STEMI with cardiogenic shock and no vascular access for mechanical support

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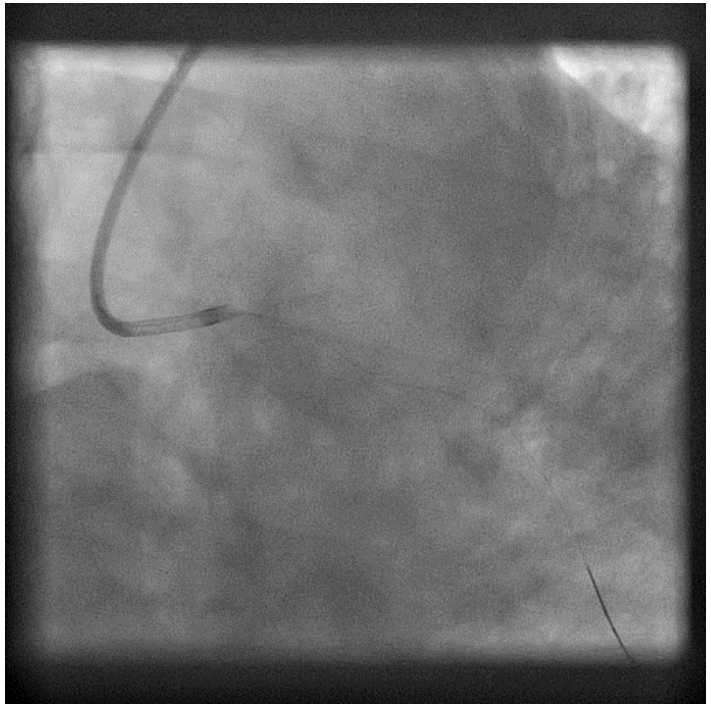
- ❑ I do not have any potential conflict of interest to report

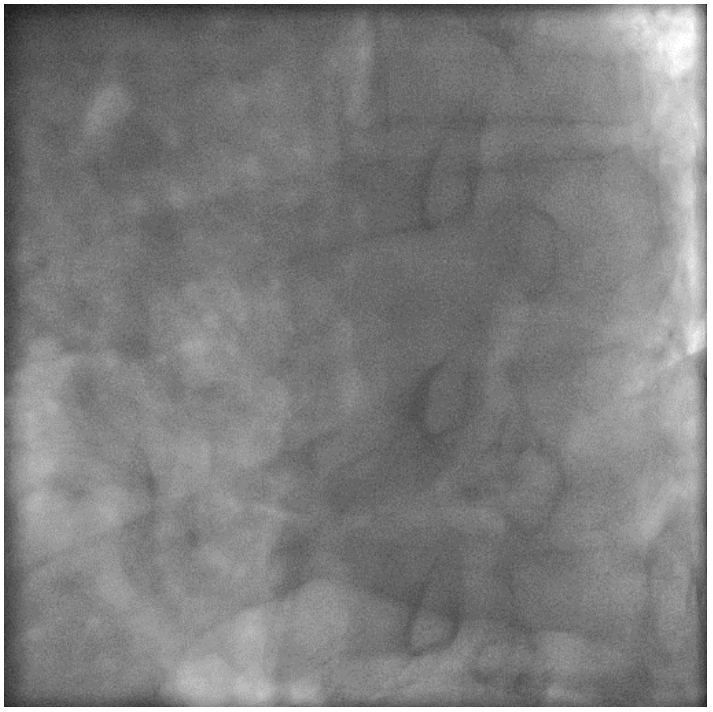
Patient history

- 64 years old male
- Known 3 vessel CAD (10/2020)
  - Distal LMCA 50%
  - Ostial LAD 90%
  - LCX/OM1 90%
  - CTO RCA
- Ischemic cardiomyopathy (LVEF 30%)
- Referred for cardiac surgery – delayed for COVID
- Comorbidities
  - Aorto-bifemoral bypass surgery with Dacron graft in 2016, (reoperation 2018)
  - Arterial hypertension
  - Hyperlipidaemia
  - COPD with pulmonary fibrosis

Clinical presentation

- 10/2020 presents in local hospital for acute chest pain
- ECG: sinus tachycardia, iLBBB
- Transferred to our centre (high risk NSTEMI)
- On admission
  - Cardiogenic shock – inotropic and vasopressor support
  - Newly developed RBBB





Cardiac surgeon consultation: operating rooms occupied, no peripheral access for ECMO, proceed with PCI

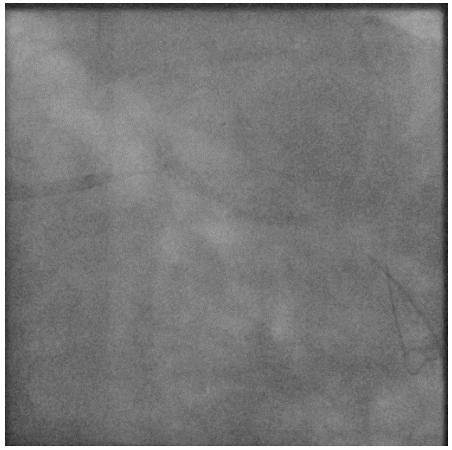
Right radial access – Slender 7Fr, EBU 4.0

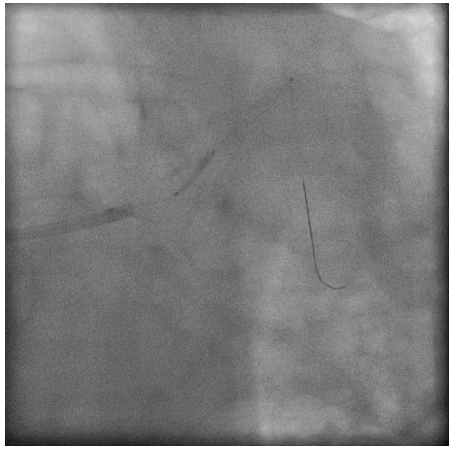
Sion blue in OM Dual lumen catheter – Sion Black in LAD

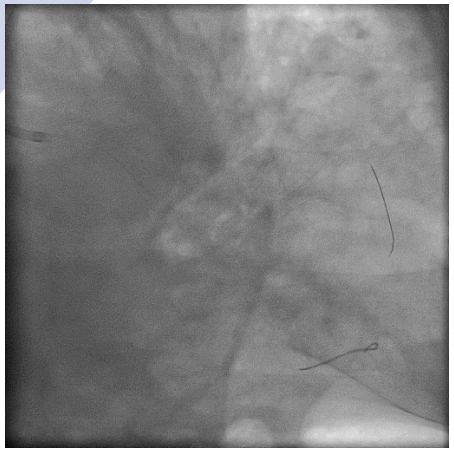
Predilatation with SC (2.0x15mm) and NC (2.5x12 mm) balloons

DES (Ultimaster) 3.0x15 mm with (3-4 mm protrusion into LM)

Final result after POT with NC 3.5x8 mm at 18 atm



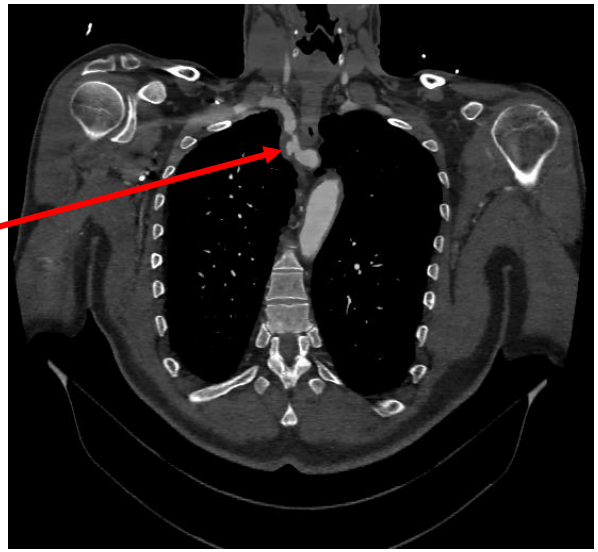




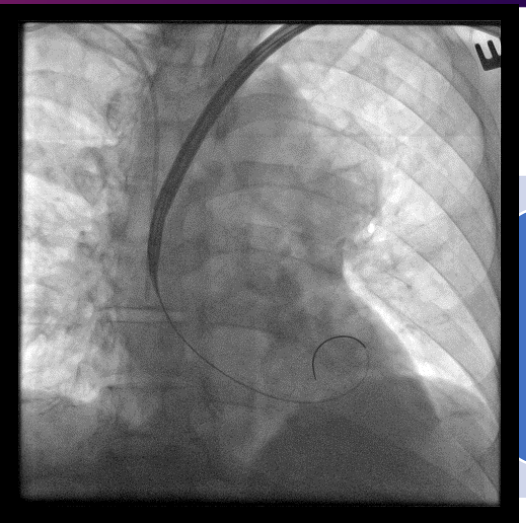
Further management

- ECHO: LVEF < 20 %
- High flow oxygen
- Clinical stabilization after 6 days and levosimendan (LVEF 25 %)
- Decision: high risk PCI with mechanical circulatory support
- CT for determination of support access
- Arteria lusoria!

Aneurysm and thrombosis after oesophagus



Mechanical circulatory support placement



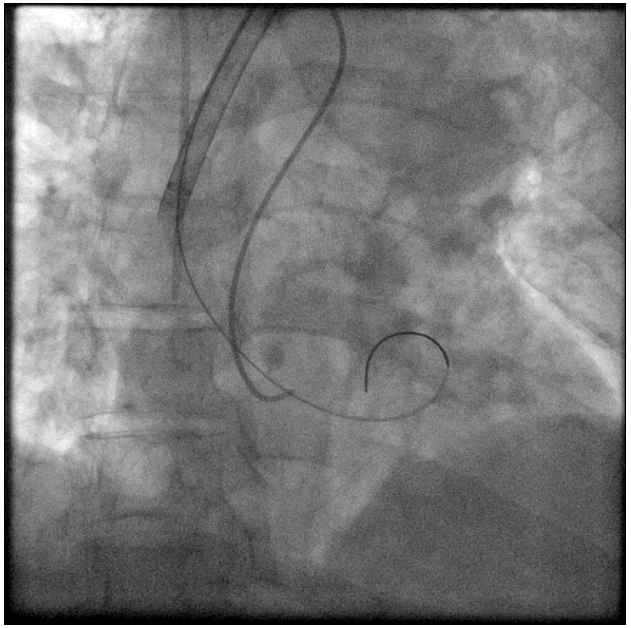
6Fr sheath

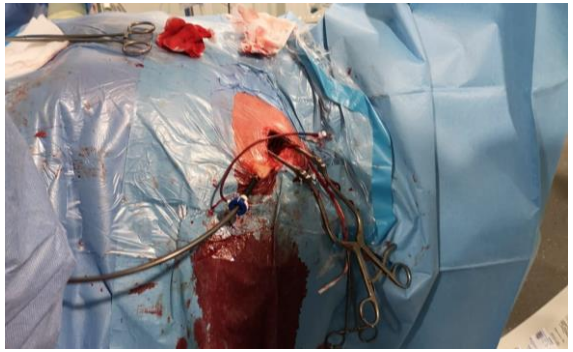
Aortic valve crossing using AL1

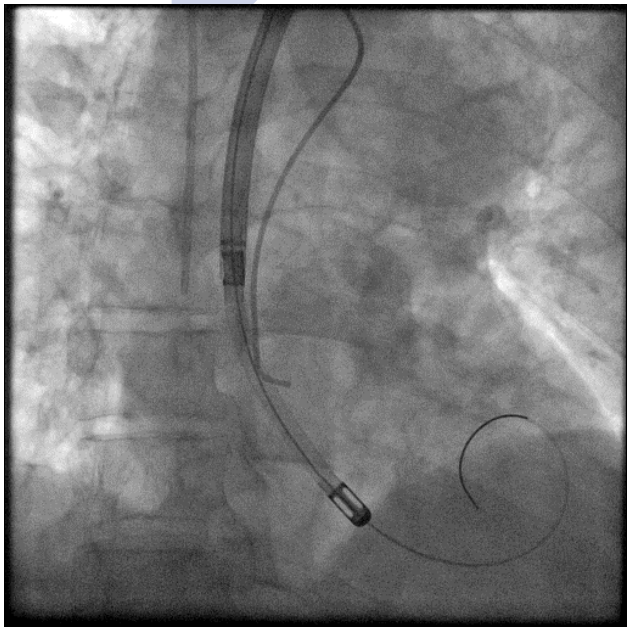
18Fr sheath placement over Lunderquist wire

iVAC2L placement in LV

- iVAC2L – fully percutaneous, 17Fr trans-femoral LVAD







PCI LMCA/LAD/LCX

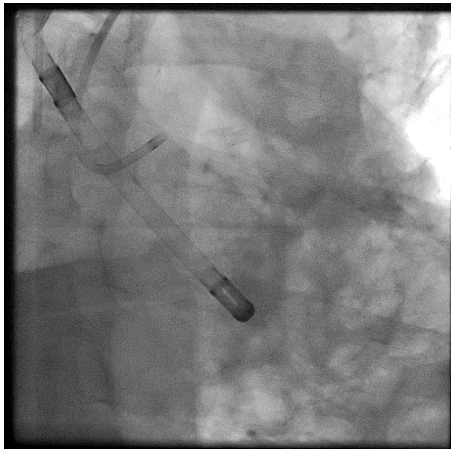
Right brachial access (pulseless RA) – Slender 7Fr, EBU 4.0

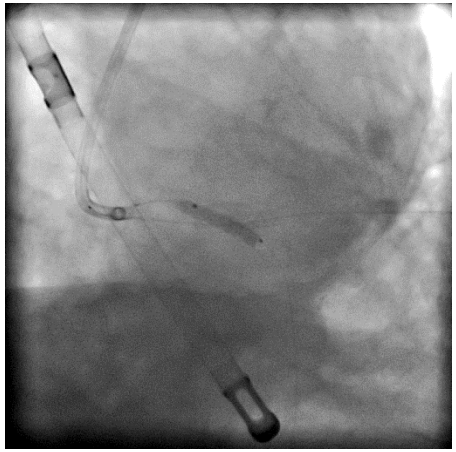
Sion blue in LAD and LCX through stent strut

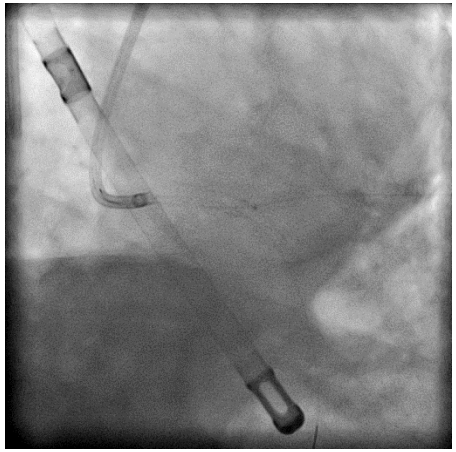
Strut dilatation with SC 2.5x15 mm balloon

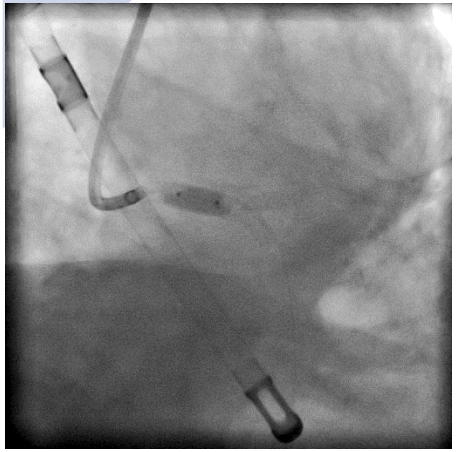
DES (Ultimaster) 3.5x24 mm LM - LCX

POT LM with NC (4.5x8 mm) balloon









PCI LMCA/LAD/LCX

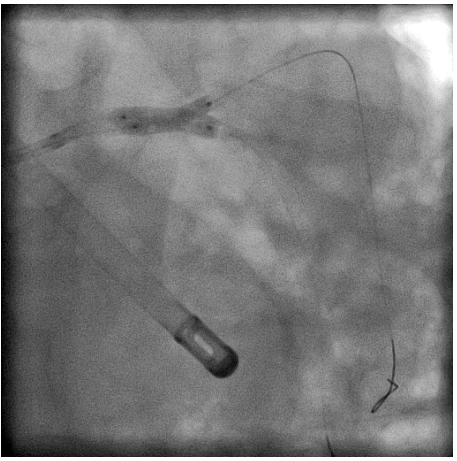
Sequential DES optimization – LCX NC 4.0x15 mm; LAD NC 3.0x15 mm

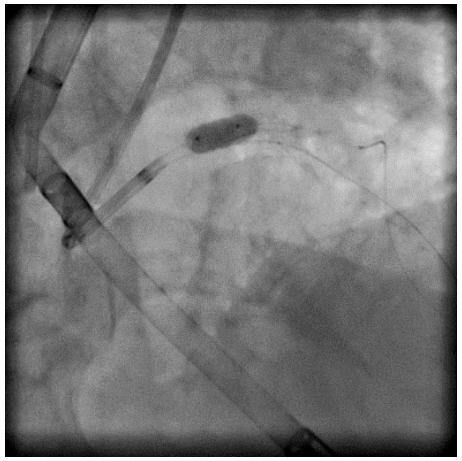
Kissing balloons with the same NC to 14 atm

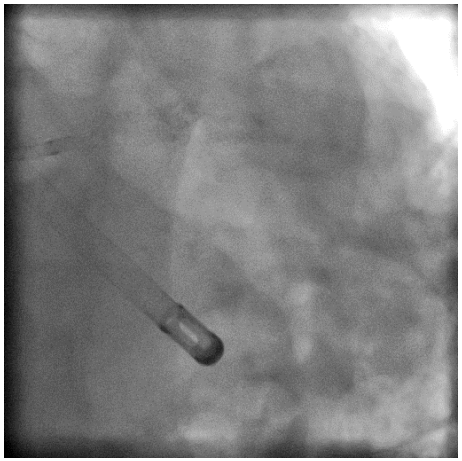
POT LM with NC 5.0x8 mm balloon to 20 atm

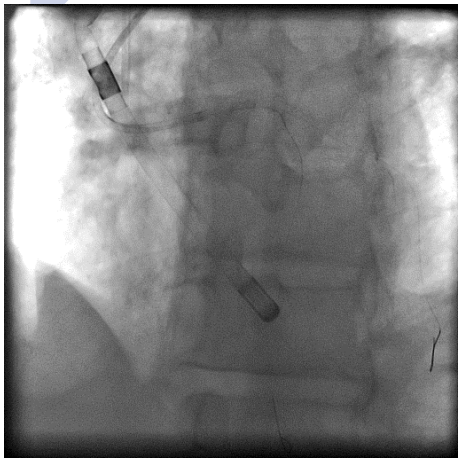
Final result

Percutaneous closing of brachial artery (Prostar Proglide)
iVAC2L removal with surgical closure of subclavian artery









Conclusion

- Staged management enabled successful revascularization
- STEMI in cardiogenic shock – culprit only
- Subclavian artery can be used for percutaneous MCS (iVAC2L) placement
- iVAC2L provides optimal support for high risk PCI
- Brachial approach as a last option is safe when using radial approach technique and dedicated equipment