcified Coronary Lesions

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Objectives

• Highlight the importance of pre-procedure planning for calcified coronary lesions.

• Discuss strategies for proper lesion preparation.
Case

• 68 year old man with crescendo angina.
• Exercise stress test was stopped early due to fatigue and dyspnea, but positive with ST depressions and mild inferior ischemia on perfusion imaging.
• CTA revealed a large caliber and heavily calcified RCA disease with no significant LCA disease.
• Medical regimen escalated, but continued limiting angina.
Case

- Coronary angiography was performed, which revealed heavily calcified sequential RCA lesions.
- Patient was referred to BIDMC for RCA PCI.
Approach to Calcified Lesions

• Access
  • Radial vs. Femoral
  • Sheath size?

• Guide catheter
  • Passive vs. active support

• Guide wire
  • Workhorse vs. Finesse/specialty
  • Long vs. short

• Rotablation?
  • Temporary pacemaker
  • Burr size
  • Rotablator wire
Our Approach

• Plan for rotablation with at least 1.75 Burr
• Right femoral access (8 French)
• Temporary pacemaker
• 8 Fr JR 4 guide
• Choice PT extra support wire

• Wire crossed the mid RCA lesion with difficulty, but could not advance past the distal lesion due to loss of guide wire torqueability and pushability.
Case

- Exchange the guide wire for the rotablator wire:
  - A 1.25 mm balloon would not cross the mid RCA lesion.
  - A fine cross catheter did not cross the mid RCA lesion.
  - An Echelon micro catheter would not cross the mid RCA lesion.

- Next step?
  - Corsair catheter
  - Laser
• Turbo Elite 0.9 mm laser catheter was used to prepare the mid RCA lesion to allow for guide wire exchange in the distal Vessel.
Post Laser Angiogram

Lesion preparation with laser allowed for passage of fine cross catheter and exchange for rotablator wire.
• Rota extra support wire was used.
• 1.5mm Burr and then 1.75mm Burr were used to prepare proximal to distal lesions.
Pre-dilation with a 2.5 mm x 20 mm OTW balloon
- A guideliner and further pre-dilation with 3.0 mm balloon were needed in order to advance three 4.0 mm drug eluting stents.

- Post-dilation with 4.0 mm NC balloon.
Take Home Message/Summary

• Importance of pre-procedure planning and lesion preparation in heavily calcified disease.

• Familiarity with laser as another tool in the armamentarium for percutaneous coronary interventions in heavily calcified lesions.
Thank You