Calcified Vessel Perforation

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Background History This is a 62year old gentleman with underlying diabetes mellitus, hypertension, dyslipidaemia. He was admitted to a district hospital 1 week ago for NSTEMI and referred to us for coronary angiogram. Echocardiogram showed LVEF 50% with RWMA anterior wall. ECG showed ST depression inferolateral leads.

Findings Coronary angiogram showed:
• Left Main Stem: Normal
• Left Anterior Descending: (Proximal, Mid) Severe disease 80% TIMI III, diffuse, moderate calcified
• Left Circumflex: (Proximal) Moderate disease 50% TIMI III
• Right Coronary Artery: Severe distal disease 99% TIMI III, diffuse, thrombus
PCI to RCA done uneventful and planned for stage PCI LAD with atherectomy.

Strategy The stage PCI to LAD was performed 2 days later. The initial plan was to use atherectomy for calcium debulking. We used EBU 3.5/6F guide catheter and Runthrough floppy wire to distal LAD, changed to Viper wire. IVUS showed circumferential calcium with long segment. Vessel size 3.25mm distally and proximally 3.5mm. Sion blue wired to diagonal. Orbital atherectomy was performed to LAD, 80 000 RPM then 120 000 RPM. Further predilatation with cutting balloon 3.0/13mm. Noted vessel perforation at mid LAD and patient was haemodynamically unstable. Covered stent 3.0/20mm was delivered to the perforation site with the use of guide extension. The stent was deployed at nominal pressure and post dilated with NC 3.0/15mm. The perforation was sealed. Proceeded with proximal LAD stenting using DES 3.0/38mm and post dilated with NC 3.5/15mm. Bedside echo showed minimal pericardial effusion and patient's haemodynamic improved significantly after the vessel perforation was sealed.